

CenterStage™

CS-HD

Professional Video Processor



USER GUIDE

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USER GUIDE

WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

IMPORTANT NOTICE

(For U.S.Model)

The serial number for this equipment is located on the bottom of the unit. Please write this serial number on your enclosed warranty card and keep it in a secure area. This is for your security.

CAUTION:

This product satisfies FCC regulations when shielded cables and connectors are used to connect the unit to other equipment. To prevent electromagnetic interference with electric appliances such as radios and televisions, use shielded cables and connectors for connections.

NOTE:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.

- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

INFORMATION TO USER

Alteration or modifications carried out without appropriate authorization may invalidate the user's right to operate the equipment.

CAUTION:

- Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.
- The use of optical instruments with this product will increase eye hazard.

THE STANDBY/ON BUTTON IS SECONDARY CONNECTED AND THEREFORE DOES NOT SEPARATE THE UNIT FROM MAINS POWER IN STANDBY POSITION.

CAUTION: TO PREVENT ELECTRIC SHOCK, DO NOT USE THIS (POLARIZED) PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

ATTENTION: POUR PREVENIR LES CHOCS ELECTRIQUES NE PAS UTILISER CETTE FICHE POLARISEE AVEC UN PROLONGATEUR, UNE PRISE DE COURANT OU UNE AUTRE SORTIE DE COURANT, SAUF SI LES LAMES PEUVENT ETRE INSEREES A FOND SANS EN LAISSER AUCUNE PARTIE A DECOUVERT.

Please read through these operating instructions so you will know how to operate your model properly. After you have finished reading the instructions, put them away in a safe place for future reference.

IMPORTANT



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

CAUTION:
TO PREVENT THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

IMPORTANT SAFETY INSTRUCTIONS

READ INSTRUCTIONS – All the safety and operating instructions should be read before the product is operated.

RETAIN INSTRUCTIONS – The safety and operating instructions should be retained for future reference.

HEED WARNINGS – All warnings on the product and in the operating instructions should be adhered to.

FOLLOW INSTRUCTIONS – All operating and use instructions should be followed.

CLEANING – Unplug this product from the wall outlet before cleaning. The product should be cleaned only with a polishing cloth or a soft dry cloth. Never clean with furniture wax, benzene, insecticides or other volatile liquids since they may corrode the cabinet.

ATTACHMENTS – Do not use attachments not recommended by the product manufacturer as they may cause hazards.

WATER AND MOISTURE – Do not use this product near water – for example, near a bathtub, wash bowl, kitchen sink, or laundry tub; in a wet basement; or near a swimming pool; and the like.

ACCESSORIES – Do not place this product on an unstable cart, stand, tripod, bracket or table. The product may fall, causing serious injury to a child or an adult, and serious damage to the product.

Use only with a cart, stand, tripod, bracket or table recommended by the manufacturer, or sold with the product. Any mounting of the product should follow the manufacturer’s instructions, and should use a mounting accessory recommended by the manufacturer.

CART – A product and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the product and cart combination to overturn.



VENTILATION – Slots and openings in the cabinet are provided for ventilation and to ensure reliable operation of the product and to protect it from overheating, and these openings must not be blocked or covered. The openings should never be blocked by placing the product on a bed, sofa, rug, or other similar surface. This product should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided or the manufacturer’s instructions have been adhered to.

POWER SOURCES – This product should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supply to your home, consult your dealer or local power company.

LOCATION – The appliance should be installed in a stable location.

NON-USE PERIODS – The power cord of the appliance should be unplugged from the outlet when left unused for a long period of time.

GROUNDING OR POLARIZATION –

- If this product is equipped with a polarized alternating current line plug (a plug having one blade wider than the other), it will fit into the outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug should still fail to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug.
- If this product is equipped with a three-wire grounding type plug, a plug having a third (grounding) pin, it will only fit into a grounding type power outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the grounding type plug.

POWER-CORD PROTECTION – Power supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit the product.

OUTDOOR ANTENNA GROUNDING – If an outside antenna or cable system is connected to the product, be sure the antenna or cable system is grounded so as to provide some protection against voltage surges and built-up static charges. Article 810 of the National Electric Code, ANSI/NFPA 70, provides information with regard to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding connectors, location of antenna discharge unit, connection to grounding electrodes, and requirements for the grounding electrode. See Fig. A.

LIGHTNING – For added protection for this product during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna or cable system. This will prevent damage to the product due to lightning and power-line surges.

POWER LINES – An outside antenna system should not be located in the vicinity of overhead power lines or other electric light or power circuits, or where it can fall into such power lines or circuits. When installing an outside antenna system, extreme care should be taken to keep from touching such power lines or circuits as contact with them might be fatal.

OVERLOADING – Do not overload wall outlets, extension cords, or integral convenience receptacles as this can result in a risk of fire or electric shock.

OBJECT AND LIQUID ENTRY – Never push objects of any kind into this product through openings as they may touch dangerous voltage points or short-out parts that could result in a fire or electric shock. Never spill liquid of any kind on the product.

SERVICING – Do not attempt to service this product yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.

DAMAGE REQUIRING SERVICE – Unplug this product from the wall outlet and refer servicing to qualified service personnel under the following conditions:

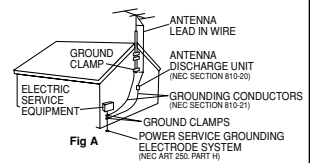
- When the power-supply cord or plug is damaged.
- If liquid has been spilled, or objects have fallen into the product.
- If the product has been exposed to rain or water.
- If the product does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the product to its normal operation.
- If the product has been dropped or damaged in any way.
- When the product exhibits a distinct change in performance – this indicates a need for service.

REPLACEMENT PARTS – When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock or other hazards.

