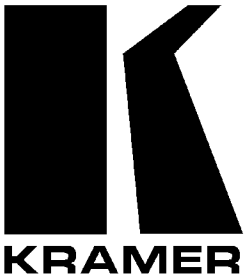
Kramer Electronics, Ltd.



USER MANUAL

Model:

VP-725DSA

Presentation Switcher / Scaler

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1 Introduction

Welcome to Kramer Electronics (since 1981): a world of unique, creative and affordable solutions to the infinite range of problems that confront the video, audio and presentation professional on a daily basis. In recent years, we have redesigned and upgraded most of our line, making the best even better! Our 300-plus different models now appear in 8 Groups[1], which are clearly defined by function.

Congratulations on purchasing your Kramer **VP-725DSA** *Presentation Switcher / Scaler*, which is ideal for the following typical applications:

- Projection systems (with full audio capability) in conference rooms, board rooms, auditoriums, hotels, and churches
- Any application in which high quality conversion and switching of multiple and different video signals to graphical data is required for projection and large display purposes (with full audio capability)

The package includes these items:

- **VP-725DSA** *Presentation Switcher / Scaler*
- Power cord[2]
- Infra-red remote control transmitter (including the required battery)
- Null-modem adapter
- This user manual[3]

2 Getting Started

We recommend that you:

- Unpack the equipment carefully and save the original box and packaging materials for possible future shipment
- Review the contents of this user manual
- Use Kramer high performance high resolution cables[4]

1 GROUP 1: Distribution Amplifiers; GROUP 2: Video and Audio Switchers, Matrix Switchers and Controllers; GROUP 3: Video, Audio, VGA/XGA Processors; GROUP 4: Interfaces and Sync Processors; GROUP 5: Twisted Pair Interfaces; GROUP 6: Accessories and Rack Adapters; GROUP 7: Scan Converters and Scalers; and GROUP 8: Cables and Connectors

2 We recommend that you use only the power cord that is supplied with the machine

3 Download up-to-date Kramer user manuals from the Internet at this URL: http://www.kramerelectronics.com/manuals.html

4 The complete list of Kramer cables is on our Web site at http://www.kramerelectronics.com (click "Cables and Connectors" in the Products section)

3 Overview

The **VP-725DSA** *Presentation Switcher / Scaler* is designed for a wide variety of presentation and multimedia applications. It is a true multi-standard video to graphics scaler and presentation switcher for a wide variety of presentation and multimedia applications. It consists of a very high quality scaler with many user-selectable pixel-rates including VGA (640x480), SVGA (800x600), XGA (1024x768), SXGA (1280x1024) and UXGA (1600x1200); high definition television HDTV (480p, 720p and 1080i); and several optimum plasma and LCD rates such as 852x1024i, 1024x1024i, 1366x768, 1365x1024, 1280x720, 720x483, 852x480, 1400x1050, 576P, 720x400, 832x624, 1024x800, 1152x864, 1152x870, 1152x900, 1280x960, 1280x768, 1024x576, as well as a user definable output mode[1].

In particular, the **VP-725DSA**:

- Offers high quality de-interlacing 3:2/2:2 pull down[2]
- Supports firmware upgrade via RS-232
- Includes non-volatile memory that retains the last setting, after switching the power off and then on again
- Scales and zooms (to up to 400% of the original size)
- Digitally reprocesses the signal to correct mastering errors, and regenerates the video at a chosen line and pixel rate format, providing, for example, native-resolution video for LCD, DLP and Plasma displays
- Facilitates scaling of graphics resolutions to other resolutions
- Incorporates a unique graphics-scaling engine with image enhancement algorithms, which are built into the firmware
- Is specifically designed to improve video quality by reducing chroma noise
- Includes an OSD (on-screen display) for making the adjustments that can be located anywhere on the screen, and can be doubled in size. The OSD can be used to deactivate the source prompt, choose the color of the blank screen, and choose from three seamless switching transition speeds
- Consists of 5 video groups—composite video, s-Video, component video (RGB or YPbPr), DVI-D and VGA—and each group has 4 inputs (except for DVI which has 2 inputs). Each video input has its own corresponding balanced stereo audio input on a terminal block connector

1 Recommended for advanced users only – non-standard settings may not be recognized by the display device

2 Accommodates the frame-rate of a converted movie (24 frames per second) to video frequencies (25 frames per second (PAL); 30 frames per second (NTSC)

- Has multi-standard video support; supports VESA standards; HDTV standards and other popular resolutions on the input. Does not support[1] HDCP (High bandwidth Digital Content Protection) on the DVI[2]
- Features a Video Group Mode[3] and a Scaler Mode[4]. These modes function simultaneously and independently (except for DVI: once a DVI input is selected in the Scaler Mode, that DVI input selection cannot be changed in the Video Group Mode)
- Features an Audio Group Mode[5] and a Master Audio Group Mode[6], with a balanced stereo audio output on a terminal block connector for each group. In addition, in the AV Group you can select the audio-follow-video input from each group for switching, and in the Master AV Group you can convert the selected video input (one of 18) to the SCALED OUTPUTS, and also route the selected audio input (one of 18) to the MASTER OUT terminal block connector
- An independent Master Audio output that has a rich set of ProcAmp features, including bass and treble controls (via the MENU and LCD status display (and OSD when appropriate)), RS-232 and the infra-red remote control transmitter
- Audio breakaway option (to switch audio independently from video) or Audio-follow-video
- Adjustable volume on each input and output
- A microphone input that can be used by mixing, switching or talk-over
- Includes a front panel lock, as well as a separate OSD lock
- In addition to providing an up- or down- scaled output of the selected (one of 18) inputs, also functions as 4x1 switchers for each video group (2x1 for DVI)
- Has ProcAmp[7] controls for the scaler output
- Lets you freeze the image at any instant
- Lets you select the output colorspace (RGB or YPbPr)
- Has a text overlay feature[8] for easy insertion of subtitles, karaoke script, text banners, and the like

1 A method of security encryption (developed by Intel and Silicon Image)

2 An HDCP source would show up as a very snowy, noisy picture at the output

3 Selects the video input from each group: CV, YC, Component, VGA, DVI for switching to its local (group) output

4 Converts the selected input (one of 18) to the SCALED OUTPUTS

5 Selects the audio input from each group for switching

6 Routes the selected audio input (one of 18) to the MASTER OUT terminal block connector

7 Processing amplification enables adjustment of different video and audio signal parameters

8 The Text Overlay Application Program is included on the CD / is available for download at this URL: http://www.kramerelectronics.com/searchdx.html. This user-friendly program may be used to generate and send text to be displayed on the scaled output

- Includes a built-in Picture-In-Picture (PIP) inserter[1] (letting you insert a video source into a graphics background or vice versa. This PIP image may be positioned and sized anywhere on the screen, or displayed as 2 images side-by-side (Split-Screen)

The **VP-725DSA**:

- Comes in a rugged, professional 19" 3U rack-mountable metal enclosure
- Uses a universal 100-240VAC automatic power supply

Control the **VP-725DSA**:

- From the front panel user-friendly menu-driven OSD (see section 8.1)
- From the front panel high contrast LCD Display (see section 8.3)
- Remotely, from the infra-red remote control transmitter (see section 8.4)
- Via Ethernet (see section 8.5)
- Remotely, via RS-232

Achieving the best performance means:

- Connecting only good quality connection cables, thus avoiding interference, deterioration in signal quality due to poor matching, and elevated noise levels (often associated with low quality cables)
- Avoiding interference from neighboring electrical appliances, making sure not to block the ventilation holes, and positioning your **VP-725DSA** away from moisture, excessive sunlight and dust

4 Your VP-725DSA Presentation Switcher / Scaler

Figure 1 and Table 1 define the front panel of the **VP-725DSA**:

1 See section 6.1

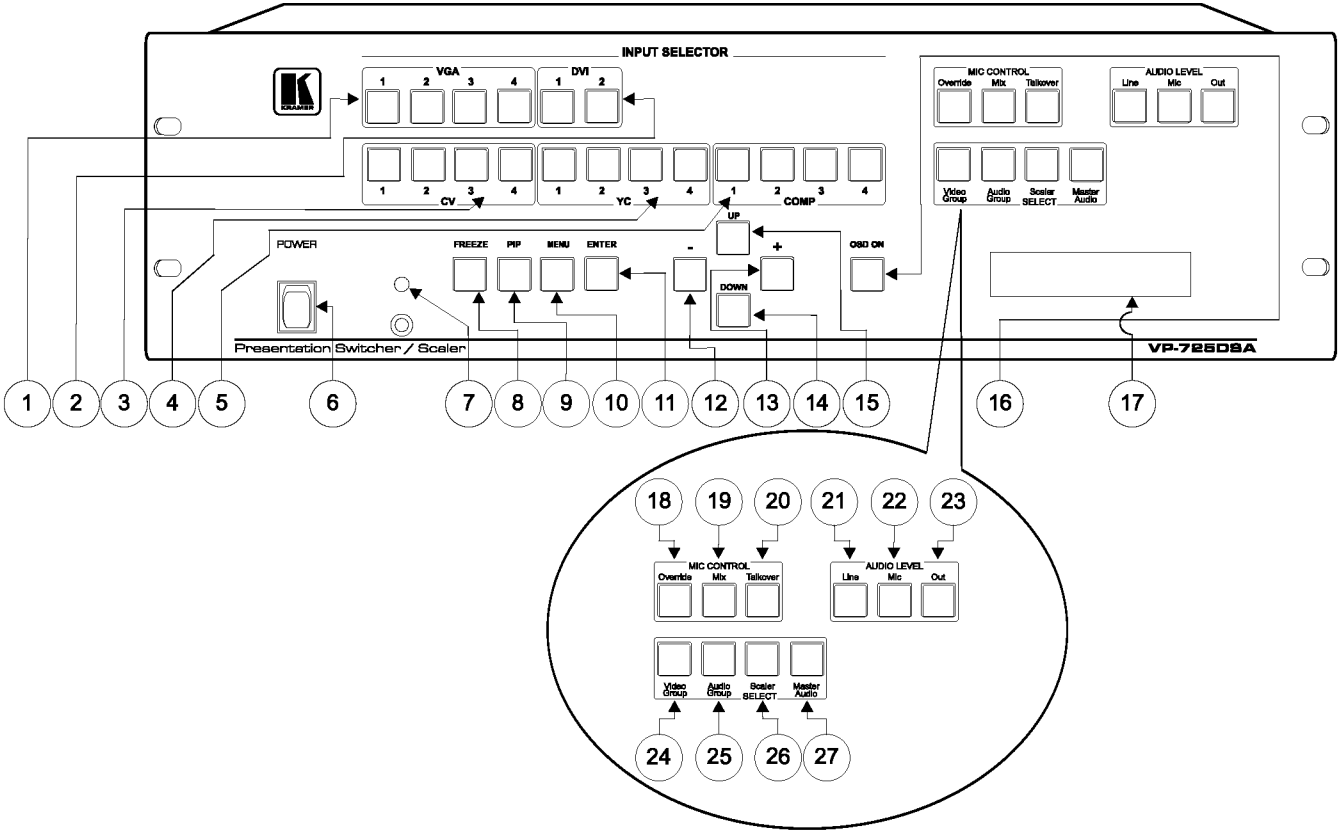


Figure 1: VP-725DSA Presentation Switcher / Scaler Front Panel

Table 1: Front Panel VP-725DSA Presentation Switcher / Scaler Features

#	Feature		Function
1	INPUT SELECTOR	VGA Button	Selects one of the 4 VGA sources
2		DVI Button	Selects one of the 2 DVI sources[1]
3		CV Button	Selects one of the 4 CV sources
4		YC Button	Selects one of the 4 s-Video (Y/C) sources
5		COMP Button	Selects one of the 4 Component sources
6	*POWER* Switch		Illuminated switch for turning the unit ON or OFF
7	IR Receiver / LED		Green when the unit will accept IR remote commands; red in standby mode[2]
8	FREEZE Button		Freezes the output video image[3]
9	*PIP* Button		Selects the picture-in-picture function[3,4]
10	*MENU* Button		Displays the OSD Menu screen (or moves to the previous level in the OSD screen) and locks/unlocks the front panel[3,5]
11	*ENTER* Button		Moves to the next level in the OSD screen[3]
12	- Button		Decreases the range by one step[3]
13	+ Button		Increases the range by one step[3]
14	*DOWN* Button		Moves down one step (in the same level) in the OSD screen[3]
15	*UP* Button		Moves up one step (in the same level) in the OSD screen[3]
16	*OSD ON* Button		Activates/deactivates access to the OSD Menu[3, 6]
17	LCD STATUS Display		Displays the status
18	*MIC CONTROL*[7] Button	Override[8]	Routes the signal from the microphone to the Master output instead of from the Line, whose signal is blocked
19		Mix[8]	Routes the combined signals from the mic and the Line to the Master output
20		Talkover[8]	Routes the selected input to the output until an audio signal is detected on the microphone input. When this happens the selected input is faded out (to be faded back in when no input is detected on the microphone)

1 Note, that once a DVI input is selected in the Scaler Mode, that DVI input selection cannot be changed in the Video Group Mode

2 After pressing the POWER key on the remote control transmitter (see Figure 53). The machine is temporarily powered down except that the power switch (item 6) on the machine continues to illuminate

3 Scaler outputs only

4 See section 6.4

5 See section 6.5

6 The OSD ON front panel button is activated (illuminated) by default, and pressing the MENU front panel button (or the MENU key on the infra-red remote control transmitter (see Figure 53)) displays the OSD Menu. To block display of the OSD Menu, press the OSD ON front panel button (or the OSD key) to deselect the OSD ON front panel button (which is no longer illuminated); the OSD OFF status appears superimposed over the top right corner of the screen. However, deselecting the OSD ON front panel button during an OSD operation will not turn off the OSD Menu (even though the OSD OFF status appears superimposed over the top right corner of the screen), letting you complete the OSD operation

7 Only one of the three buttons can be ON, or all three buttons can be OFF (pressing a button will select that button, and turn OFF the previously selected button. If the selected button is pressed, it will turn it OFF)

8 When no MIC CONTROL button is selected, the audio input is routed to the MASTER output, ignoring the mic input

#	Feature		Function
21	AUDIO LEVEL[1] Button	Line	Press this button and adjust using the –/+ buttons. The level is displayed in the LCD Display and OSD
22		Mic	
23		Out[2]	
24	SELECT[1] Buttons	Video Group	Shows which video input from each group is selected for switching, and facilitates the selection of an alternative video input from each group[3]
25		Audio Group	Selects the audio (breakaway mode) input from each group for switching
26		Scaler	When selected shows which of the 18 video inputs has been selected to be scaled at the SCALED OUTPUTS, and facilitates the selection of an alternative video input for scaling
27		Master Audio	When selected routes the selected audio input (one of 18) to the MASTER OUT terminal block connector

Figure 2 and Table 2 define the rear panel of the **VP-725DSA**:

1 Only one of the three buttons can be ON, or all three buttons can be OFF (pressing a button will select that button, and turn OFF the previously selected button. If the selected button is pressed, it will turn it OFF)

2 Selecting OUT when the Audio Group button illuminates, lets you select the group (scrolling through CV, YC, VGA, Component and DVI, displaying the selection on the LCD (and OSD when appropriate) using the UP and DOWN buttons

3 Note, that once a DVI input is selected in the Scaler Mode, that DVI input selection cannot be changed in the Video Group Mode

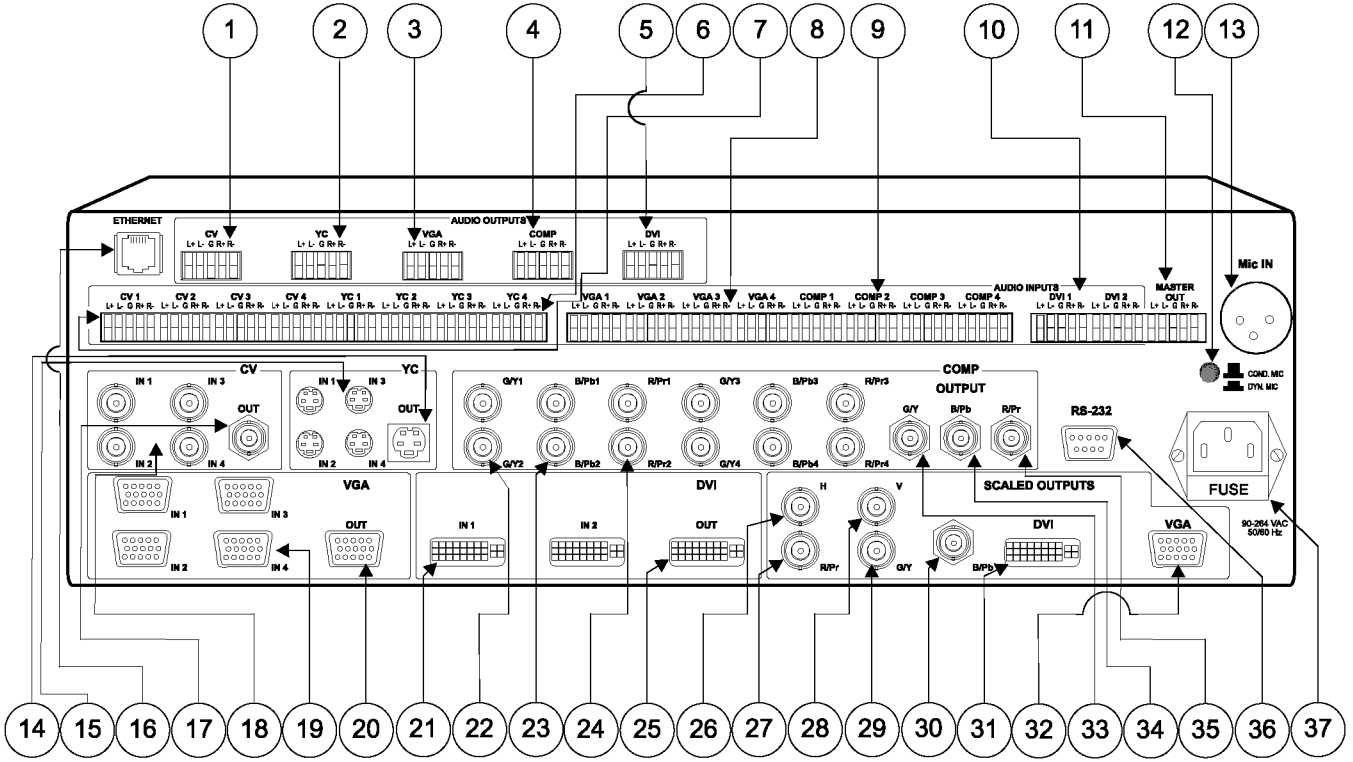


Figure 2: VP-725DSA Presentation Switcher / Scaler Rear Panel

Table 2: Rear Panel VP-725DSA Presentation Switcher / Scaler Features

#	Feature		Function
1	AUDIO OUTPUT Terminal	*CV* Connector	Connects the balanced audio acceptor (for composite)
2		*YC* Connector	Connects the balanced audio acceptor (for s-Video)
3		*VGA* Connector	Connects the balanced audio acceptor (for VGA)
4		*COMP* Connector	Connects the balanced audio acceptor (for component)
5		*DVI* Connector	Connects the balanced audio acceptor (for DVI)
6	AUDIO INPUT Terminal	*YC* Connector	Connects the balanced audio sources from 1 to 4 (for s-Video)
7		*CV* Connector	Connects the balanced audio sources from 1 to 4 (for composite)
8		*VGA* Connector	Connects the balanced audio sources from 1 to 4 (for VGA)
9		*COMP* Connector	Connects the balanced audio sources from 1 to 4 (for component)
10		*DVI* Connector	Connects the balanced audio sources from 1 to 2 (for DVI)
11	*MASTER OUT* Terminal Block Connector		Connects the routed balanced audio channel
12	Con / Dyn Switch		Pushed in selects a dynamic microphone, released selects a condenser microphone
13	*Mic IN* XLR Connector		Connects to the microphone
14	*YC OUT* 4p Connector		Connects to the s-Video (Y/C) acceptor
15	*YC IN* 4p Connectors		Connects to the s-Video (Y/C) sources from 1 to 4
16	ETHERNET port		Connects to your LAN[1]
17	*CV OUT* BNC Connector		Connects to the composite video acceptor
18	*CV IN* BNC Connectors		Connects to the composite video sources from 1 to 4
19	*VGA IN* HD15 Connectors		Connects to the VGA (analog interface) graphics sources from 1 to 4
20	*VGA OUT* HD15 Connector		Connects to the VGA (analog interface) graphics acceptor
21	*DVI IN* Connectors		Connects to the DVI (digital video interface) graphics sources from 1 to 2
22	COMP Inputs	*G/Y* BNC Connector	Connect to the component video source or RGB source from 1 to 4
23		*B/Pb* BNC Connector	
24		*R/Pr* BNC Connector	
25	*DVI OUT* Connector		Connects to the DVI (digital video interface) graphics acceptor
26	SCALED OUPUTS	*H* BNC Connector	Connects to the component video or RGB acceptor
27		*R/Pr* BNC Connector	
28		*V* BNC Connector	
29		*G/Y* BNC Connector	
30		*B/Pb* BNC Connector	
31		*DVI* Connector	Connects to the DVI (digital video interface) graphics acceptor
32		*VGA* HD15 Connector	Connects to the VGA (analog interface) graphics acceptor
33	COMP OUTPUT	*G/Y* BNC Connector	Connect to the component video acceptor or to an RGB acceptor
34		*B/Pb* BNC Connector	
35		*R/Pr* BNC Connector	
36	*RS-232* DB 9 Connector		Connects to PC or Serial Controller
37	Power Connector with *FUSE*		AC connector enabling power supply to the unit

1 Local Area Network (that is, computers sharing a common communications line or wireless link, which often share a server within a defined geographic area)

5 Connecting the VP-725DSA Presentation Switcher / Scaler

This section describes how to connect the **VP-725DSA**. In particular, how to:

- Connect the **VP-725DSA** rear panel (see this section)
- Connect the **VP-725DSA** MASTER OUT connector (see section 5.1)
- Connect the PC (see section 5.2)
- Connect the ETHERNET port (see section 5.3)
- Connect the audio inputs/outputs (see section 5.4)

Using the **VP-725DSA** you can select any one of the 18 inputs and scale that input to up to three scaled outputs (at the identical resolution).

