CenterStage™

CS-1 and CS-2

Professional Video Processors

USER GUIDE

Version 2.0

FOCUS
enhancements

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, benzine, 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:
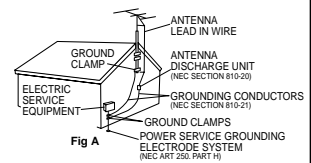• When the power-supply cord or plug is damaged.
• If liquid has been spilled, or objects have fallen into the product.
• If the product has been exposed to rain or water.
• If the product does not operate normally by following the operating instructions. Adjust only those controls that are covered by 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.

ANTENNA LEAD IN WIRE
ANTENNA DISCHARGE UNIT (NEC SECTION 810-20)
GROUND CLAMP
GROUNDING CONDUCTORS (NEC SECTION 810-21)
ELECTRIC SERVICE EQUIPMENT
GROUND CLAMPS
POWER SERVICE GROUNDING ELECTRODE SYSTEM (NEC ART 250. PART H)

Fig A

NEC — NATIONAL ELECTRICAL CODE

Table of Contents   PAGE

EMT **ELECTRO MAGNETIC TEST, INC.**
1547 Plymouth Street, Mountain View, CA 94043   Tel: (650) 965-4000 Fax: (650) 965-3000

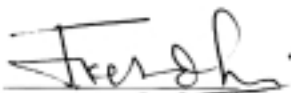## Statement of Compliance

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: CS1

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

Certificate Number: 15869

Kevin Bothmann
Lab Manager

Jay Gandhi
President

RP-1

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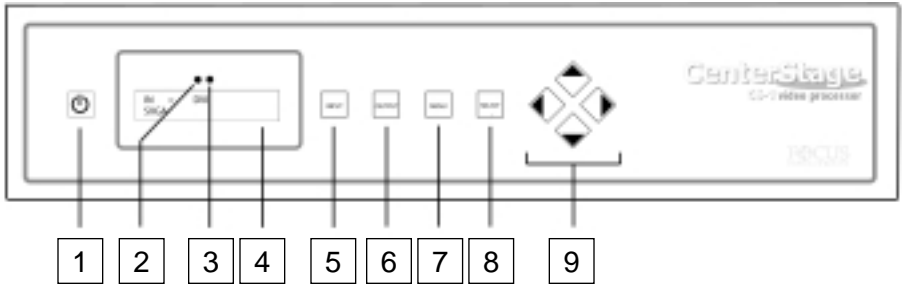
1. POWER
This button powers the CenterStage unit ON and OFF. The On/Off power switch on the rear panel of CenterStage must be in the ON position for the front panel power switch to work.

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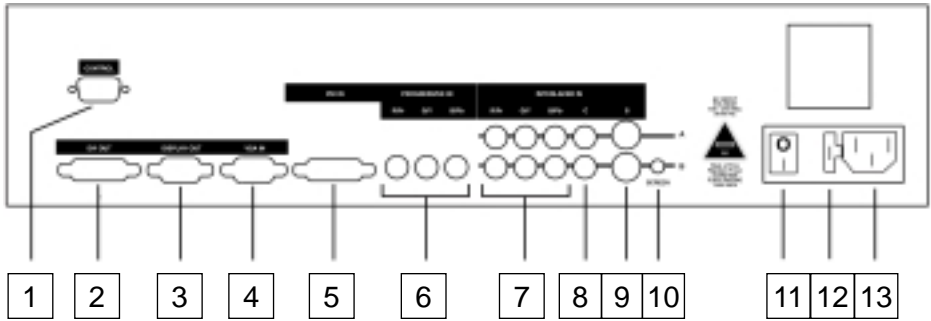
8. SELECT
This button is used for selecting various options within the CenterStage On Screen Display Menu. It is also used for executing a new INPUT or OUTPUT selection.

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

REAR PANEL

1. CONTROL
Standard 9-pin RS-232 port. For connection of external control equipment and CenterStage remote software (CSR).
See page 21 for more details.