SAFETY CHECK – Upon completion of any service or repairs to this product, ask the service technician to perform safety checks to determine that the product is in proper operating condition.

WALL OR CEILING MOUNT – The product should not be mounted to a wall or ceiling.

HEAT – The product should be situated away from heat sources such as radiators, heat, registers, stoves or other products (including amplifiers) that produce heat.



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EMT

ELECTRO MAGNETIC TEST, INC.

1547 Plymouth Street, Mountain View, CA 94041

Tel: (415) 965-4000 Fax: (415) 965-3000

Statement of Compliance

Presented to

FOCUS ENHANCEMENTS

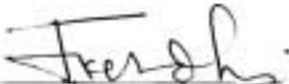
The following model was tested and found to be fully compliant with
FCC Class B, EN 55022 Class B, EN 55024,
EN 61000-3-2 Class A, and EN 61000-3-3.

CENTERSTAGE
M/N: CSI

Tested at Electro Magnetic Test, Inc. on April 12, 15, 16, and 18, 2002

Certificate Number: 15869


Kevin Bothmann
Lab Manager


Jay Gandhi
President

FOCUS Enhancements, Inc. warrants this product against defects in materials or workmanship as follows:

For a period of TWO years from the date of purchase, FOCUS Enhancements, Inc. will repair or replace the unit, at our option, without charge for parts or labor. After the period of TWO years, you must pay all parts and labor charges.

The limited warranty is extended only to the original purchaser and is valid only to consumers in the United States and Canada. It does not cover damage or failure caused by or attributable to Acts of God, abuse, misuse, improper or abnormal usage, faulty installation, improper maintenance, lightning, or other incidences of excessive voltage, or any repairs or tampering by other than a FOCUS Enhancements authorized repair facility. It does not cover replacement of batteries or other consumable parts, transportation costs or damage in transit. This warranty will become void if the serial number or model number identification has been wholly or partially removed or erased. Repair or replacement under the terms of this warranty do not extend the terms of this warranty. This warranty can not be modified by an agent of FOCUS Enhancements, Inc. unless in written and signed by an officer of FOCUS Enhancements, Inc.

Should this product prove defective in workmanship or material, the consumer's sole remedies shall be such repair or replacement provided by the terms of this warranty. Under no circumstances shall FOCUS Enhancements, Inc. be liable for any loss or damage, direct, consequential, or incidental, arising out of the use of or inability to use this product. Some states do not allow limitations on how long an implied warranty

lasts or the exclusions or limitations of incidental or consequential damages, so the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights. You may also have other rights which vary from state to state.

For customers outside the USA or Canada, please contact your dealer or distributor for repairs or technical support.

In the United States or Canada, to obtain warranty service, call or write the FOCUS Enhancements, Inc. Technical Support Line for a Return Material Authorization (RMA) number. Technical Support can be reached at:

Email: support@FOCUSinfo.com
Telephone: 408-370-9963. 8AM-5PM,
Monday to Friday (PST)
(Hint: Mondays tend to be the busiest)
Fax: 408-866-4859
Address: FOCUS Enhancements, Inc.
1370 Dell Ave.
Campbell, CA. 95008

Please mark the RMA number clearly on the outside of the package. Include a copy of your sales receipt, a brief description of the symptoms, your name, address, phone number and any special shipping instructions. Then deliver or ship the product, postage and shipping costs prepaid, to a FOCUS Enhancements authorized repair facility. For the name of the nearest repair facility, contact FOCUS Enhancements, Inc. Technical Support.

INTRODUCTION & SETUP

Introduction

Thank you for purchasing the CenterStage CS-HD Video Processor from FOCUS Enhancements. CenterStage offers exceptional image quality, flexibility, and the latest de-interlacing digital video processing and scaling technology.

The purpose of this User Guide is to describe the various capabilities, specifications and other information about your CenterStage unit. For additional information or technical support, please contact your FOCUS Enhancements distributor or dealer. If you are in the US or Canada, you can contact FOCUS Enhancements directly at:

Technical Support

Email: support@FOCUSinfo.com
WWW: <http://www.focusinfo.com/support/>
Telephone: 408-370-9963. 8AM-5PM, Monday to Friday (PST)
(Hint: Mondays tend to be the busiest)
Fax: 408-866-4859

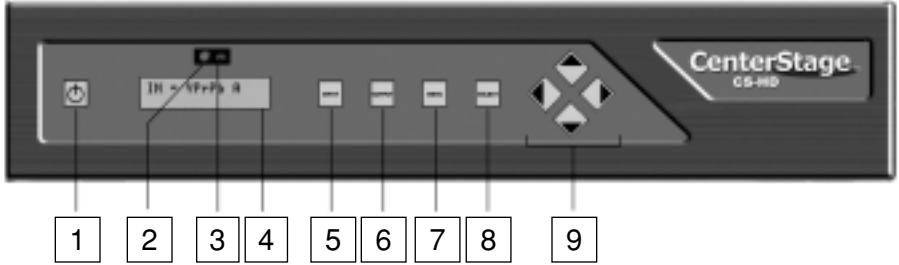
Unpacking & Inventory

Remove your CenterStage unit from its shipping container. You should have the following items included with the unit:

- CenterStage unit
- User Guide
- IEC Power Cord
- VGA pass-thru cable (HD15M – HD15F)
- Infrared Remote Control and Batteries
- Warranty Card and Limited Warranty Statement

Please ensure all these items are included. Inspect the CenterStage unit for any signs of shipping damage. It's advised that you keep all shipping materials if the unit is to be moved or returned for service at a later date.

FRONT PANEL



1. POWER

This button powers the CenterStage unit ON and OFF. The On/Off power switch on the rear panel of CenterStage must be in the ON position for the front panel power switch to work.