To connect the **VP-725DSA**, connect the following[1] to the rear panel, as the example in Figure 10 illustrates:

1. Connect one or more of the following video sources:

- Up to 4 VGA graphics sources (for example, computers): VGA Source 1, VGA Source 2, VGA Source 3 and VGA Source 4 to the HD15 input connectors
- Up to 4 composite video sources[2]: CV Source 1, CV Source 2, CV Source 3, and CV Source 4 to the BNC input connectors
- Up to 4 s-Video sources[2]: YC Source 1, YC Source 2, YC Source 3, and YC Source 4 to the 4p input connectors
- Up to 4 component video (sometimes called YUV, or Y, B-Y, R-Y, or Y, Pb/Cb, Pr/Cr) sources or 4 RGB sources to the 4 sets of 3 BNC connectors, G/Y, B/Pb, and R/Pr. The example in Figure 10 illustrates an HDTV satellite receiver or an RGB camera connected to COMP Source 4
- Up to 2 DVI[3] graphics sources (for example, computers): DVI Source 1 and DVI Source 2 to the DVI connectors

2. Connect one or more of the following balanced stereo audio sources (not illustrated in Figure 10). In particular, the audio of:

- VGA Sources 1, 2, 3 and 4 to the AUDIO input terminal block connectors VGA 1, VGA 2, VGA 3, and VGA 4, respectively
- CV Sources 1, 2, 3 and 4 to the AUDIO input terminal block connectors CV 1, CV 2, CV 3, and CV 4, respectively
- YC Sources 1, 2, 3 and 4 to the AUDIO input terminal block connectors YC 1, YC 2, YC 3, and YC 4, respectively

1 Switch OFF the power on each device before connecting it to your VP-725DSA. After connecting your VP-725DSA, switch on its power and then switch on the power on each device

2 For example, VCR machines

3 Not HDCP sources

- Component video/ RGB Sources 1, 2, 3 and 4 to the AUDIO input terminal block connectors COMP 1, COMP 2, COMP 3, and COMP 4, respectively
- DVI Sources 1 and 2 to the AUDIO input terminal block connectors DVI 1 and DVI 2, respectively

3. Connect a microphone to the Mic IN XLR connector[1], and push in or release the Con / Dyn Switch as appropriate (see item 12 in Table 2).
4. Connect the CV OUT BNC connector, the YC OUT 4p connector, and the VGA OUT HD15 connector to the respective video inputs on the projector. Connect the MASTER OUT terminal block connector to the balanced audio input on the audio amplifier. Select any one of the 3 audio inputs to route to the MASTER OUT[1] (see the example in section 5.1.1).
5. Connect the COMP OUTPUT BNC connectors: G/Y, B/Pb, and R/Pr to the respective component video inputs on the Plasma monitor.
6. Connect up to 3 SCALED OUTPUTS, as follows:
   - Connect the RGBHV connectors (G/Y, B/Pb, R/Pr, H, and V) to the RGBHV acceptor, for example, a Plasma monitor
   - Connect the DVI connector to the DVI acceptor, for example, a projector
   - Connect the VGA connector to the VGA acceptor, for example, a monitor

   Connect the MASTER OUT terminal block connector to the balanced audio input on the audio amplifier, and route the audio input (corresponding to the converted video input) to the MASTER OUT[1] (see the example in section 5.1.2).
7. Connect the power cord[2] (not illustrated in Figure 10).
8. Connect a PC (optional), see section 5.2.
9. Connect the ETHERNET port (optional), see section 5.3.

5.1 Connecting the MASTER OUT Terminal Block Connector

The MASTER OUT terminal block connector can be used in the Master Audio Mode[3] (see section 5.1.1) and the Master AV Mode[4] (see section 5.1.2).

---

1 Not illustrated in Figure 10

2 We recommend that you use only the power cord that is supplied with this machine

3 Routes the selected audio input (one of 18) to the MASTER OUT terminal block connector

4 Converts the selected video input (one of 18) to the SCALED OUTPUTS, and also routes the selected audio input (one of 18) to the MASTER OUT terminal block connector

5.1.1 Using the MASTER OUT in the Master Audio Mode

In the Master Audio Mode (see the example in Figure 3) you can route the audio input from the VGA Source 1, CV Source 1 or YC Source 1 to the Master Out connector:

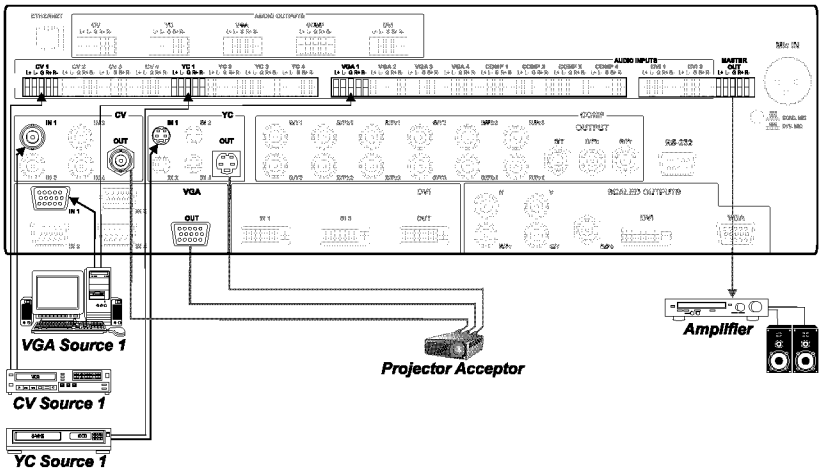


Figure 3: Connecting the MASTER OUT (in Master Audio Mode)

5.1.2 Using the MASTER OUT in the Master AV Mode

In the Master AV Mode (see the example in Figure 4) you can convert the component video input to the RGBHV SCALED OUTPUT, and route the audio input from that source to the Master Out connector:

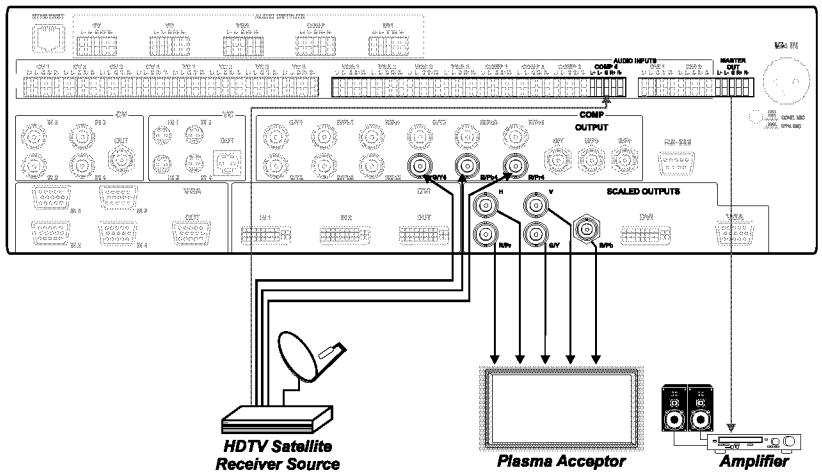


Figure 4: Connecting the MASTER OUT (in Master AV Mode)

5.2 Connecting a PC

You can connect a PC (or other controller) to the **VP-725DSA** via the RS-232 port for remote control, and for upgrading the firmware.

To connect a PC to a **VP-725DSA** unit, using the Null-modem adapter provided with the machine (recommended):

- Connect the RS-232 DB9 rear panel port on the **VP-725DSA** unit to the Null-modem adapter and connect the Null-modem adapter with a 9 wire flat cable to the RS-232 DB9 port on your PC

To connect a PC to a **VP-725DSA** unit, without using a Null-modem adapter:

- Connect the RS-232 DB9 port on your PC to the RS-232 DB9 rear panel port on the **VP-725DSA** unit, forming a cross-connection[1], as Figure 5 illustrates

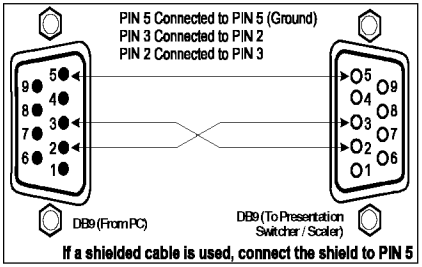


Figure 5: Connecting the PC

1 Also known as a Null-modem connection

5.3 Connecting the VP-725DSA via the ETHERNET port

To connect the **VP-725DSA** via the ETHERNET port, do the following:

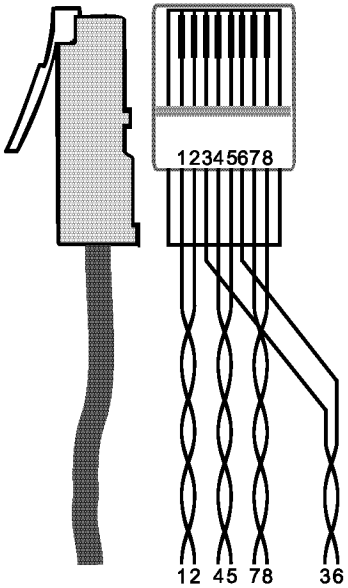
- Connect the ETHERNET port of the **VP-725DSA** to the LAN port of your PC, via a crossover cable with RJ-45 connectors, as Table 3 and Figure 6 define

Table 3: Crossover Cable RJ-45 PINOUT

EIA /TIA 568A Side 2	
PIN	**Wire Color**
1	Green / White
2	Green
3	Orange / White
4	Blue
5	Blue / White
6	Orange
7	Brown / White
8	Brown
Pair 1	4 and 5
Pair 2	3 and 6
Pair 3	1 and 2
Pair 4	7 and 8

EIA /TIA 568B Side 1	
PIN	**Wire Color**
1	Orange / White
2	Orange
3	Green / White
4	Blue
5	Blue / White
6	Green
7	Brown / White
8	Brown
Pair 1	4 and 5
Pair 2	1 and 2
Pair 3	3 and 6
Pair 4	7 and 8

Figure 6: RJ-45 PINOUT



- If connecting the ETHERNET port of the **VP-725DSA** to the LAN port on a network hub or network router, use a straight-through cable with RJ-45 connectors, as Table 4 defines

Table 4: Straight-through Cable RJ-45 PINOUT

EIA /TIA 568A Side 2	
PIN	**Wire Color**
1	Orange / White
2	Orange
3	Green / White
4	Blue
5	Blue / White
6	Green
7	Brown / White
8	Brown

EIA /TIA 568B Side 1	
PIN	**Wire Color**
1	Orange / White
2	Orange
3	Green / White
4	Blue
5	Blue / White
6	Green
7	Brown / White
8	Brown

5.4 Connecting the Balanced/Unbalanced Stereo Audio Input/Output

Figure 7, Figure 8, and Figure 9 illustrate how to wire a balanced/unbalanced input and/or output connection:

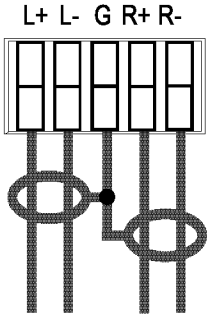


Figure 7: Connecting the Balanced Stereo Audio Input/Output

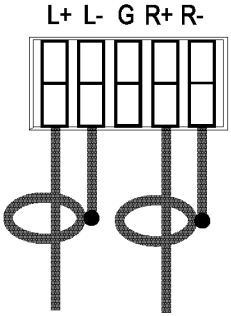


Figure 8: Connecting the Unbalanced Stereo Audio Input

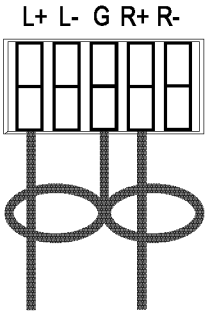


Figure 9: Connecting the Unbalanced Stereo Audio Output

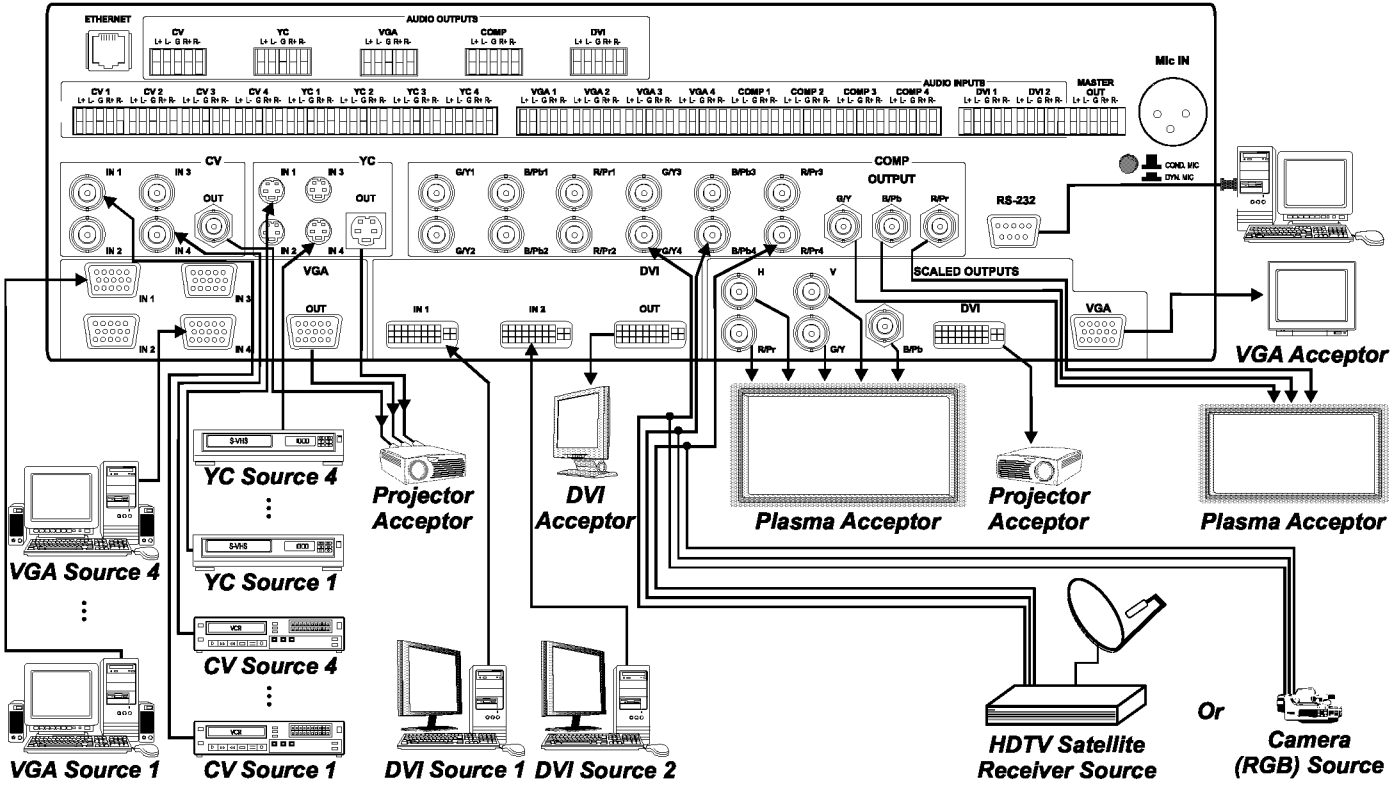


Figure 10: Connecting the VP-725DSA Presentation Switcher / Scaler

6 Understanding the Presentation Switcher / Scaler

The **VP-725DSA** includes the following front panel buttons:

- A set of 18 INPUT SELECTOR buttons
- A set of Video Group and Scaler Mode SELECT buttons[1] (see section 6.1), as well as Audio Group and Master Audio Group buttons (see section 6.2)
- A FREEZE button (see section 7.1.1)
- A PIP button (see section 6.1)
- A set of 7 OSD buttons (described in Table 1): *OSD ON*, *MENU*, *ENTER*, -, +, *UP*, and *DOWN*

6.1 Understanding the Video Group Mode/Scaler Mode

This is a machine with an 18x1:3 switcher for the Scaler, as well as individual video switchers for the 5 Video Groups: composite video, s-Video, component video (RGB or YPbPr), DVI-D and VGA.

When the **VP-725DSA** is in use, both modes operate simultaneously, as well as independently. That is, the Scaler output is available even when switching in the Video Group mode, and visa-versa (except for DVI: once a DVI input is selected in the Scaler Mode, that DVI input selection cannot be changed in the Video Group Mode).

In both the Video Group and the Scaler Mode, you can adjust[2] the Audio Level (Mic In).

6.2 Understanding the Audio Group Mode/Master Audio Group Mode

You can work with[3] the following:

- **Audio Group**, which lets you select the audio input from each group for switching. Pressing the Audio Group button illuminates it and displays the Audio Group OSD status. You can adjust[2] the Audio Level (VGA Grp In, Mic In, and VGA Grp Out)
- **AV Group**, which lets you select the audio-follow-video input from each

1 VIDEO GROUP MODE SELECT: selects the video input from each group for switching to its group output, and SCALER MODE SELECT: scales the selected video input (one of 18) at each of the SCALED OUTPUTS

2 By pressing the Audio Level key on the infra-red remote control transmitter (see Figure 53). This also cycles between the front panel AUDIO LEVEL buttons: Out, Line, and Mic

3 Select the front panel buttons by pressing them directly, or by pressing the SELECT key on the infra-red remote control transmitter (see Figure 50), or via Source Select OSD menu (see section 8.1.3)

group for switching. Pressing the Video Group button and the Audio Group button illuminate both simultaneously and displays the AV Group OSD status. You can adjust[1] the Audio Level (VGA Grp In, Mic In, and VGA Grp Out)

- **Master Audio**, which lets you route the selected audio input (one of 18) to the MASTER OUT terminal block connector. Pressing the Master Audio Group button illuminates it and displays the Master Audio OSD status. You can adjust[1] the Audio Level (Master In, Mic In, and Master Out)
- **Master AV**, which lets you scale the selected video input (one of 18) at each of the SCALED OUTPUTS and also route the selected audio input (one of 18) to the MASTER OUT terminal block connector. Pressing the Scaler button and the Master Audio button illuminate both simultaneously and displays the Master AV OSD status. You can adjust[1] the Audio Level (Master In, Mic In, and Master Out)

6.3 Understanding the Audio Features

This section describes:

- Switching balanced stereo audio signals in audio-follow-video or breakaway modes (see section 6.3.1)
- Adjusting the audio level (see section 6.3.2)
- Using the Microphone CONTROL Modes (see section 6.3.3)

6.3.1 Choosing Audio-Follow-Video or Audio Breakaway

You can switch balanced stereo audio signals in one of two ways, either:

- **Audio-follow-video** (AFV), in which all operations relate to both the video and the audio channels. To set the Audio-follow-video (AFV) option, make sure that the front panel buttons: Video Group and Audio Group both illuminate simultaneously; or
- **Breakaway**, in which video and audio channels switch independently. To set the Breakaway option, make sure that either the Audio Group button illuminates (for audio control only, that is, switching operations relate to Audio) or the Video Group button illuminates (for video control only, that is, switching operations relate to Video)

6.3.2 Adjusting the Audio Level

You can set the audio level to determine the volume for each Group input and output, as well as for the Master In, Master Out, and Mic In (see Table 12).

1 By pressing the Audio Level key on the infra-red remote control transmitter (see Figure 53). This also cycles between the front panel AUDIO LEVEL buttons: Out, Line, and Mic. The selected AUDIO LEVEL may also be adjusted by pressing the + and – buttons on the front panel

6.3.3 Using the Microphone CONTROL Modes

Using the MIC CONTROL[1] buttons and/or the OSD, you can do the following:

- **Override**[2], which sends the signal from the microphone to the Master output instead of from the line, whose signal is blocked
- **Mix**, which sends the combined signals from the microphone and the line to the Master output
- **Talkover**, routes the selected input to the output, until an audio signal is detected on the microphone input. When detected, the selected input is faded out (to be faded back in when no input is detected on the microphone)

6.4 Understanding the PIP Button Feature

The Picture-in-Picture inserter (PIP) is used for the simultaneous display of video and graphic sources, and lets you display:

- An inserted video source[3] PIP over a graphic source[4]
- An inserted graphic source[4] PIP over a video source[3]

Your Presentation Switcher / Scaler automatically recognizes and displays only the relevant sources, as the following 2 examples illustrate:

- Choosing the AV 1 PIP source when the VGA input is selected, will insert the composite video source over the VGA graphic displayed on the screen. You can choose a component[5], YC 1, YC 2 or AV 2 PIP source[6] (instead of the AV 1). You cannot choose VGA 1, VGA 2 or DVI[7]
- Choosing the VGA 1 PIP source when the AV 1 input is selected, will insert the VGA graphic source over the composite video displayed on the screen. You can choose a component[8], VGA 2 or DVI PIP source[9] (instead of the VGA 1). You cannot choose AV 2, YC 1, or YC 2

1 Only one of the three buttons can be ON, or all three buttons can be OFF (pressing a button will select that button, and turn OFF the previously selected button. If the selected button is pressed, it will turn it OFF)

2 When no MIC CONTROL button is selected, the audio input is routed to the MASTER output, ignoring the mic input

3 That is, composite, s-Video or component

4 That is, DVI, VGA or component

5 At video frequencies

6 As long as it is connected and switched on. Otherwise, choosing it will display a blank screen

7 As these are graphics sources and you cannot insert a graphics PIP over a graphics source

8 At graphic frequencies

9 As long as it is connected and switched on. Otherwise, choosing it will display a blank screen

6.4.1 Activating the PIP Feature

To activate the PIP (which illuminates the PIP button), do one of the following:

- Press the PIP button
- Switch on the PIP functionality via the OSD Menu
- Press the PIP key on the remote control transmitter (see Figure 53)

When the Source Prompt is ON, the PIP is enclosed by an orange frame, and the OSD PIP status appears superimposed over the top right corner of the screen for a few seconds, as Figure 11 illustrates. After a few seconds[1], the orange frame and the OSD PIP status automatically disappear[2].