2. DVI OUT
DVI (Digital Visual Interface) digital high resolution output.
See page 28 for more details.

3. DISPLAY OUT
HD-15F RGB or component high resolution output.

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

5. DVI IN
DVI (Digital Visual Interface) digital input.
See page 28 for more details.

6. PROGRESSIVE IN – R/Pr, G/Y, B/Pb
Progressive RGB or YPrPb input
(RCA on CS1, BNC on CS2).

7. INTERLACED IN – R/Pr, G/Y, B/Pb
Channel A & B
Interlaced RGB or YPrPb input
(RCA on CS1, BNC on CS2).

8. INTERLACED IN – C (COMPOSITE)
Channel A & B
Interlaced Composite input
(RCA on CS1, BNC on CS2).

9. INTERLACED IN – S (S-VIDEO)
Channel A & B
Interlaced S-Video input
(RCA on CS1, BNC on CS2).

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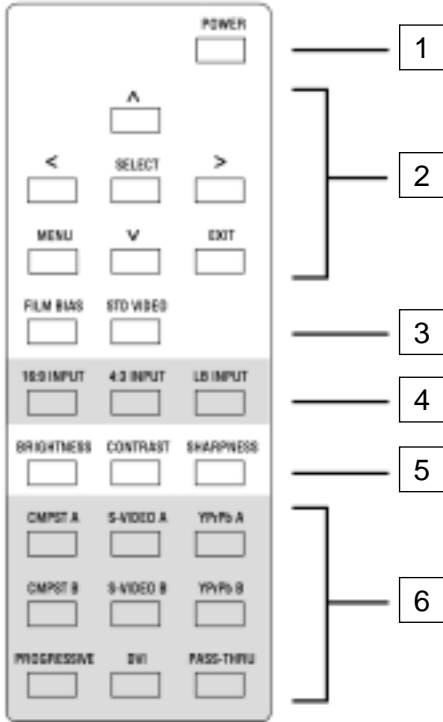Screen Trigger (12V, 3.5mm, 2-pin, Tip=+)

11. POWER SWITCH

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

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

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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 (RGB or Component), DVI 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.

TYPICAL CONFIGURATION
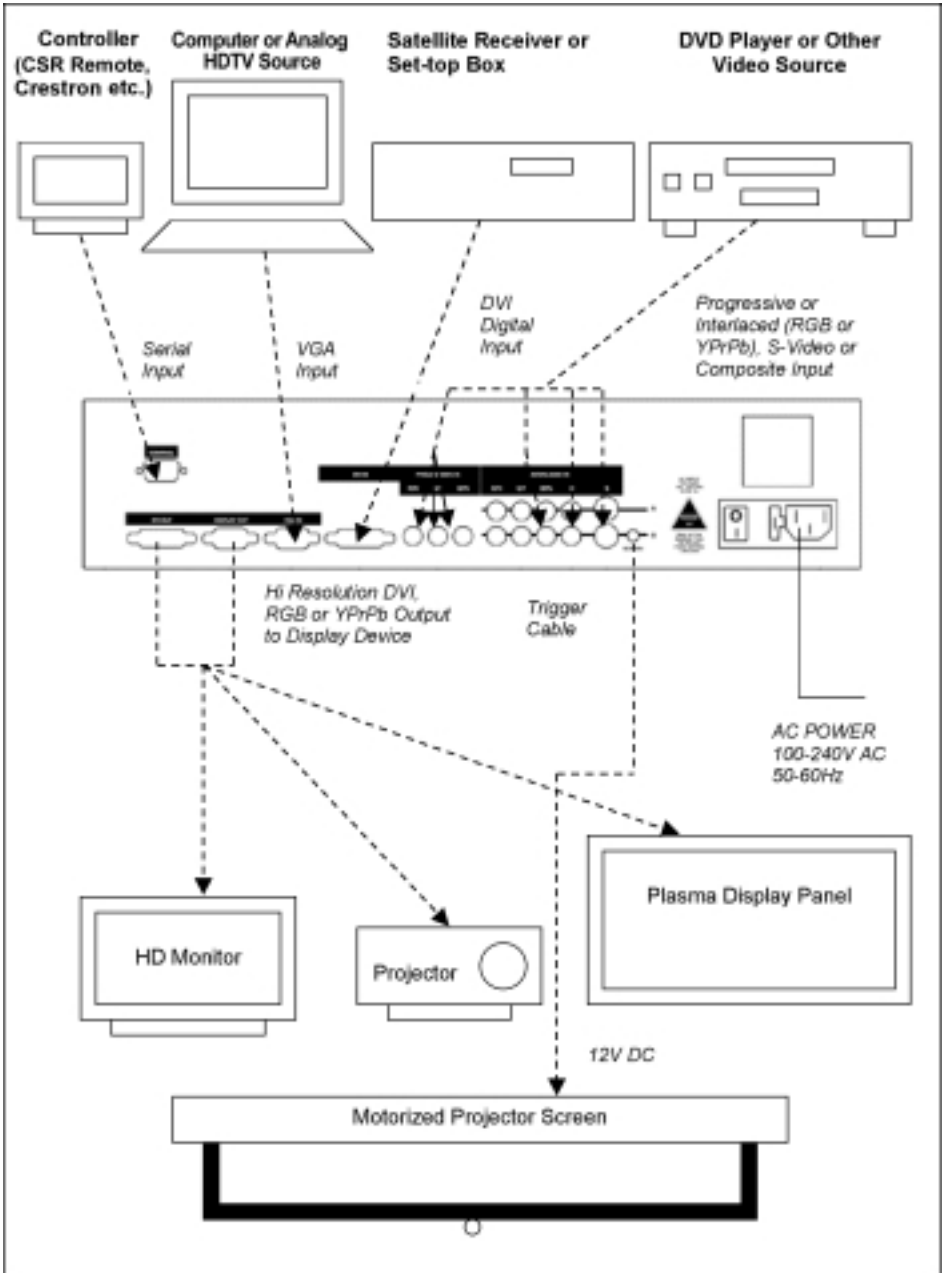
<u>SETTING UP CENTERSTAGE</u>

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-1

Input	Connector	Standard	Input Device Example
VGA	HD-15M	VESA or HDTV	Computer, HDTV Analog
DVI	DVI-D Male	DVI-D	Set Top Box*, DVD Player*, Computer
Progressive	3 x RCA	RGB or YPrPb	Progressive Output DVD Player
2 x Interlaced RGB/YPrPb	3 x RCA	RGB or 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

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CenterStage CS-2

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

* Your DVI input device may feature HDCP copy protection. The CenterStage CS-1 features optional HDCP compatibility while it is standard on CenterStage CS-2. For more information, see page 28 of this User Guide.