2. INFRARED REMOTE SENSOR

Sensor for CenterStage’s infrared remote control unit.

3. AMBIENT LIGHT SENSOR

This sensor detects room ambient light and changes the brightness of CenterStage’s LCD and buttons. In dark areas, the CenterStage LCD and buttons will be dimmer while in bright areas, they will be brighter.

4. LCD DISPLAY

The 32-character LCD displays the current CenterStage input source and output resolution (ships with a protective cover film, simply remove before using).

5. INPUT

Pressing this button cycles through the available inputs on CenterStage. To execute, press the SELECT button. If you do not press the SELECT button, the input will revert to the previous selection. The current input will display on the top line of the LCD display.

6. OUTPUT

Pressing this button cycles through the available output resolutions on CenterStage. To execute, press the SELECT button. If you do not press the SELECT button, the output will revert to the previous selection. The current output will display on the bottom line of the LCD display.

7. MENU

Pressing this button brings up the CenterStage Main Menu on the On Screen Display. It is necessary to have a display device connected to view this menu.

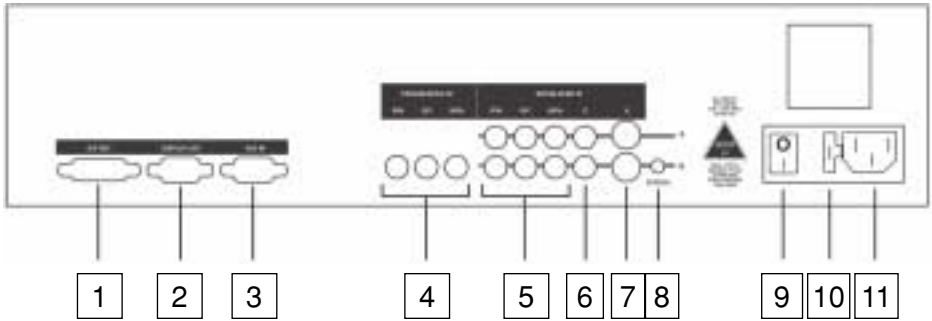
8. SELECT

This button is used for selecting various options within the CenterStage On Screen Display Menu. It is also used for executing a new INPUT or OUTPUT selection.

9. NAVIGATION BUTTONS

This group of buttons allows for navigation through the various CenterStage menu items.

REAR PANEL



1. DVI OUT

DVI (Digital Visual Interface) digital high resolution output.

2. DISPLAY OUT

HD-15F high resolution output.

3. VGA/HDTV IN

HD-15M active buffered VGA or Analog HDTV pass through.

4. PROGRESSIVE IN – Y, Pb, Pr

Progressive YPrPb input

5. INTERLACED IN – Y, Pb, Pr

Channel A & B
Interlaced YPrPb input

6. INTERLACED IN – C (COMPOSITE)

Channel A & B
Interlaced Composite input

7. INTERLACED IN – S (S-VIDEO)

Channel A & B
Interlaced S-Video input

8. SCREEN

Screen Trigger (12V, 3.5mm, 2-pin, Tip=+)

9. POWER SWITCH

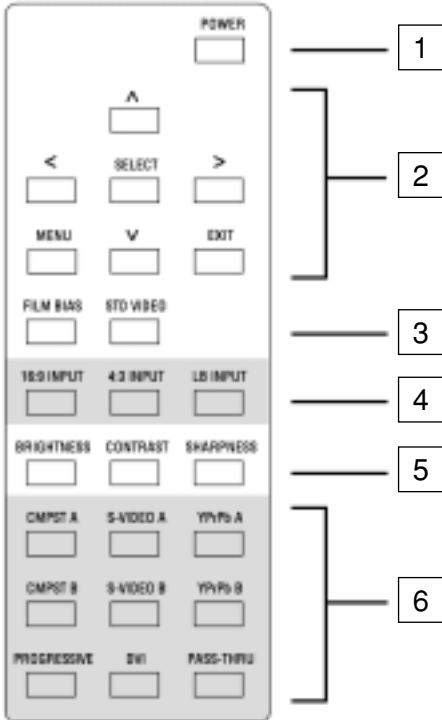
10. FUSE

250V rating, 1.6A slow blow, 5mm x 20mm.
Replace with same fuse only.

11. IEC POWER CONNECTOR

AC Power Inlet. Use supplied IEC power cable only. 100-240V AC, Auto Ranging, 50-60Hz

REMOTE CONTROL



1. POWER

CenterStage ON/OFF Button.

2. ON SCREEN DISPLAY CONTROL

This bank of buttons features control for the CenterStage On Screen Display (OSD). Pressing MENU launches the OSD, EXIT will exit the particular menu item or the OSD itself, SELECT is used to choose various options in the menus and the arrow keys are used for navigation.

3. FILM/VIDEO SELECT

This bank of buttons is used for selecting either FILM BIAS or STANDARD VIDEO DSP settings for the output.

4. INPUT ASPECT RATIO

This bank of buttons allows selection of the input aspect ratio. Choose from 16:9, 4:3 or LB (Letterbox, 4:3 or 16:9).