Activating the PIP subsequently cycles between the PIP with the orange frame and no PIP.

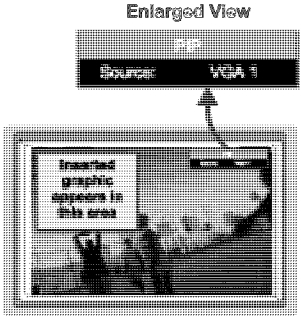


Figure 11: OSD PIP Status

When the Source Prompt is OFF, activating the PIP toggles between the PIP (with no frame and no OSD PIP status) and no PIP.

6.4.2 PIP Characteristics

You can determine the following PIP characteristics:

- PIP Source
- PIP Size (1/25, 1/16, 1/9, 1/4, or split screen)
- Horizontal and Vertical position, placing it anywhere on the screen

1 By default, 20 seconds. But you can reset the timeout (from 3 to 60 seconds), see section 8.1.5.7

2 Trying to activate the PIP again while the PIP is still enclosed by an orange frame deactivates the PIP

6.4.3 Toggling between the PIP and the Screen Source (SWAP)

To toggle back and forth between the PIP content and the screen source content, do the following:

- Press the SWAP key on the Infra-red remote control transmitter (see Figure 53)

The OSD SWAP status appears superimposed over the top right corner of the screen for a few seconds[1], as Figure 12 illustrates

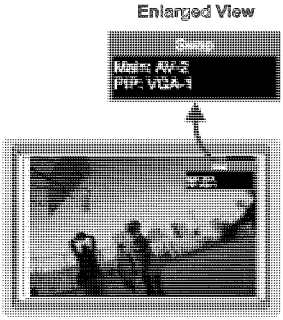


Figure 12: OSD SWAP Status

6.4.4 Resizing the PIP

To resize the PIP (1/25, 1/16, 1/9, 1/4, or split screen):

- When the Source Prompt is ON and the PIP is enclosed by an orange frame, use the Up and/or Down navigation control keys on the infra-red remote control transmitter (see Figure 53) or the *UP* and/or *DOWN* front panel OSD buttons
- Use the OSD Menu

6.4.5 Moving the Position of the PIP

To move the location of the PIP:

- When the Source Prompt is OFF (or ON, but without the orange frame), use the four navigation control keys on the infra-red remote control transmitter (see Figure 53), or the *UP*, *DOWN*, + and/or – front panel OSD buttons

1 By default, 20 seconds. But you can reset the timeout (from 3 to 60 seconds), see section 8.1.5.7

6.5 Locking and Unlocking the Front Panel

To prevent accidental changes to settings or unauthorized tampering with the front panel, you can lock the front panel. This disengages the front panel switches except for the *MENU* button on the front panel (press and hold for 3 seconds to unlock). When the front panel is locked, control from the infra-red remote transmitter is also blocked[1].

To lock the front panel:

- Press and hold the *MENU* front panel OSD button or the MENU key on the infra-red remote control transmitter (see Figure 53) for a few seconds, until the Key Lock On OSD status appears superimposed over the top right corner of the screen (when the Source Prompt is ON) for a few seconds[2], as Figure 13 illustrates

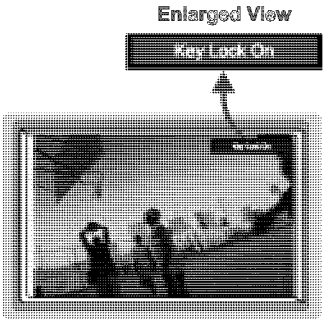


Figure 13: Locking / Unlocking the Front Panel

To unlock the front panel (releasing the protection mechanism):

- Press and hold the *MENU* front panel OSD button or the MENU key on the infra-red remote control transmitter (see Figure 53) for a few seconds, until the Key Lock Off OSD status appears superimposed over the top right corner of the screen (when the Source Prompt is ON) for a few seconds[2]

1 However, operation via RS-232 serial commands (remote controller or PC) and/or ETHERNET is still available

2 By default, 20 seconds. But you can reset the timeout (from 3 to 60 seconds), see section 8.1.5.7

7 Operating the Presentation Switcher / Scaler

This section describes how to:

- Switch and scale an input (see section 7.1)
- Select the output resolution (see section 7.2)

7.1 Switching an Input

You can switch seamlessly[1] between each input[2] that is connected to a source, by pressing the appropriate INPUT SELECTOR button (when the SCALER button is selected). The OSD status appears superimposed over the top right corner of the screen (when the Source Prompt is ON) for a few seconds[3], as Figure 14 illustrates:

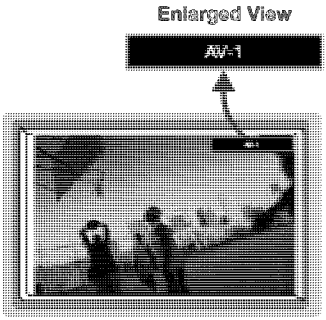


Figure 14: OSD Input Status

You can also use the INPUT SELECTOR button to freeze the image (see section 7.1.1) or to display a blank screen (see section 7.1.2).

7.1.1 Freezing the Image

You can freeze the image, by either:

- Pressing the FREEZE key on the infra-red remote control transmitter (see Figure 53) or the *FREEZE* front panel button

The image freezes. The *FREEZE* front panel button illuminates and the appropriate INPUT SELECTOR button flashes. The Freeze OSD status appears superimposed over the top right corner of the screen (when the Source Prompt is ON) for a few seconds[3]; **or**

1 For glitchless transitions between inputs

2 To set the image transition speed (fast, moderate or safe), see section 8.1.5.6

3 By default, 20 seconds. But you can reset the timeout (from 3 to 60 seconds), see section 8.1.5.7

- Pressing the appropriate illuminated INPUT SELECTOR front panel button or the appropriate INPUT SELECTOR key on the infra-red remote control transmitter (see Figure 53)
  The image freezes. The *FREEZE* front panel button illuminates and the appropriate INPUT SELECTOR button flashes. The Freeze OSD status appears superimposed over the top right corner of the screen (when the Source Prompt is ON) for a few seconds[1]

7.1.2 Displaying a Blank Screen

You can display a blank screen, as follows:

1. Press the appropriate illuminated INPUT SELECTOR front panel button or the appropriate INPUT SELECTOR key on the infra-red remote control transmitter (see Figure 53)[2].
   The image freezes. The *FREEZE* front panel button illuminates and the appropriate INPUT SELECTOR button flashes. The Freeze OSD status appears superimposed over the top right corner of the screen (when the Source Prompt is ON) for a few seconds[1]
2. Press the appropriate flashing INPUT SELECTOR front panel button or the INPUT SELECTOR key on the infra-red remote control transmitter (see Figure 53)
   The frozen image is replaced by a blank screen. The *FREEZE* front panel button continues to illuminate and the appropriate INPUT SELECTOR button flashes more slowly. The Blank status appears superimposed over the top right corner of the screen (when the Source Prompt is ON) for a few seconds[1]

You can choose the color of the blank screen (blue or black - see Figure 45).

1 By default, 20 seconds. But you can reset the timeout (from 3 to 60 seconds), see section 8.1.5.7

2 Alternatively, press the FREEZE key on the infra-red remote control transmitter (see Figure 53) or the FREEZE front panel button. This will cause the FREEZE front panel button to illuminate and the appropriate INPUT SELECTOR button to flash

7.2 Choosing the Output Resolution

You can select the output resolution by pressing the OUT key on the infra-red remote control transmitter (see Figure 53) or via the Output Setting OSD menu (see Table 16). The OSD status appears superimposed over the top right corner of the screen (when the Source Prompt is ON) for a few seconds[1], as Figure 15 illustrates[2]:

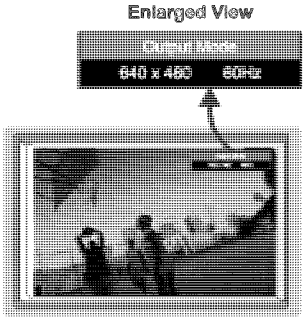


Figure 15: OSD Output Status

1 By default, 20 seconds. But you can reset the timeout (from 3 to 60 seconds), see see section 8.1.5.7

2 Adjusting the output resolution results in a corresponding adjustment to the size of the OSD status window

8 Controlling the VP-725DSA Presentation Switcher / Scaler

You can control the Presentation Switcher / Scaler via:

- The OSD Menu Screen (see section 8.1)
- The front panel LCD Display (see section 8.3)
- The infra-red remote control transmitter (see section 8.4)
- ETHERNET (see section 8.5)
- RS-232 remote control

8.1 Operating via the OSD MENU Screen

The OSD superimposes a menu on the screen from which you can control your **VP-725DSA**. When the OSD ON front panel button is selected, pressing the *MENU* front panel OSD button or the MENU key on the infra-red remote control transmitter (see Figure 53) displays the first OSD screen, the "Brightness and Contrast" screen (see Figure 16).

If the OSD is locked[1], pressing the *MENU* front panel OSD button or the MENU key on the infra-red remote control transmitter (see Figure 53) will not display the "Menu screen". In this case, you can navigate via the front panel LCD.

After initially pressing the *MENU* front panel OSD button or the MENU key on the infra-red remote control transmitter, each subsequent press moves to the previous level in the OSD screen (Esc.).

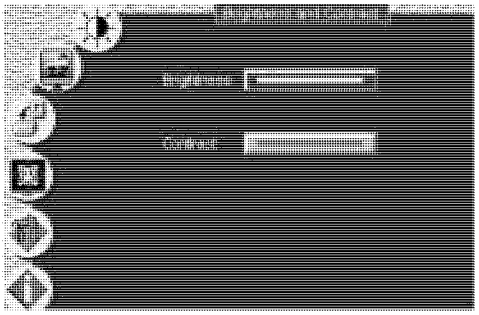


Figure 16: Controlling the Brightness and Contrast

1 Pressing the OSD ON front panel OSD button or the OSD key on the infra-red remote control transmitter (see Figure 53) will block access to the OSD Menu

Figure 17 defines the six interactive icons[1]:

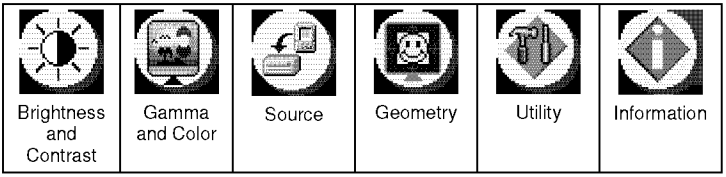


Figure 17: Menu Screen Icons

8.1.1 Controlling the Brightness and Contrast

Figure 16 and Table 5 define the Brightness and Contrast Screen:

Table 5: Controlling the Brightness and Contrast

Brightness and Contrast		
Level 1	**Range**	**Default**
Brightness	0 to 128	64
Contrast	0 to 128	64

8.1.2 Controlling the Gamma and Color

Figure 18 and Table 6 define the Gamma and Color Screen. You can choose Normal (average setting), Presentation (higher black level), Cinema (higher white balance), Nature (higher green level), User 1 or User 2.