NOTE: The CenterStage CS-2 features a Time Base Corrector to accept VCR and other unstable input sources. If you wish to use these sources, ideally you will need a CS-2 model

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-1 and CS-2

| Output	Connector	Standard	Output Device Example
DISPLAY OUT	HD-15F	Analog RGB or YPrPb	Projector, HD Monitor, Plasma Display, Computer Monitor.
DVI OUT	DVI-I Female	DVI-I	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
852x480-60Hz
```
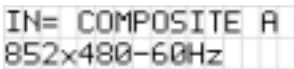
If no video source is connected to "Composite Channel A" on CenterStage, you will see the following LCD display:

```
IN= COMPOSITE A?
852x480-60Hz
```
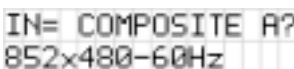
SELECTING AN INPUT SOURCE

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) [INPUT] button. By pressing this button, CenterStage will cycle through the available inputs. To execute a selection, press the (SELECT) [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-1 and CS-2 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
RGB A	RGB Channel A
RGB B	RGB Channel B
PROG. RGB	Progressive RGB
PROG. YPrPb	Progressive Component (Y,Pr,Pb)
DVI	Digital Video Interface
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. Locate the Native Resolution (also may be referred to as Number of Pixels, Resolution or Native Pixel Resolution).

Once you have located the Native Resolution, press CenterStage's (OUTPUT) [OUTPUT] button

to cycle through the available output resolutions. To execute a selection, press the

(SELECT) [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-1 and CS-2 are:

NOTE: You can customize, rename, add or delete resolutions using the CenterStage Remote Software (see page 24 for more information). The set listed below may not match that of your CenterStage unit. The list on the following page is the set supplied by the factory.

OUTPUT	OUTPUT TYPE	ASPECT RATIO	COLOR SPACE
852x480-60Hz	Plasma	16:9	RGB or Y,Pr,Pb
SVGA–60Hz	VESA	4:3	RGB or Y,Pr,Pb
SVGA-72(75)Hz	VESA	4:3	RGB or Y,Pr,Pb
XGA-60Hz	VESA	4:3	RGB or Y,Pr,Pb
XGA-72(75)Hz	VESA	4:3	RGB or Y,Pr,Pb
WXGA-60Hz	Plasma	16:9	RGB or Y,Pr,Pb
WXGA-72(75)Hz	Plasma	16:9	RGB or Y,Pr,Pb
1280x960-60Hz	Plasma	16:9	RGB or Y,Pr,Pb
1024x1024-60Hz	Plasma	16:9	RGB or Y,Pr,Pb
1024L-72(75)Hz	Plasma	16:9	RGB or Y,Pr,Pb
SXGA-60Hz	VESA	4:3	RGB or Y,Pr,Pb
SXGA-72(75)Hz	VESA	4:3	RGB or Y,Pr,Pb
D-ILA-60Hz	Projector/HDTV	4:3	RGB or Y,Pr,Pb
720p	Projector/HDTV/Plasma	16:9	Y,Pr,Pb
1080i	Projector/HDTV	16:9	Y,Pr,Pb
1080p	Projector/HDTV	16:9	Y,Pr,Pb

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) [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:

MAIN MENU

Picture Settings
Output Selections
Input Selections
Miscellaneous

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) [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.
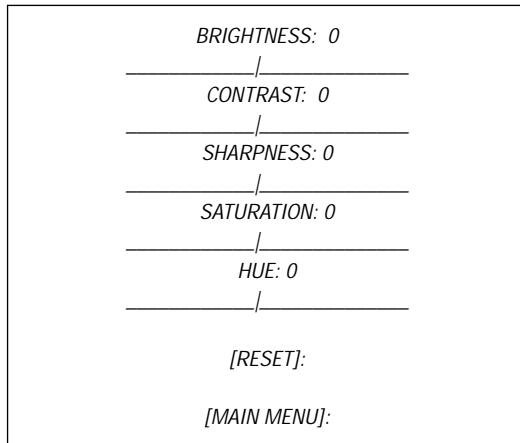**CONTRAST:** Values are adjustable between –50 and +50.
SHARPNESS: Value is adjustable between –50 and +50.
SATURATION: Also known as Color Saturation. Values are adjustable between –50 and +50.
HUE: Value is adjustable between –50 and +50.
RESET: Selecting this option will return all values in PICTURE SETTINGS to the factory default state (all values reset to 0).
MAIN MENU: Exits to the Main Menu.