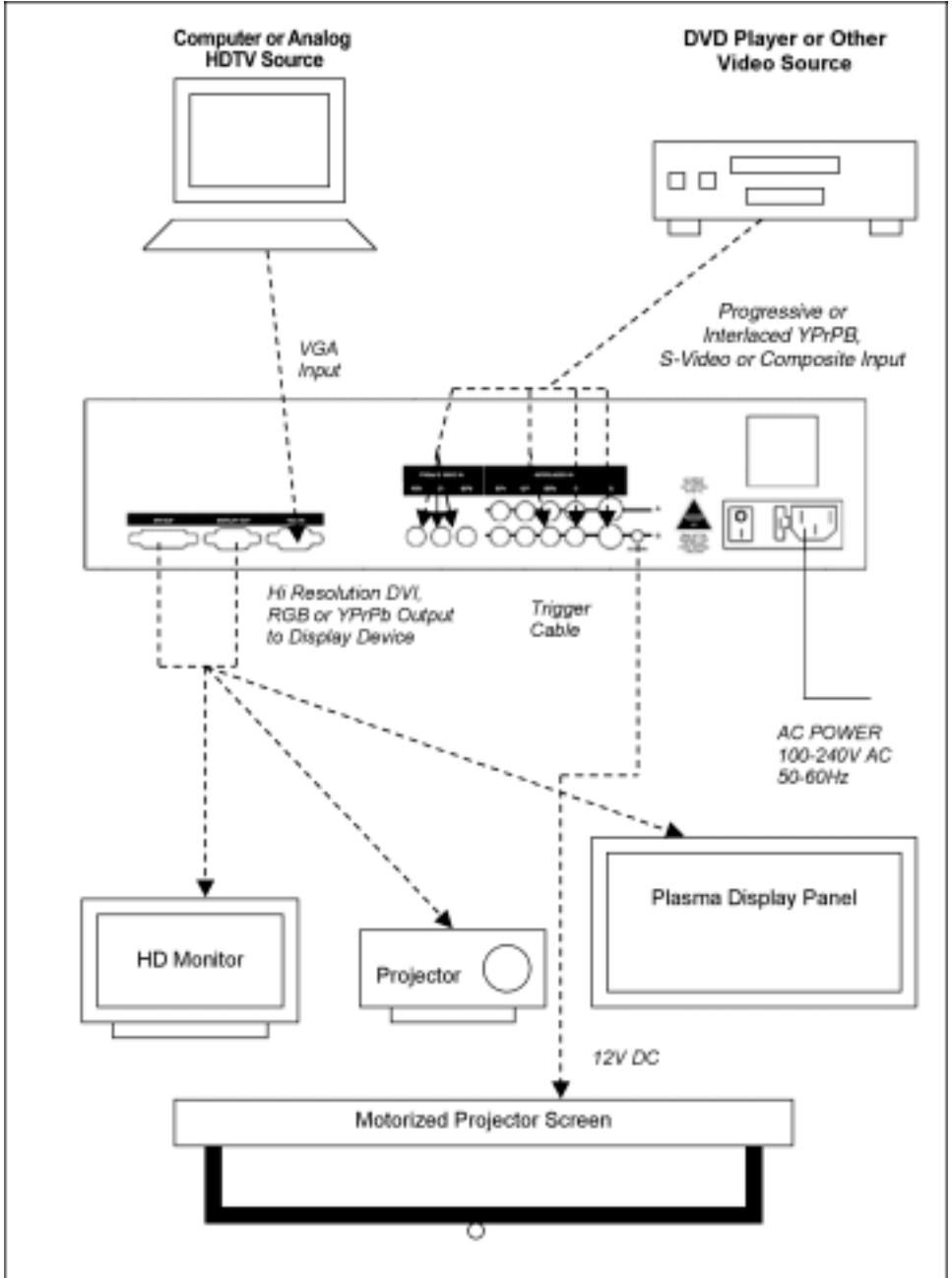
5. PICTURE SETTINGS

This bank of buttons allows for adjustment of the output image. It will launch CenterStage's OSD to adjust either BRIGHTNESS, CONTRAST or SHARPNESS.

6. INPUT SELECTION

This bank of buttons allows selection of CenterStage input sources. Choose from Composite Ch. A, Composite Ch. B, S-Video Ch. A, S-Video Ch. B, YPrPb (Component) Ch. A, YPrPb (Component) Ch. B, Progressive (Component) and VGA Pass Thru. Upon selection CenterStage will immediately change to that selected input source. It is not necessary to press SELECT once you have chosen an input on the remote. DVI is not used on the CS-HD model.

TYPICAL CONFIGURATION



SETTING UP CENTERSTAGE

Once you have unpacked your CenterStage unit and have become familiar with the front and back panel and remote features, install the CenterStage unit where it will be used. Study the TYPICAL CONFIGURATION from the previous page and identify which input sources as well as which output displays you intend to use with your CenterStage video processor. You may need to consult your input and display device manuals for precise specifications. Make sure you have these available before attempting to connect anything.

Connecting Input Devices

Once you have identified the input devices you intend to use, connect these devices to CenterStage. It is possible to connect nine devices to CenterStage. Be aware that while devices may have similar connectors, the output standard may differ from one unit to another. Consult your input devices' specifications for more information. Your input choices are:

CenterStage CS-HD

Input	Connector	Standard	Input Device Example
VGA	HD-15M	VESA or HDTV	Computer, HDTV Analog
Progressive	3 x RCA	YPrPb	Progressive Output DVD Player
2 x Interlaced YPrPb	3 x RCA	YPrPb	DVD Player
2 x Interlaced Composite	RCA	Composite	Set Top Box, Cable Box, Satellite
2 x Interlaced S-Video	4- pin mini DIN	S-Video (Y/C)	Set Top Box, Cable Box, S-Video Satellite Receiver, DVD Player

CONNECTING TO DISPLAY DEVICES

Once you have connected your desired input devices you can now connect your display device. Be aware that while devices may have similar connectors, the output standard may differ from one unit to another. While it is possible to connect two display devices to CenterStage, we recommend that only one be connected at a time. This is due to the fact that output settings are global and settings for one display may not match that of another. The two outputs available on CenterStage are:


CenterStage CS-HD

Output	Connector	Standard	Output Device Example
DISPLAY OUT	HD-15F	Analog	Projector, HD Monitor, Plasma Display, Computer Monitor.
DVI OUT	DVI-D	DVI	DVI enabled Plasma Display, HD Monitor or Computer Monitor

Powering Up CenterStage, Input and Output Devices

Once you have connected all desired input devices and your display device, power up each of the input devices followed by the display device. If you are unsure how to do this, consult your input or display device instruction manual.