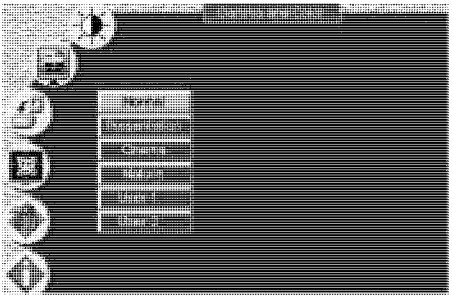


Figure 18: Controlling the Gamma and Color

1 Each icon represents a Level 1 function. In addition to Level 1, the OSD structure includes Level 2 (a subset of level 1), Level 3 (a subset of level 2), Level 4 (a subset of level 3) and Range

Table 6: Controlling the Gamma and Color

Gamma and Color			
Level 1	**Level 2**	**Range**	**Default**
Normal			
Presentation			
Cinema			
Nature			
User 1 / 2	Gamma	-10 to 10	0
	Color Temperature		
	Red	0 to 127	64
	Green	0 to 127	64
	Blue	0 to 127	64
	Color Manager		
	Red	0 to 32	16
	Green	0 to 32	16
	Blue	0 to 32	16
	Yellow	0 to 32	16

Choosing User 1 or User 2 from the Gamma and Color Screen illustrated in Figure 18, displays the Gamma, Color Temperature and Color Manager Screen in Figure 19. Each user setting is customized to the applicable environment. The user sets the parameters and saves them for recall later.

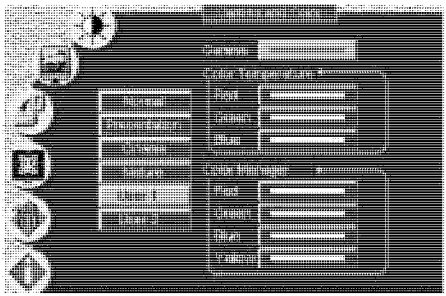


Figure 19: Gamma, Color Temperature/Manager User 1/2 Screen

8.1.3 Selecting the Source

Figure 20 and Table 7 define the Source (Search, Select, and Source) Screen.

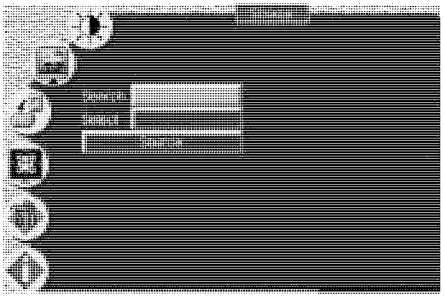


Figure 20: Selecting the Source

Table 7: Selecting the Source

Source		
Level 1	**Level 2**	**Level 3**
Search	Manual	
	Auto	
Select	Video Group	
	Audio Group	
	AV Group	
	Scaler	
	Master Audio	
	Master AV	
Source	VGA Group	VGA1
		VGA2
		VGA3
		VGA4
	DVI Group	DVI1
		DVI2
	Comp Group	Comp1
		Comp2
		Comp3
		Comp4
	YC Group	YC1
		YC2
		YC3
		YC4
	AV Group	AV1
		AV2
		AV3
		AV4
	Master	VGA1
		VGA2
		VGA3
		VGA4
		DVI1
		DVI2
		Comp1
		Comp2
		Comp3
		Comp4
		YC1
		YC2
		YC3
		YC4
		AV1
		AV2
		AV3
		AV4

Figure 21 illustrates the Search (Manual or Auto) option:

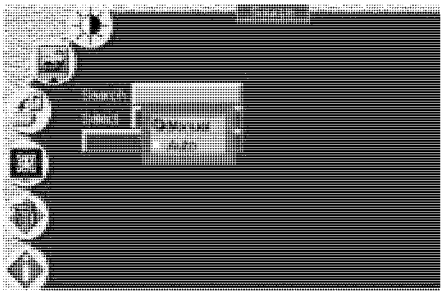


Figure 21: Selecting the Search

Selecting Manual Search disables the Auto Search option (which finds the active source). After powering up, the **VP-725DSA** will not scan for an active input but will display the source selected prior to power down, even if that input is inactive.

Figure 22 illustrates the Group Select option. The Video Group[1], Audio Group[2], AV Group[3], Scaler[4], Master Audio[5], and Master AV[6] are available with the **VP-725DSA**:

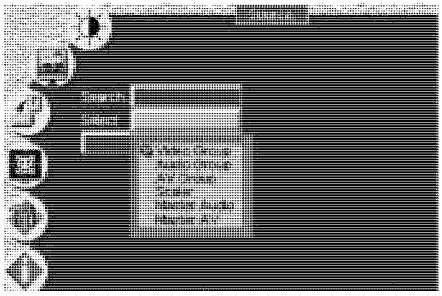


Figure 22: Selecting the Group

1 Selects the video input from each group: CV, YC, Component, VGA, DVI for switching to its local (group) output

2 Selects the audio (breakaway mode) input from each group for switching

3 Selects the audio-follow-video input from each group for switching

4 Converts the selected input (one of 18) to the SCALED OUTPUTS

5 Routes the selected audio input (one of 18) to the MASTER OUT terminal block connector (see the example in Figure 3)

6 Converts the selected video input (one of 18) to the SCALED OUTPUTS, and also routes the selected audio input (one of 18) to the MASTER OUT terminal block connector (see the example in Figure 4)

Figure 23 illustrates the Source:

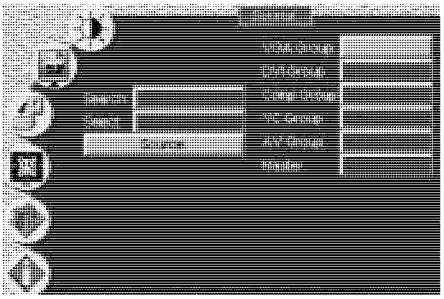


Figure 23: Selecting the Source

8.1.4 Controlling the Geometry

Figure 24 and Table 8 define the main Geometry Screen, from which you can choose the aspect ratio, zoom, and set the keystone angle:

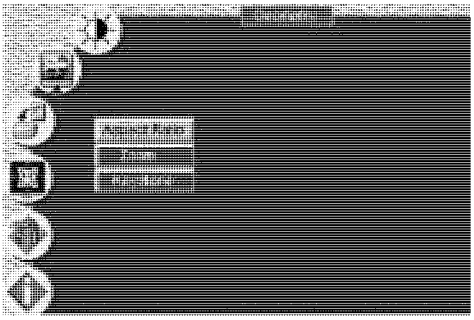


Figure 24: Geometry Screen

Table 8: Controlling the Geometry

Geometry				
Level 1	**Level 2**	**Level 3**	**Range**	**Default**
Aspect Ratio	Anamorphic			
	Virtual Wide			
	Letterbox	Pan	-32 to 32	0
	Native	Left + Up		
		Right + Up		
		Center		
		Left + Down		
		Right + Down		
	4:3 Output	Shift	-32 to 32	0
	User Define	H-Zoom	-32 to 32	0
		V-Zoom	-32 to 32	0
		H-Pan	-32 to 32	0
		H- Pan	-32 to 32	0
Zoom	Zoom Ratio	100%		
		150%		
		200%		
		225%		
		250%		
		275%		
		300%		
		325%		
		350%		
		375%		
		400%		
	Zoom Position Adjustment			
Keystone	Angle		-32 to 32	0

Figure 25 illustrates the Geometry (Aspect Ratio) Screen. You can set the following characteristics according to your specific requirements: anamorphic (displays the aspect ratio (usually 16:9)), virtual wide (anamorphic plus non-linear scaling), letterbox (the vertical line is expanded to full screen[1]—it is assumed that there are two bands of black, top and bottom of the screen), native (lets you set the native resolution according to the specifications of the plasma screen or projector), 4:3 output (the length to height ratio is 4:3), and user define (H-Zoom, V-Zoom, H-Pan, and V-Pan):

1 Panning the picture refers to resizing and cropping it

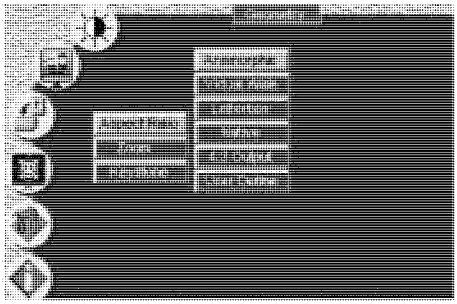


Figure 25: Geometry (Aspect Ratio) Screen

Figure 26 illustrates the Geometry (Zoom) Screen:

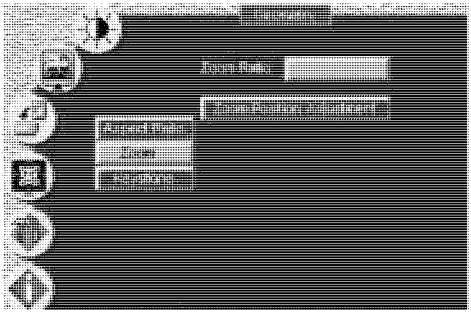


Figure 26: Geometry (Zoom) Screen

The zoom ratio and the zoom position are illustrated by a small rectangle inside a transparent pop-up OSD Enlarge status box that appears at the top right corner of the screen, as the example in Figure 27 illustrates:

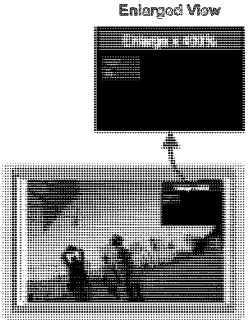


Figure 27: OSD Enlarge Status

When you change the zoom ratio or zoom position, the screen image is adjusted correspondingly, and the change is reflected in the pop-up OSD

Enlarge status box. For example, Figure 28 illustrates a zoom ratio increase from 200% (Image A) to 400% (Image B):

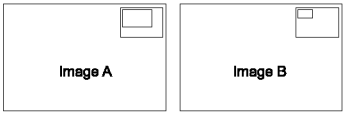


Figure 28: Zoom Ratio Adjustment Example

Figure 29 illustrates how the pop-up OSD Enlarge status box shows a zoom position adjustment from the top left corner (Image C) to the lower right corner (Image D):

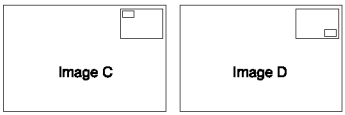


Figure 29: Zoom Position Adjustment Example

8.1.4.1 Adjusting the Zoom Ratio

You can adjust the zoom ratio to up to 400% via one or both of these methods:

- Using the Zoom + and/or the Zoom - control keys[1] on the infra-red remote control transmitter (see Figure 53). The pop-up OSD Enlarge status box continuously displays the zoom ratio and position, as Figure 27 illustrates
- Using the OSD Menu buttons, as Figure 30 illustrates

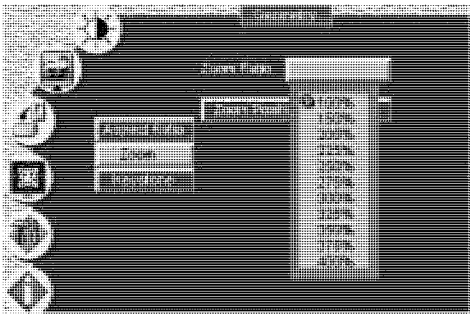


Figure 30: Geometry (Zoom Ratio) Screen

1 The and the buttons

8.1.4.2 Adjusting the Zoom Position

You can adjust the zoom position (see the example in Figure 29) via one or more of the following methods:

- Using the navigation control keys on the infra-red remote control transmitter (see Figure 53), to fine tune the zoom position (that is, to slowly zoom-in at any location on the screen)[1]
- Using the OSD Menu buttons (see Figure 31)[2]

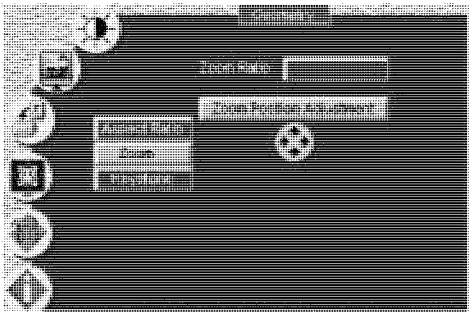


Figure 31: Geometry (Zoom Position Adjustment) Screen

You can adjust the Keystone (to keep the picture rectangular) according to your specific requirements (see Figure 32).