```
BRIGHTNESS:  0
_____/_____
CONTRAST:  0
_____/_____
SHARPNESS: 0
_____/_____
SATURATION: 0
_____/_____
HUE: 0
_____/_____

[RESET]:

[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 FORMAT: Allows selection of either YPrPb (Component) or RGB output. See your display devices documentation for more information on which to choose.
REFRESH RATE: Displays the current refresh rate. If a 60Hz Output Resolution is selected, it is not possible to change this setting. It will display 60Hz. If you select a 72 /75Hz Output Resolution, it is possible to switch between 72 and 75 Hz.
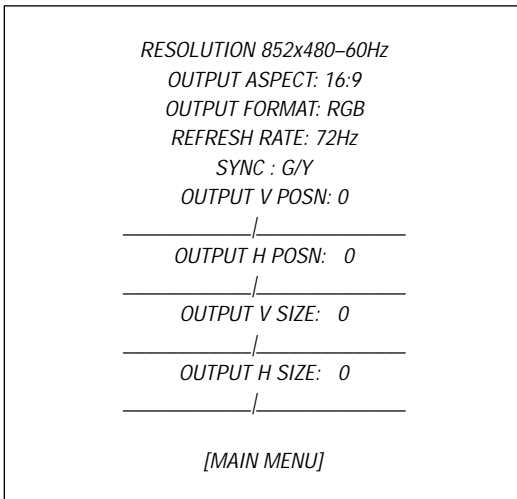**SYNC ON GREEN:** Allows Sync to be switched between G/Y and H/V.

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.

```
        RESOLUTION 852x480–60Hz
          OUTPUT ASPECT: 16:9
          OUTPUT FORMAT: RGB
           REFRESH RATE: 72Hz
              SYNC : G/Y
          OUTPUT V POSN: 0
        _____/_____
          OUTPUT H POSN:   0
        _____/_____
           OUTPUT V SIZE:   0
        _____/_____
           OUTPUT H SIZE:   0
        _____/_____

             [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.

```
INPUT SELECT: COMPOSITE A
INPUT ASPECT: 16:9
COLOR STANDARD: NTSC-JAPAN
AUTO GAIN: OFF
INPUT V POSN:     0
_____/_____
INPUT H POSN:     0
_____/_____


[MAIN MENU]
```

 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:
DSP MODE: Selects between FILM BIAS and STD VIDEO mode. In film bias mode, the processor is optimized for film based content on the input. If you are viewing a program that was originally

```
DSP MODE:              FILM BIAS
RS232 BAUD:            9600
CALIBRATION:          CONFIRM
SPLIT SCREEN:         OFF
FACTORY RESET:       CONFIRM
Version X. XX  Month – Day – Year