Once all your input devices and display are powered up, you can power up the CenterStage unit. First check that you have connected the supplied IEC power cable and then turn on the Main Power Switch on the rear of the unit (see page 9 for more details). Then you can either turn on CenterStage by pressing the “POWER” button on the supplied remote control or by pressing the

(POWER)  button on the front panel of the unit. The LCD display and buttons will light up green.



If you have a video source connected to the “Composite Channel A” input on CenterStage, you will see the following LCD display:

```
IN= COMPOSITE A
720x480
```

If no video source is connected to “Composite Channel A” on CenterStage, you will see the following LCD display:

```
IN= COMPOSITE A?
720x480
```

SELECTING AN INPUT SOURCE

Once you have powered up your CenterStage unit and sources, it is possible to select the desired input source. This is done by pressing CenterStage’s (INPUT)  button. By pressing this button, CenterStage will cycle through the available inputs. To execute a selection, press the (SELECT)  button. If SELECT is not pressed, the CenterStage will revert to the previous selection. It is also possible to select an input directly using the CenterStage remote control unit (It is not necessary to press SELECT on the remote). These will display on the top line of the CenterStage LCD display.

Available inputs for CenterStage CS-HD are:


INPUT NAME	INPUT
COMPOSITE A	Composite Channel A
COMPOSITE B	Composite Channel B
S-VIDEO A	S-Video Channel A
S-VIDEO B	S-Video Channel B
YPrPb A	YUV (Y,Pr,Pb) Channel A
YPrPb B	YUV (Y,Pr,Pb) Channel B
PROG. YPrPb	Progressive Component (Y,Pr,Pb)
VGA PASS	VGA (Computer) Active Pass-Thru

If a video input is detected on the selected input, CenterStage will display the output resolution on the bottom line of the LCD display. If no video input is detected, CenterStage will display a question mark (“ ? ”) next to the input name on the LCD display.

SELECTING AN OUTPUT RESOLUTION

To select an output display resolution, first consult the User Guide or specification of your Display device.

Press CenterStage's (OUTPUT)  button

to cycle through the available output resolutions. To execute a selection, press the (SELECT)  button. If SELECT is not pressed, the CenterStage will revert to the previous selection. These will display on the bottom line of the CenterStage LCD display.

The factory set of available output resolutions for CenterStage CS-HD are:

The CenterStage-HD will support frame rate conversion as part of its internal controller, and therefore, the output frequency is not limited to 50Hz output when inputting a PAL 50Hz signal. The CenterStage-HD will support the following output resolutions:


720x480
720x576
960x540p
720p
1080i
1080p
720x480_DVI
720x576_DVI
720p_DVI
1080i_DVI
1280x1024_DVI
720x480_RGB
720x576_RGB
720p_RGB
1080i_RGB
1280x1024_RGB

Your display may work with several resolutions. It also may require some adjustment on the display itself in order to size the picture etc. It is recommended that you adjust your display device first before adjusting/fine tuning with CenterStage.




THE MAIN MENU

It is possible to change picture settings, output selections, picture size and position, input selections as well as other settings using the CenterStage Main Menu. The Main Menu appears on the CenterStage On Screen Display (OSD). To activate the Main Menu, you must have CenterStage connected to an appropriate display device and it is also a good idea to use a setup DVD such as *Video Essentials - Optimizing Your Audio/Video System* or the *AVIA Guide to Home Theater*. These will assist greatly in achieving a good image.

Navigating the Main Menu

To bring up the CenterStage OSD, press the (MENU)  button. It is also possible to launch the Main Menu by pressing the MENU button on the remote control unit. The following should appear on your display device:



To navigate through the menu, press the (UP)  and (DOWN)  buttons on the CenterStage front panel (you can also use the remote control). To select a particular menu, press the (SELECT)  button. The selected menu will appear on the On Screen Display.

Picture Settings Menu

In the PICTURE SETTINGS menu, it is possible to change input source:

BRIGHTNESS: Values are adjustable between -50 and +50.

CONTRAST: Values are adjustable between -50 and +50.

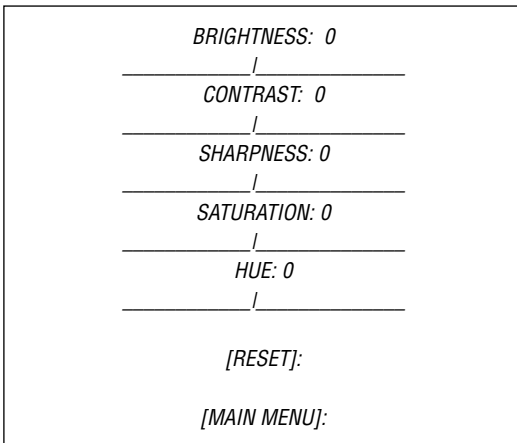
SHARPNESS: Value is adjustable between -50 and +50.

SATURATION: Also known as Color Saturation. Values are adjustable between -50 and +50.

HUE: Value is adjustable between -50 and +50.

RESET: Selecting this option will return all values in PICTURE SETTINGS to the factory default state (all values reset to 0).

MAIN MENU: Exits to the Main Menu.





In all cases above, the default value will produce internal digital values in accordance with ITU656 and an analog RGB HI RES out with a full-scale range of 0.0 to 0.7V when a 100% amplitude and a 100% saturation color bar test pattern is applied to the CenterStage composite input.