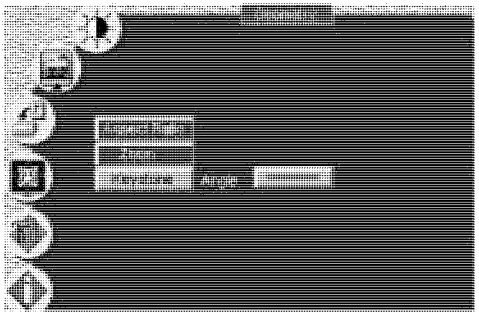


Figure 32: Geometry (Keystone) Screen

1 For example, to zoom-in toward the lower right of the image, press the and the buttons separately, as required

2 For example, to zoom-in to the lower right part of the image instead of the top left part, press the + and DOWN OSD Menu buttons separately, as required

8.1.5 Configuring via the Utility Screens

You can determine how your **VP-725DSA** will function either generally or on a specific occasion, via the Utility screen settings (see Figure 33):

Figure 33: Utility Screen

8.1.5.1 Choosing the Graphic Utility Settings

Figure 34 and Table 9 define the Graphic[1] Setting Utility screen. You can set the color format (see Figure 35), position, color, hue, sharpness, frequency and phase, as well as auto image[2] and auto gain[3].

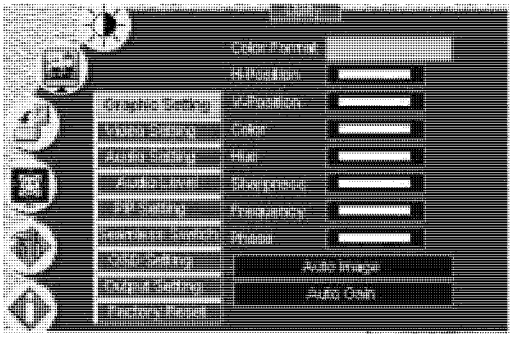


Figure 34: Choosing the Graphic Utility Settings

1 When a VGA source is selected, "Graphic Setting" will be shown. "HDTV Setting" will appear when an HDTV source is selected

2 Assesses the image and improves the quality accordingly, by automatically adjusting the phase, frequency and position

3 Automatically adjusts the brightness and contrast

Table 9: Choosing the Graphic Utility Settings

Utility				
Level 1	**Level 2**	**Level 3**	**Range**	**Default**
Graphic Setting	Color Format	Default		
		RGB		
		YUV		
	H-Position		0 to 255	128
	V-Position		0 to 255	128
	Color		0 to 128	70
	Hue		0 to 128	64
	Sharpness		0 to 16	8
	Frequency		0 to 100	49
	Phase		0 to 31	0
	Auto Image			
	Auto Gain			

Selecting the color format (see Figure 35) lets you select RGB or YUV[1] colorspace. When the Default setting is chosen, the colorspace is set according to the detected input resolution.

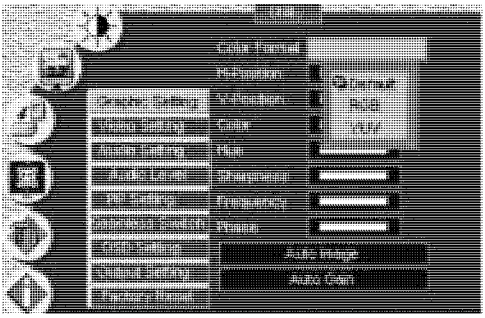


Figure 35: Graphic Setting Color Format Utility Screen

8.1.5.2 Choosing the Video Utility Settings

Figure 36 and Table 10 define the Video Setting Utility screen. You can set the Color Format, Standard (see Figure 37), color, hue, sharpness, and position.

1 That is Y, B-Y, R-Y colorspace, also known as Y, C_b, C_r or Y, P_b, P_r

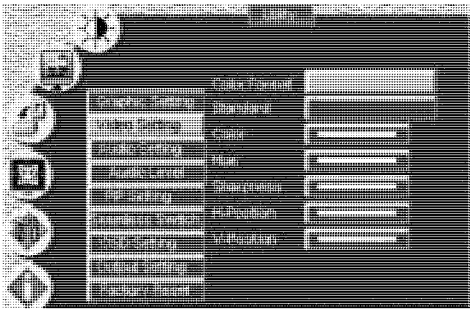


Figure 36: Choosing the Video Utility Settings

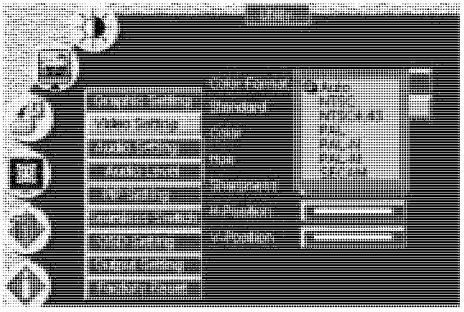


Figure 37: Video Setting Standard Utility Screen

Table 10: Choosing the Video Utility Settings

Utility					
Level 1	**Level 2**	**Level 3**	**Level 4**	**Range**	**Default**
Video Setting	Color Format	Default			
		RGB			
		YUV			
	Standard	Auto	Auto		
			NTSC		
			NTSC4.43		
			PAL		
			PAL-N		
			PAL-M		
			SECAM		
	Color			0 to 128	64
	Hue			0 to 128	64
	Sharpness			0 to 16	11
	H-Position			0 to 20	15
	V-Position			0 to 20	10

8.1.5.3 Choosing the Audio Utility Settings

Figure 38, Figure 39 and Table 11 define the Audio Setting Utility screen:

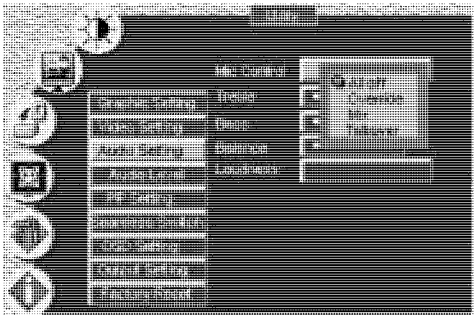


Figure 38: Choosing the Audio Utility Settings

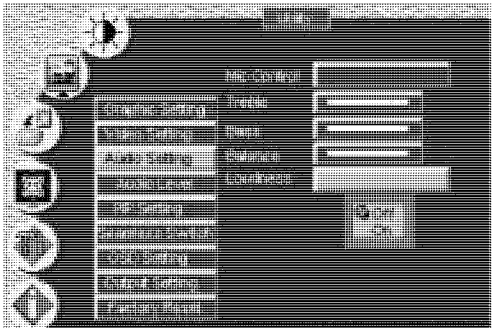


Figure 39: Choosing the Audio Utility Settings

Table 11: Choosing the Audio Utility Settings

Utility				
Level 1	**Level 2**	**Level 3**	**Range**	**Default**
Audio Setting	Mic Control	All off		
		Override		
		Mix		
		Talkover		
	Treble		0 to 255	128
	Bass		0 to 255	128
	Balance		0 to 255	128
	Loudness	Off		
		On		

8.1.5.4 Choosing the Audio Level Utility Settings

Figure 40 and Table 12 define the Audio Level Utility screen:

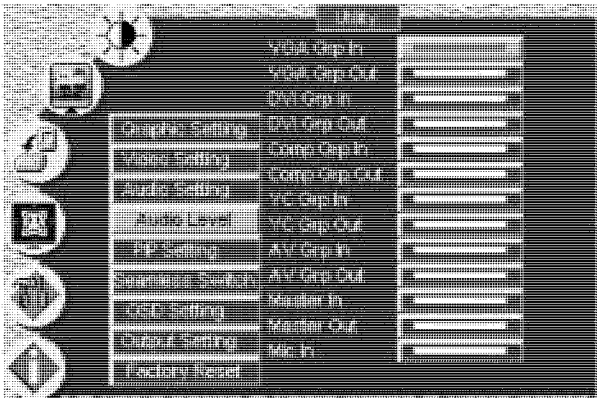


Figure 40: Choosing the Audio Level Settings

Table 12: Choosing the Audio Level Settings

Utility			
Level 1	**Level 2**	**Range**	**Default**
Audio Level	VGA Grp In	0 to 255	160
	VGA Grp Out	0 to 255	160
	DVI Grp In	0 to 255	160
	DVI Grp Out	0 to 255	160
	Comp Grp In	0 to 255	160
	Comp Grp Out	0 to 255	160
	YC Grp In	0 to 255	160
	YC Grp Out	0 to 255	160
	AV Grp In	0 to 255	160
	AV Grp Out	0 to 255	160
	Master In	0 to 255	160
	Master Out	0 to 255	160
	Mic In	0 to 255	0

8.1.5.5 Choosing the PIP Utility Settings

Figure 41 and Table 13 define the PIP Setting Utility screen. You can activate the PIP, choose the source, the size, and the position of the PIP.

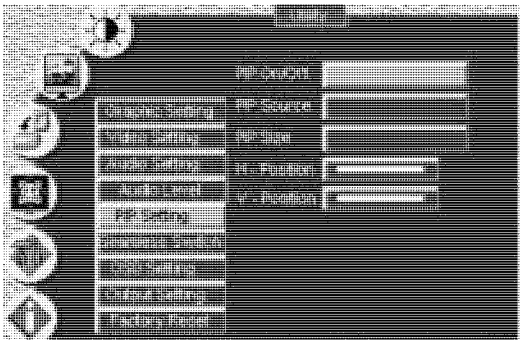


Figure 41: Choosing the PIP Utility Settings

Table 13: Choosing the PIP Utility Settings

Utility				
Level 1	**Level 2**	**Level 3**	**Range**	**Default**
PIP Setting	PIP On/Off	Off		
		On		
	PIP Source	VGA-1		
		VGA-2		
		VGA-3		
		VGA-4		
		DVI-1		
		DVI-2		
		Comp1		
		Comp2		
		Comp3		
		Comp4		
		YC-1		
		YC-2		
		YC-3		
		YC-4		
		AV-1		
		AV-2		
		AV-3		
		AV-4		
	PIP Size	1/25		
		1/16		
		1/9		
		1/4		
		Split		
	H-Position		0 to 36	1
	V-Position		0 to 36	1

8.1.5.6 Choosing the Seamless Switch Utility Settings

Figure 42 and Table 14 define the Seamless Switch Utility screen. You can choose the image transition speed Mode[1].