[MAIN MENU]
```

produced on film (such as a movie on DVD), select FILM BIAS. For all other sources (such as television programs, sports, live camera etc.), select STD VIDEO.
RS232 BAUD: Sets RS232 Baud Rate to either 9600 or 57600.
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.
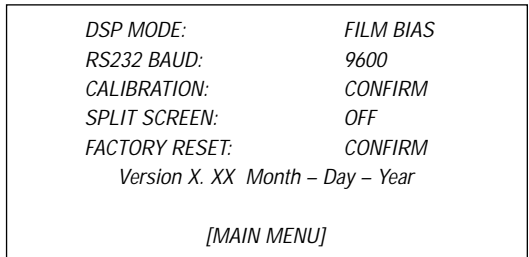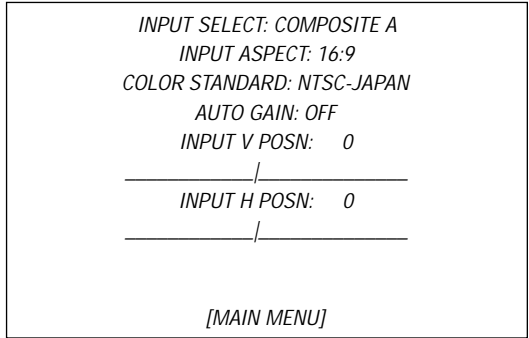
FACTORY RESET: Resets CenterStage to the factory default settings. When selected, you will be prompted with "SURE?". Pressing select will confirm your selection. THIS IS NOT REVERSIBLE! ALL VOLATILE SETTINGS WILL BE ERASED!
VERSION NUMBER: Displays the current system software version and its release date.
MAIN MENU: Exits to the Main Menu.

CONTROL & REMOTE

In addition to the controls that are available on the CenterStage front panel and supplied remote control unit, it is also possible to use an external controller such as a Crestron or AMX/Panja unit. It is also possible to control CenterStage from a computer using the CenterStage Remote (CSR) software.

Controlling CenterStage from an External Device

The RS-232 port is located on the CenterStage rear panel. It uses a standard DB-9 Female connector. From this port it is possible to connect an external controller such as a Crestron, AMX/Panja or other home automation systems. Consult the FOCUS Enhancements website as well as the control system manufacturer's website for more information on current compatibility. It is necessary to use a standard DB-9 cable in order to connect CenterStage to your controller device.

For more detailed information on using the RS-232 port for control, see Appendix A of this User's Guide.

Updating System Software

WARNING: UPGRADING SYSTEM SOFTWARE WILL ERASE ALL RESOLUTIONS AND SETTINGS IN CENTERSTAGE. CREATE A BACKUP IF REQUIRED BEFORE PROCEEDING. *(See "Global Setting" on page on page 26.)*

NOTE: Your CenterStage unit was shipped from the factory with the latest version of software at the time of manufacture. Check the FOCUS Enhancements website regularly for available updates.

It is possible to update the CenterStage system software using the CSR Remote application. In order to update the system software, you must have a computer with Windows 95/98/Me/NT/2000 and an available serial port. You must also have a standard serial cable (DB-9M to DB-9F).

To identify which version of software you currently have on CenterStage, turn on the CenterStage OSD and select the Miscellaneous Menu (you will need to be connected to an appropriate display device). Version Number is displayed at the bottom of the Miscellaneous Menu. The latest version of software is available for download from:

http://www. focusinfo. com/products/centerstage/centerstage. htm

You will also need the CenterStage Remote (CSR) application loaded onto a computer to update your system software. It is also available from the CenterStage website above.

If you have not done so already, install the CSR application on you computer. It can be downloaded from:

http://www. focusinfo. com/products/centerstage/centerstage. htm

To install, simply unzip the downloaded file, locate "setup.exe" and click on it to begin the install procedure. Follow the on screen instructions to load the application.

Once installed, do the following:
1. Power up CenterStage and your computer. Using the serial cable, connect the CenterStage "Control" port on the rear panel to the computer's serial port. Verify the serial port is operating correctly and make note which COM port you are using and its Baud Rate.
2. The CenterStage unit must be in programming mode. To do this from the front panel, press and hold OUTPUT and MENU at the same time. Then press and release INPUT. Then release OUTPUT and MENU. The CenterStage front panel lights will go out.

Now launch the CSR Application by selecting Start -> Programs -> CenterStage Remote. The following screen will appear.
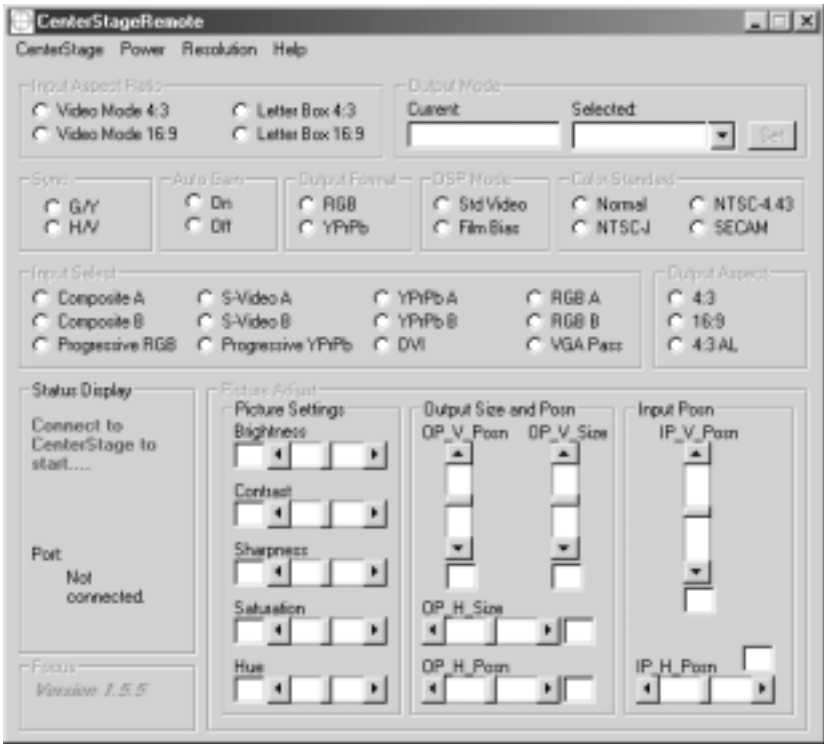
CenterStage

To start the CenterStage software update, select CenterStage -> Download Software from the pull-down menu. You will need to select either COM 1 or COM 2. You will also need to know

the baud rate your computer's serial port is set to. With CenterStage, you can select either 9600 or 57600. Consult your computer's documentation for more information.

You will be warned to ensure that you have CenterStage in Programming Mode. Press YES to continue.

WARNING: UPGRADING SYSTEM SOFTWARE WILL ERASE ALL RESOLUTIONS AND SETTINGS IN CENTERSTAGE. CREATE A BACKUP IF REQUIRED BEFORE PROCEEDING