Output Selection Menu

In the OUTPUT SELECTIONS menu, it is possible to change variables relating to the output of CenterStage. The OUTPUT SELECTIONS menu items are:

RESOLUTION: Identifies the current output resolution.

OUTPUT ASPECT: Allows selection of either 4:3, 4:3 AL (Anamorphic lens) or 16:9 output aspect ratio for the selected resolution.

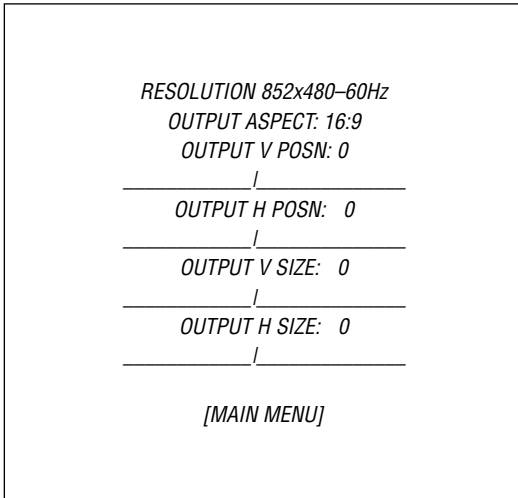
OUTPUT V POSN: Allows you to adjust the vertical position of the output image (use the (LEFT)  button for up and the (RIGHT)  button for down). Values are adjustable between -50 and +50.

OUTPUT H POSN: Allows you to adjust the horizontal position of the output image. Values are adjustable between -50 and +50

OUTPUT V SIZE: Allows you to adjust the vertical size of the output image (use the (LEFT) button for up and the (RIGHT) button for down). Values are adjustable between -50 and +50.

OUTPUT H SIZE: Allows you to adjust the horizontal size of the output image. Values are adjustable between -50 and +50

MAIN MENU: Exits to the Main Menu.



Input Selections Menu

In the INPUT SELECTION menu, it is possible to change the following:



INPUT SELECT: Allows selection of a particular input. Changes made only affect the currently selected input.

INPUT ASPECT: Allows selection of different input aspect ratios. Choices include 4:3, 16:9, 4:3 LB (Letterbox) and 16:9 LB (Letterbox).

COLOR STANDARD: Selects color standard as either NORMAL (NTSC-US and PAL), NTSC-JAPAN, NTSC-4.43 (PAL 60Hz) and SECAM.

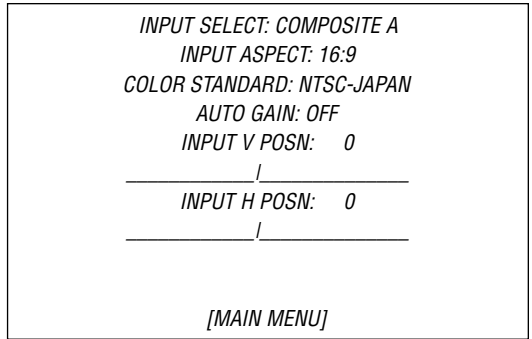
AUTO GAIN: Selects Auto Gain ON or OFF. Auto Gain should be selected ON when viewing off-air, cable box or satellite program. Auto Gain compensates for changes in luminance from channel to channel or program to program. For DVD and other high quality sources, select auto gain to OFF.

INPUT V POSN: Allows you to adjust the vertical position of the input image (use the

(LEFT)  button for up and the (RIGHT)  button for down). Values are adjustable between -50 and +50.

INPUT H POSN: Allows you to adjust the horizontal position of the input image. Values are adjustable between -50 and +50

MAIN MENU: Exits to the Main Menu.



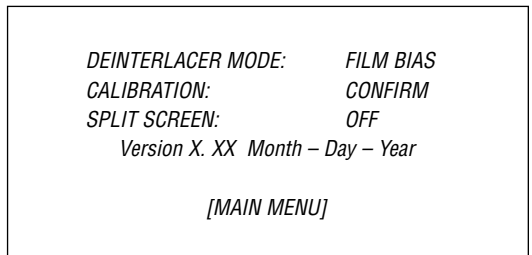
Miscellaneous Menu

The **MISCELLANEOUS** menu allows for selection of some of the different modes available in CenterStage. It is possible to change:

DEINTERLACER MODE: To provide greater control over the de-interlacer mode of operation, three options are available:

AUTO MODE: This mode is best when you don't know the quality of the 3:2 and 2:2 pulldown sequencing in a movie, or are viewing a standard video source. This mode handles 3:2 and 2:2 pulldown properly, but performs better than "Film Bias Mode" when decoding poorly edited film material.

FILM BIAS MODE: This mode should be used only when you know that the movie you are watching was properly edited to preserve the 3:2 or 2:2 pulldown cadence. This would generally only be with good quality DVD movies. We do not recommend using this mode when viewing a movie unless the source is a DVD or good quality tape!



PFDA Off Mode: This mode disables the "Progressive Frame Detection Assist" processor, which assists the de-interlacer in determining the best de-interlacing mode. This can improve some unusual video material, but should not be used for most normal viewing.

CALIBRATION: Calibrates the progressive inputs. Should be only used once the first time a progressive input is used.

SPLIT SCREEN: Turns Split Screen Mode ON or OFF. Split Screen mode is useful for demonstration purposes. When Split Screen is ON, the left half of the display is showing normal CenterStage processing while on the right half, motion compensation is disabled on the input. The difference is apparent in content that contains lots of movement. Ensure to turn Split Screen to OFF for normal viewing.

VERSION NUMBER: Displays the current system software version and its release date.

MAIN MENU: Exits to the Main Menu.