(See "Global Setting" on page 26 to backup.)

When prompted, select the downloaded .hex file to be loaded into CenterStage. By pressing OK when prompted, the software update will begin.

If you select an incorrect COM port or you have a bad connection, you will see "Setting Baud rate…" in the STATUS DISPLAY section of the CSR application. If the message does not disappear after a few seconds, you will need to Exit the CenterStage Application and try again (try using the other COM port, try a different Baud Rate and/or trouble shoot your connection). If you have made a successful connection, you will see the following messages (one followed by the other) in the STATUS DISPLAY section of the CSR application:

When the download is complete, the STATUS DISPLAY will say "Software copied successfully". When complete, press and release INPUT and OUTPUT. You must now power cycle your CenterStage unit to use.

## Controlling CenterStage Using the CenterStage Remote Software

It is possible to control CenterStage using the Center Stage Remote software. This is available for free download from the FOCUS Enhancements Support website at:

http://www. focusinfo. com/products/centerstage/centerstage. htm

For installation information, see the previous section titled "Updating System Software".

CenterStage Remote (CSR) software runs on Windows 95, 98, NT, ME or 2000 computer systems with an RS-232 port and requires a standard serial cable for connection. CSR software is a two-way communication application that means it is possible to make changes to CenterStage as well as monitor status on the connected unit.

Once installed and you have connected CenterStage to your computer and powered the unit on, launch the CenterStage Remote Application by selecting Start -> Programs -> CenterStage Remote. The following screen will appear:
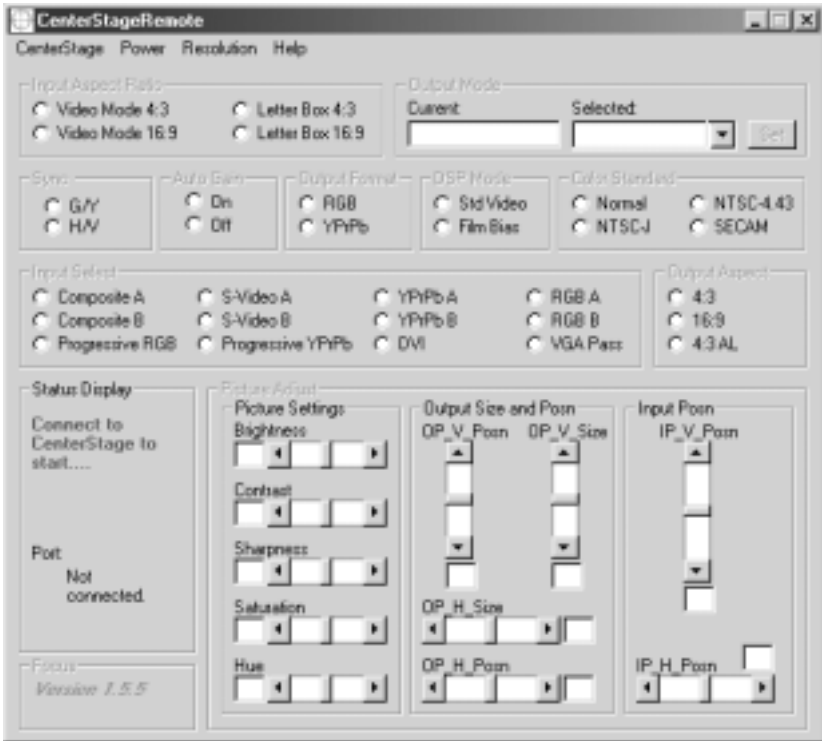

You will need to know which COM port you have connected the serial cable from CenterStage to your computer and its Baud Rate. This will be either COM 1 or COM 2. Consult your computer settings or documentation if you are unsure.
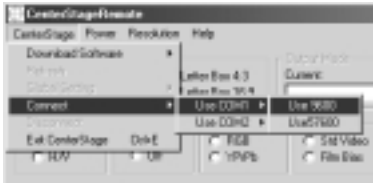
Under STATUS DISPLAY on the CenterStage Remote window, you will see "Port: Not Connected". To connect, Go to the CENTERSTAGE pull down menu and select CenterStage -> Connect -> Use COM1 or Use COM2. Select the appropriate COM port. You will also need to know the baud rate your computer's serial port is set to. With CenterStage, you can select either 9600 or 57600. Consult your computer's documentation for more information.
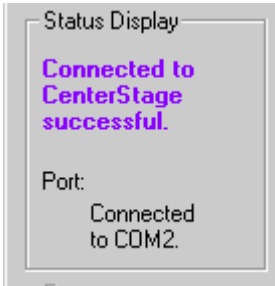
If you do not connect after a few seconds, quit the CenterStage Remote Application and restart it. Try a different COM port, a different Baud Rate and/or check your cable and connections. Once connected, you will see the following window:

Once connected it is possible to change the following:

INPUT ASPECT RATIO: Select between Video Mode 4:3, Video Mode 16:9, Letterbox 4:3 and Letterbox 16:9 input aspect ratios. These settings are unique for each individual input.

OUTPUT MODE: Displays the current output resolution. Allows selection of any of the available outputs. Changing the Output Mode will change the output on CenterStage and display its settings on CSR.

SYNC: Allows sync to be switched between G/Y and H/V.

AUTO GAIN: Selects Auto Gain ON or OFF. Use Auto Gain when viewing material off-air, through a cable box or satellite receiver.

OUTPUT FORMAT: Selects either RGB or YPrPb as the output format.

DSP MODE: Selects either Standard Video or Film Bias. Use Film Bias on programs that originated on film

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

INPUT SELECT: Allows for selection of the available inputs on CenterStage. Selection of a particular input source will make that source the current input. Each input source also has customizable settings.

OUTPUT ASPECT: Selects the output aspect ratio to either 4:3, 16:9 or 4:3 AL (anamorphic lens).

PICTURE ADJUST: Allows adjustment of Input Brightness, Contrast, Sharpness, Saturation, Hue, Output Size and Position (horizontal and vertical) and Input Position (horizontal and vertical). It is possible to make custom settings for each individual input.

The CenterStage Remote Software also features the following Pulldown Menus:
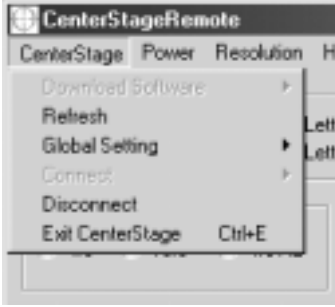
DOWNLOAD SOFTWARE: Allows for downloading of the latest CenterStage Software. See previous section.

REFRESH: Refreshes and updates the CenterStage Remote Software Window Display.

GLOBAL SETTING: Allows you to save a global setting of your CenterStage on your computer. Global Setting takes a "Snapshot" of your system for later recall. Select SAVE to save your settings and LOAD to restore a previous setting. This is of particular use when upgrading system software.

CONNECT: Enables connection between CenterStage and a computer system. It is possible to select either COM port 1 or 2, and 9600 or 57600 Baud Rates on the computer.

DISCONNECT: Disconnects CenterStage from the current session with a computer.

EXIT CENTERSTAGE: Exits from the CenterStage Remote Software. Exiting will immediately disconnect CenterStage from any connected computer system.
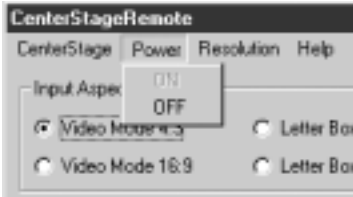
The Power Menu allows the CenterStage Unit to be turned ON or OFF remotely.
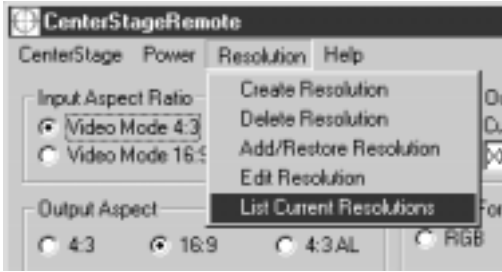
The Resolution Menu features the following functions:

CREATE RESOLUTION: Allows you to create custom resolutions. WARNING: CUSTOM RESOLUTIONS ARE NOT SUPPORTED BY THE FOCUS' ENHANCEMENTS TECHNICAL SUPPORT GROUP. IT IS ADVISED THAT YOU HAVE A SOUND TECHNICAL KNOWLEDGE BEFORE ATTEMPTING TO CREATE YOUR OWN RESOLUTIONS. In this window, it is possible to set:

1. **HORIZ TOTAL** – Number of horizontal pixels (including active front porch, back porch and sync width).
2. **VERTICAL TOTAL** – Number of vertical lines (including active front porch, back porch and sync width).
3. **HORIZ ACTIVE** – Number of active horizontal pixels.
4. **VERTICAL ACTIVE** – Number of active vertical lines.
5. **H SYNC WIDTH** – How wide the horizontal sync width is (in pixels).
6. **V SYNC WIDTH** – How wide the vertical sync width is (in lines).
7. **H BACK PORCH** – How wide the back porch is (in pixels).
8. **V BACK PORCH** – How wide the back porch is (in lines).
9. **VERSION** – This allows the user to allocate a version number to their particular resolution. The version number must be something other than 0.
10. **REFRESH X 10** – The output resolution refresh rate. For example, for 60 Hz, type in 600.
11. **RGB/YPrPb** – Selects either RGB or YPrPb as the output resolution standard. For resolutions based on either 720p, 1080i or 1080p, this setting will set to YPrPb only. It is not changeable.
12. **SYNC POL** – The sync polarity setting for the output resolution. Choose between:
    • Horizontal sync Positive / Vertical sync Positive
    • Horizontal sync Positive / Vertical sync Negative
    • Horizontal sync Negative / Vertical sync Positive
    • Horizontal sync Negative / Vertical sync Negative
13. **SAVE AS [START WITH "_"]** – Allows you to save the resolution with a custom name. Any created resolutions MUST start with an underscore (_). This will identify it as a custom resolution. Non-underscored resolutions are factory resolutions. NOTE: CUSTOM RESOLUTIONS ARE NOT SUPPORTED BY THE FOCUS ENHANCEMENTS' TECHNICAL SUPPORT GROUP.
14. **CALCULATE DOT CLOCK** – Calculates the dot clock for the particular output resolution. The maximum allowable dot clock frequency is 135MHz. You will not be able to create a resolution with a higher value.

15. **CREATE** – Pressing this button will create the new resolution and add it to the available list on your CenterStage unit. Before saving, you will be prompted to save a backup copy of the resolution. This allows you to save a copy on your computer system for later loading or recall. (use ". res" as the file extension).

DELETE RESOLUTION: Allows for deleting of any current resolution. WARNING: DELETING A RESOLUTION IS UNDOABLE! It is not possible to delete a factory resolution.

ADD/RESTORE RESOLUTION: Allows for adding of any resolution you may have saved on you computer system.

EDIT RESOLUTION: Allows you to edit the timing and name of an existing resolution.

LIST CURRENT RESOLUTIONS: Displays the list of resolutions currently on CenterStage.

ABOUT DVI & HDCP

CenterStage CS-1 and CS-2 Video Processors support the most common flavor of digital source and display standards, DVI. With DVI, or the Digital Visual Interface, video remains digital from the graphic source (PC, DVD, HTPC, etc.), through the CenterStage, and to the display (television, monitor, projector, plasma, etc.). The CenterStage DVI input will accept the following input resolutions:

640x480 60Hz	1024x768 60Hz
720x576 60Hz	1280x960 60Hz
800x600 60Hz	1280x1024 60Hz