TECHNICAL SPECIFICATIONS

INPUT

Horiz. Range (Interlaced):	NTSC 15. 734kHz, PAL 15. 625 kHz
Vert. Range (Interlaced):	NTSC 30Hz, PAL 25Hz
Horiz. Range (Progressive):	31. 5kHz
Vert. Range (Progressive):	60Hz
Color Standards:	NTSC, NTSC-I, PAL (50), NTSC 4. 43 (PAL 60), SECAM
Connectors:	(2x) Composite – RCA (2x) S-Video (Y/C) – 4 pin mini DIN (2x) Component (YPrPb or RGB) – RCA Progressive (YPrPb) – RCA Computer Pass-Through HD-15 male (VGA)
Aspect Ratios:	4:3 (standard), 16:9 (widescreen), 4:3LB (letterbox) and 16:9LB (letterbox)
Memory:	Auto-save input parameters
Adjustments:	Contrast, Brightness, Saturation, Hue, Sharpness
Power Usage:	100-240 VAC, Auto-ranging 50 to 60Hz
Optional Accessories:	HD15 to BNC cable, rack mount brackets and screws (CS1 and CS-HD only, standard feature on CS2)
Warranty:	Two years
Weight & Size:	CS-HD Tabletop w/ feet 17" x 9" x 4", 9. 5 lbs 430mm x 229mm x 102mm, 4. 3kg

OUTPUT

Connectors:	Digital DVI-D receptacle HD-15 female (VGA)
Aspect Ratios:	4:3, 16:9 and Anamorphic Lens Support

APPENDIX A

IR REMOTE CONTROL INFORMATION

The CenterStage CS-HD Video Processor can be controlled by an Infrared (IR) Remote Control. This Remote can be used to alter many of the settings in the CenterStage, by either access to the "Menu" functions, or by "Direct Access" to commonly used features.

CenterStage CS-HD Remote Control:

The CenterStage CS-HD remote control supports the remote control functions most commonly used by the consumer. The commands include the following:

- Menu and Navigation Commands
- Video Processing Modes
- Input Aspect Ratio Selection
- BCS Adjustments (Brightness, Contrast, Sharpness)
- Input Selection
- Power Control

These are the most commonly used commands, but not the only commands.

Auxiliary Remote Control Commands:

The Auxiliary commands allow direct access to functions that are generally only available through the standard CenterStage remote as "Toggle" commands.

While it is acceptable to have "Toggle" commands on a typical remote control, Home Theater Remotes need to have direct access to features without knowing the previous state of the function. These include direct access to "Power" and Input Aspect Ratio features.

IR Remote Commands:

The spreadsheet below outlines the IR commands that the CenterStage CS-HD product will accept and process. Note that some of these commands are not available on the CenterStage Remote.

CenterStage IR Remote Control Codes and Functions

CODE (hex)	ON STD. REMOTE?	FUNCTION	ACTION
80	YES	POWER TOGGLE	TOGGLE THE POWER MODE
81	YES	MOVE RIGHT	MOVE TO THE RIGHT
82	YES	SELECT	SELECT CURRENT FUNCTION
83	YES	MOVE LEFT	MOVE TO THE LEFT
84	NO	INPUT 4:3LB MODE	DIRECT 4:3LB SELECT MODE
85	YES	EXIT	EXIT MENU MODE
86	YES	MOVE DOWN	MOVE DOWN
87	YES	MENU	ENTER OR EXIT MENU MODE
88	YES	MOVE UP	MOVE UP
89	NO	INPUT 16:9LB MODE	DIRECT 16:9LB SELECT MODE
8A	YES	STD. VIDEO MODE	NORMAL VIDEO PROCESSING
8B	YES	FILM BIAS MODE	ENABLE FILM MODE BIAS
8C	NO	POWER ON	DIRECT POWER ON
8D	YES	LETTERBOX	TOGGLE LETTERBOX INPUT MODE
8E	YES	4:3 VIDEO MODE	ENTER 4:3 VIDEO INPUT MODE
8F	YES	16:9 VIDEO MODE	ENTER 16:9 VIDEO INPUT MODE
91	YES	SHARPNESS	ENTER SHARPNESS MENU
92	YES	CONTRAST	ENTER CONTRAST MENU
93	YES	BRIGHTNESS	ENTER BRIGHTNESS MENU
95	YES	YPrPb A	SELECT YPrPb A INPUT
96	YES	S-VID A	SELECT S-VID A INPUT
97	YES	COMPOSITE A	SELECT COMPOSITE A INPUT
98	NO	POWER OFF	DIRECT POWER OFF
99	YES	YPrPb B	SELECT YPrPb B INPUT
9A	YES	S-VID B	SELECT S-VID B INPUT
9B	YES	COMPOSITE B	SELECT COMPOSITE B INPUT
9C	NO	THIS BUTTON DOES NOT EXIST	
9D	YES	PASS-THRU	SELECT VGA PASS-THRU
9F	YES	PROGRESSIVE INPUT	SELECT PROGRESSIVE INPUT

CenterStage IR Remote Control Codes:

The CenterStage remote control is capable of outputting all the commands on the previous page that show a “YES” in the “ON STD. REMOTE” column. It does not have keys to output the commands labeled “NO”. Below, the exact remote control sequences and codes are documented for remotes that can be programmed with this information.

The remote control is based on the Holtek HT6221 multi-purpose encoder. For a complete data sheet, visit: http://www.holtek.com.tw/docum/consumer/6221_2.htm

This remote is based on a 38KHz carrier, and the bit codes are pulse width modulated to represent a “0” or a “1”.

- The 38KHz carrier consists of IR light for 8.77us with a total period of 26.3us.
- A “0” has the 38KHz carrier ON for 0.56ms with a total bit period of 1.12ms.
- A “1” has the 38KHz carrier ON for 0.56ms with a total bit period of 2.24ms.

A remote control based on the HT6221 Encoder outputs a KEY code sequence when a button is pushed, and a REPEAT code sequence starts when a button is held for more than 108ms.