High-bandwidth Digital Content Protection (HDCP) is a content protection scheme used with DVI to prevent unauthorized copying and redistribution of digitally perfect content. Original content via computer display cards or game consoles, and video from standard definition DVD players will not likely be content protected. High-definition set-top boxes are expected to be HDCP enabled to protect high-definition movies and pay-per-view programming. DVI with HDCP is standard on CenterStage CS-2, and optional on CenterStage CS-1, so both are fully compatible with any HDTV installation.

When using an HDCP encrypted DVI input source, analog output is disabled.

For more information on upgrading your CenterStage CS-1 to enable HDCP, contact FOCUS Enhancements' Technical Support (for more information, see page 7 of this manual.)

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
Horiz. Range (DVI):	31. 5kHz to 63. 9kHz (input resolution dependent)
Vert. Range (DVI):	60Hz
Color Standards:	NTSC, NTSC-J, PAL (50), NTSC 4. 43 (PAL 60), SECAM
Connectors:	(2x) Composite – RCA or BNC (CS-2)
	(2x) S-Video (Y/C) – 4 pin mini DIN
	(2x) Component (YPrPb or RGB) – RCA or BNC (CS-2)
	Progressive (YPrPb) – RCA or BNC (CS-2)
	Digital (DVI-D) receptacle
	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 only, standard feature on CS2)
Warranty:	Two years
Weight & Size:	CS-1 Tabletop w/ feet
	17" x 9" x 4", 9. 5 lbs
	430mm x 229mm x 102mm, 4. 3kg
	CS-2 Rackmount
	19" x 9" x 4", 9. 5 lbs.
	483mm x 229mm x 102mm, 4. 3kg.

OUTPUT

Frame Rate:	Computer/VESA 60, 72 and 75Hz
Connectors:	Digital DVI-D receptacle
	HD-15 female (VGA)
Aspect Ratios:	4:3, 16:9 and Anamorphic Lens Support

APPENDIX A

RS-232 pin configuration
CenterStage requires a standard AT style cable for connection to the RS-232 port. The pin configuration of the port is as follows:

RX Data   Pin 3
TX Data   Pin 2
GND   Pin 5

No handshaking provided or required.

RS-232 Control Protocol
NOTE: This section is intended for those with a strong technical knowledge. This information is not needed for day to day understanding of CenterStage operation. If you have any questions about control, consult your dealer or distributor or contact Focus Enhancements, Inc. directly.

It is possible for CenterStage to be controlled by RS-232 control codes for compatibility with several Home Theater control systems. The interface should be able to control almost all aspects of the unit. The structure provides for setting features of the unit, as well as interrogating the box for it's current settings.

Protocol:
The protocol has the following 6 byte command structure for the interface.
Attention Byte: 0xEE
Number of Bytes to follow: 0x04
Command Byte: 0x00 through 0xDF
Data Byte 0:   MS hex digit, 0-9, A-F, ASCII Value
Data Byte 1:   LS hex digit, 0-9, A-F, ASCII Value
Checksum Byte   The 7 bit sum of the preceding 5 bytes.

The Attention Byte is a unique code.
The Number of Bytes to follow includes the Command Byte, Data Bytes and Checksum Byte.
The Command Byte would range from 0x00-0xDF, so that they never overlap the Attention Byte range.
The Data Bytes express an eight bit value from 0 through 255 if viewed as an unsigned number, or -128 through 127 if it specifies a relative adjustment or a signed number. Each Data Byte is the ACSII representation of the hex digit.
The Checksum Byte would be the sum of the five preceding bytes, with the MSB set to "0"

Command Bytes:
Command Bytes are documented in the spreadsheet RS-232Control Codes. XLS, and at the end of this document.

There are specific Command Bytes for Writing to the CenterStage registers, and a different set of Command Bytes for interrogating (Reading) the CenterStage for it's current settings.

Read Commands:
When a READ Command is written to CenterStage, the Protocol above is followed, with the Data Bytes being set to "0". The CenterStage will respond with the same 6 byte command structure, but the Data Bytes will be filled in with the current setting. The client must wait for either a valid response or an error response (NAK) before proceeding with additional communications.

Absolute Write Commands:
When an Absolute Write Command is written to CenterStage and the command is recognized as valid, the Data Bytes will be used to change the setting of the selected function. The client MUST wait for either an ACK or NAK before proceeding with additional communications.

FOCUS enhancements

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:

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FOCUS Enhancements, Inc.

1370 Dell Ave. Campbell, CA. 95008 USA

Telephone: 408 866-8300   Fax:408 866-4859   www.FOCUSinfo.com