The KEY codes of the HT6221 consist of a 9ms HEADER code, a 4.5ms OFF code, a 16 bit ADDRESS code, an 8 bit DATA code, and an inverse of the 8 bit DATA code. Data is transmitted in a LSB first format.

KEY = HEADER + OFF + (A0-A15) + (D0-D7) + (~D0~D7)

The sequence for a REPEAT code (a button is held for more that 108ms) is a HEADER code (9ms), a special 2.5ms OFF code, and a single “1” bit.

REPEAT = HEADER + OFF + “1” bit

A HEADER code consists of 38KHz carrier “ON” for 9ms.

An OFF code consists of the absence of 38KHz carrier for 4.5ms, or 2.5ms.

The CenterStage Remote has an ADDRESS code that is 7680h.

The CenterStage DATA codes range from 80h to BFh.

MAIN MENU ORGANIZATION

Picture Settings

Brightness: 0 [-50 to +50]

Contrast: 0 [-50 to +50]

Sharpness: 0 [-50 to +50]

Saturation: 0 [-50 to +50]

Hue: 0 [-50 to +50]

Output Selections

Resolution: [720p]

Output Aspect: [16:9, 4:3, 4:3 AL]

Output V Posn: 0[-50 to +50]

Output V Size: 0 [-50 to +50]

Output H Posn:0 [-50 to +50]

Output H Size:0 [-50 to +50]

Input Selections

Input Select: [YPrPb A, YprPb B, PROG. YprPb, VGA Pass, Composite A, Composite B, S-Video A, S-Video B]

Input Aspect: [4:3, 4:3 LB, 16:9 LB, 16:9]

Color Std [Normal, NTSC Japan, NTSC 4.43, Secam] (Normal = NTSC and PAL)

Auto Gain: [Off, On]

4:3 Zoom: [Off, On]

Input V Posn: 0 [-50 to +50]

Input V Size: 0 [-50 to +50]

Input H Posn: 0 [-50 to +50]

Input H Size: 0 [-50 to +50]

Miscellaneous

Deinterlacer [Auto, Film, PFDA off]

HDCP Out: [Auto, On]

TBC: [On, Off]

Calibration: [Confirm, Sure]

Split Screen: [Off, On]

Version 2.XX 830946

APPENDIX B

Input Aspect Ratio to Output Aspect Ratio Primer

WHAT INPUT ASPECT RATIO SETTINGS DO

(4:3 Mode) If you are playing a DVD, and the DVD player is in “Normal TV” mode, a circle will appear as a circle on a standard TV. In this case, you should have the Input Aspect Ratio set to 4:3. This preserves a circle as a circle, and does not stretch the image horizontally. You should use 4:3 input mode if the DVD player is in “Normal TV” mode, even if the movie is a wide screen movie.

(16:9 Mode) If you have the DVD player set to “Wide TV” mode or “Anamorphic mode”, a circle will appear as a tall oval on a standard TV. In this case, you should set the CenterStage to have the Input Aspect Ratio set to 16:9. This mode stretches the image horizontally, and changes the tall oval back into a circle on the display device!

(4:3LB Mode) If you have the CenterStage in 16:9 Output Mode with content that is standard 4:3 (black bars on the left and right when displayed on a standard TV), and you don't like the black bars on the left and right of the displayed image, then you should set the CenterStage Input Aspect Ratio to 4:3LB mode. This will expand the image vertically and horizontally to eliminate the black bars on the left and right, as well as expand the image and crop the top and bottom, filling the screen. This 4:3LB Input Mode only makes sense when you are in 16:9 Output Mode.

(16:9 LB Mode) If you have the CenterStage in 16:9 Output Mode with content such as a 2.35:1 DVD (black bars on the top and bottom even when displayed on a 16:9 display), and you don't like the black bars on the top and bottom of the displayed image, then you should set the CenterStage Input Aspect Ratio to 16:9LB mode. This will expand the image cropping the far right and left, and eliminating the black bars on the top and bottom, filling the screen.

WHAT OUTPUT ASPECT RATIO ACTUALLY DOES

Display devices today have either a 4:3 aspect ratio or a 16:9 aspect ratio. A typical LCD or DLP projector is made from a 4:3 display element, and will want to display a 4:3 image at its maximum resolution. CRT projectors can be adjusted to be either 4:3 or 16:9 output. There are also 16:9 native CRT direct view monitors and some rear view projection displays that are inherently 16:9 as well.

If you had a native 4:3 display device (let's say an XGA projector, 1024x768), you could project it on a 4:3 screen, and it would display its full resolution on that screen, (*See Example A*). If you took the same 4:3 display device and projected it on a 16:9 screen, you would lose a portion of the display resolution off the top and bottom of the screen (making this area black). You would only be viewing a portion of that XGA resolution (1024x576 to be exact). The remaining 192 lines (768-576=192 lines) would need to display black data so that you are not projecting an image on your wall above and below the screen, (*See Example B*). This portion of the original resolution of the display is lost! A wide screen movie would look great, but a 4:3 image would need to be centered in the 16:9 screen to look right. It will have lost a lot of its resolution, since now only a small central box of the original 1024x768 display resolution can be used to display the image. This box is now 768x576. See Example C.



Example A



Example B



Example C



Example D

If your display device is native 16:9, and you are projecting on a 16:9 screen, the CenterStage should be set for 16:9 output. A wide screen movie should fill the screen assuming that the movie is also 16:9 or 1.78:1. If the movie is wider, for example 2.35:1, you will see some black area on the top and bottom of the screen due to the image being wider and shorter than 16:9. If you are viewing a 4:3 image, you will see black bars on the right and left sides of the image, because a 4:3 image is not wide enough to fill the screen. See Example D.

NOTES

NOTES

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