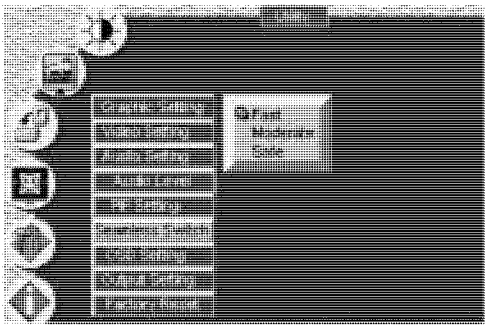


Figure 42: Choosing the Seamless Switch Utility Settings

Table 14: Choosing the Seamless Switch Utility Settings

Utility		
Level 1	**Level 2**	**Default**
Seamless Switch	Fast	
	Moderate	*
	Safe	

1 FAST (an immediate switch, without checking the resolution. However, the image transition may appear unstable), MODERATE (between fast and safe) or SAFE (a smooth image transition - the input resolution at the input is checked and outputted after a few seconds delay, but it takes longer than fast)

8.1.5.7 Choosing the OSD Utility Settings

Figure 43 and Table 15 define the OSD Setting Utility screen. You can set the OSD position, time out, size (see Figure 44), source prompt[1], and choose the blank color (blue or black - see Figure 45).

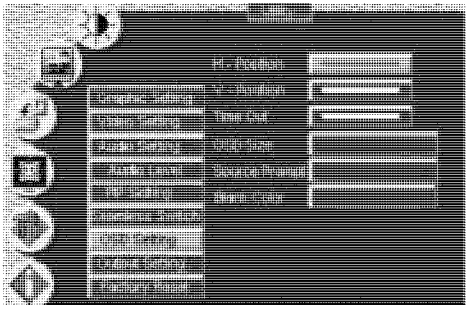


Figure 43: Choosing the OSD Utility Settings

Table 15: Choosing the OSD Utility Settings

Utility				
Level 1	**Level 2**	**Level 3**	**Range**	**Default**
OSD Setting	H-Position		0 to 36	18
	V-Position		0 to 36	18
	Time Out		3 to 60	20
	OSD Size			
	Source Prompt	Off		
		On		
	Blank Color	Blue		
		Black		

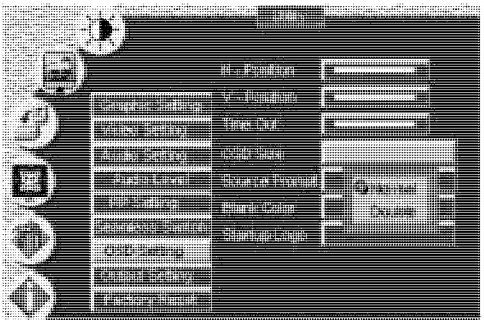


Figure 44: OSD Size Utility Screen

1 We recommend that you set the source prompt ON, when adjusting the system. During a presentation, set the source prompt OFF to avoid the appearance of OSD screen labels

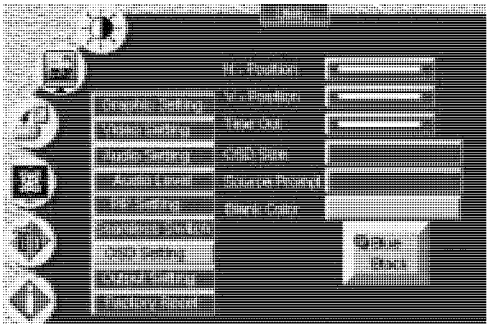


Figure 45: OSD Blank Color Utility Screen

8.1.5.8 Choosing the Output Utility Settings

Figure 46 and Table 16 define the Output Setting Utility screen. You can set the resolution[1] (see Figure 47), refresh rate (see Figure 48), color format, and a user definable output mode[2] (see Figure 49 and Table 17).

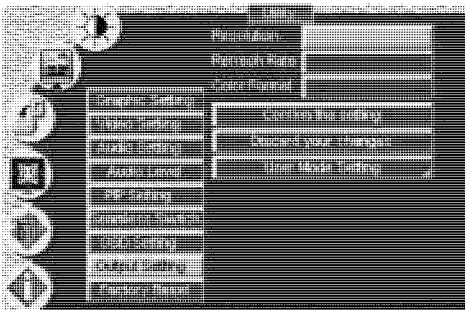


Figure 46: Choosing the Output Utility Settings

1 That is, the identical resolution at each scaled output

2 Recommended for advanced users only – non-standard settings may not be recognized by the display device

Table 16: Choosing the Output Utility Settings

Utility			
Level 1	**Level 2**	**Level 3**	
Output Setting	Resolution	640x480	720P
		800x600	1080i
		1024x768	576P
		1280x1024	720x400
		1600x1200	832x624
		852x1024i	1024x800
		1024x1024i	1152x864
		1366x768	1152x870
		1365x1024	1152x900
		1280x720	1280x960
		720x483	1280x768
		852x480	1024x576
		1400x1050	User Define
		480P	
	Refresh Rate	60Hz	
		75Hz	
		85Hz	
	Color Format	Default	
		RGB	
		YUV	
	Confirm the setting		
	Discard your changes		
	User Mode Setting		

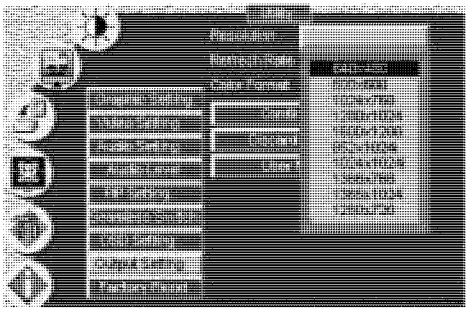


Figure 47: Output Setting Resolution Utility Screen

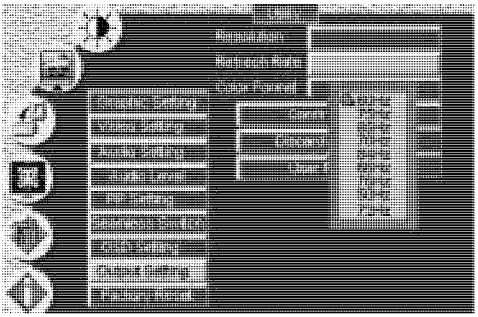


Figure 48: Output Setting Refresh Rate Utility Screen

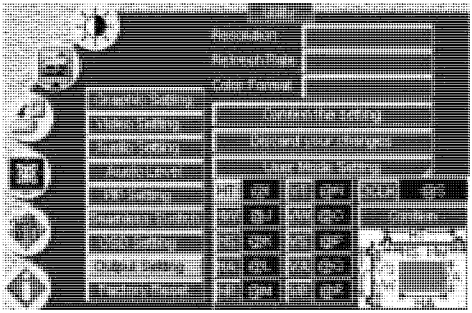


Figure 49: Output Setting User Mode Setting Utility Screen

Table 17: User Mode Setting Definitions

User Mode Setting Definitions
HT: Horizontal total
HW: Horizontal sync pulse width
HS: Horizontal active start point
HA: Horizontal active region
HP: Horizontal polarity
VT: Vertical total
VW: Vertical sync pulse width
VS: Vertical active start point
VA: Vertical active region
VP: Vertical polarity
OCLK: Output clock

8.1.5.9 Choosing Factory Reset

From the Factory Reset Utility screen (see Figure 50), you can reset your **VP-725DSA** to its preset default setting:

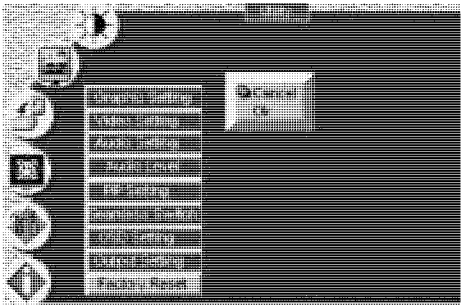


Figure 50: Factory Reset Utility Screen

8.1.6 Verifying Configuration Details via the Information Screen

From the Information screen (see Figure 51), you can verify information that includes: the main source, the PIP source, the output mode, as well as the unit's firmware versions:

Figure 51: Information Screen

8.2 Using Text Overlay

A text overlay feature is provided on the machine. This is accessed via the application program (AP) that can be downloaded from our Web site (or may be available on a CD provided with the machine).

Running this AP with the PC connected to the **VP-725DSA** allows text overlaying on the SCALED OUTPUTS, with a rich feature set including text color and speed, transparency, text position, repetition and so on.

8.3 Operating via the LCD Display

You can control the **VP-725DSA** from the front panel high contrast LCD Display. You can also operate the **VP-725DSA** via the LCD Display, using the:

- Front panel OSD buttons: *MENU*, *ENTER*, -, +, *UP* and *DOWN*
- Infra-red remote control transmitter (see Figure 53) keys: MENU, and the navigation keys

For example, to set[1] the Keystone to 6 via the LCD Display, using the front panel buttons, do the following:

1. Turn the **VP-725DSA** unit ON, and press the OSD ON button (if selected).
2. Press the appropriate front panel OSD buttons (as defined in Figure 52).

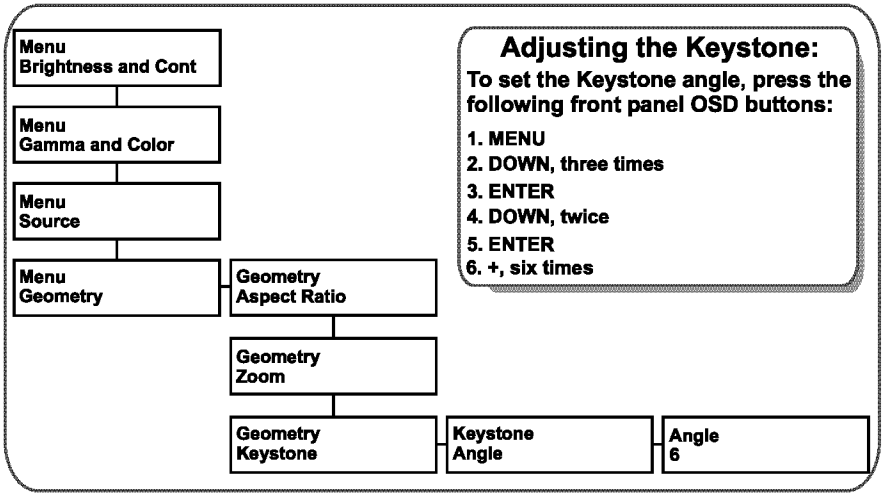


Figure 52: Example of how to use the LCD Display

8.4 Operating via the Infra-red Remote Control Transmitter

You can control the **VP-725DSA** remotely, from the infra-red remote control transmitter (that has a range of up to 15 meters and is powered by two AAA size 1.5V DC batteries), as defined in Figure 53 and Table 18:

1 To keep the picture rectangular. Figure 32 illustrates how to adjust the Keystone via the OSD Menu

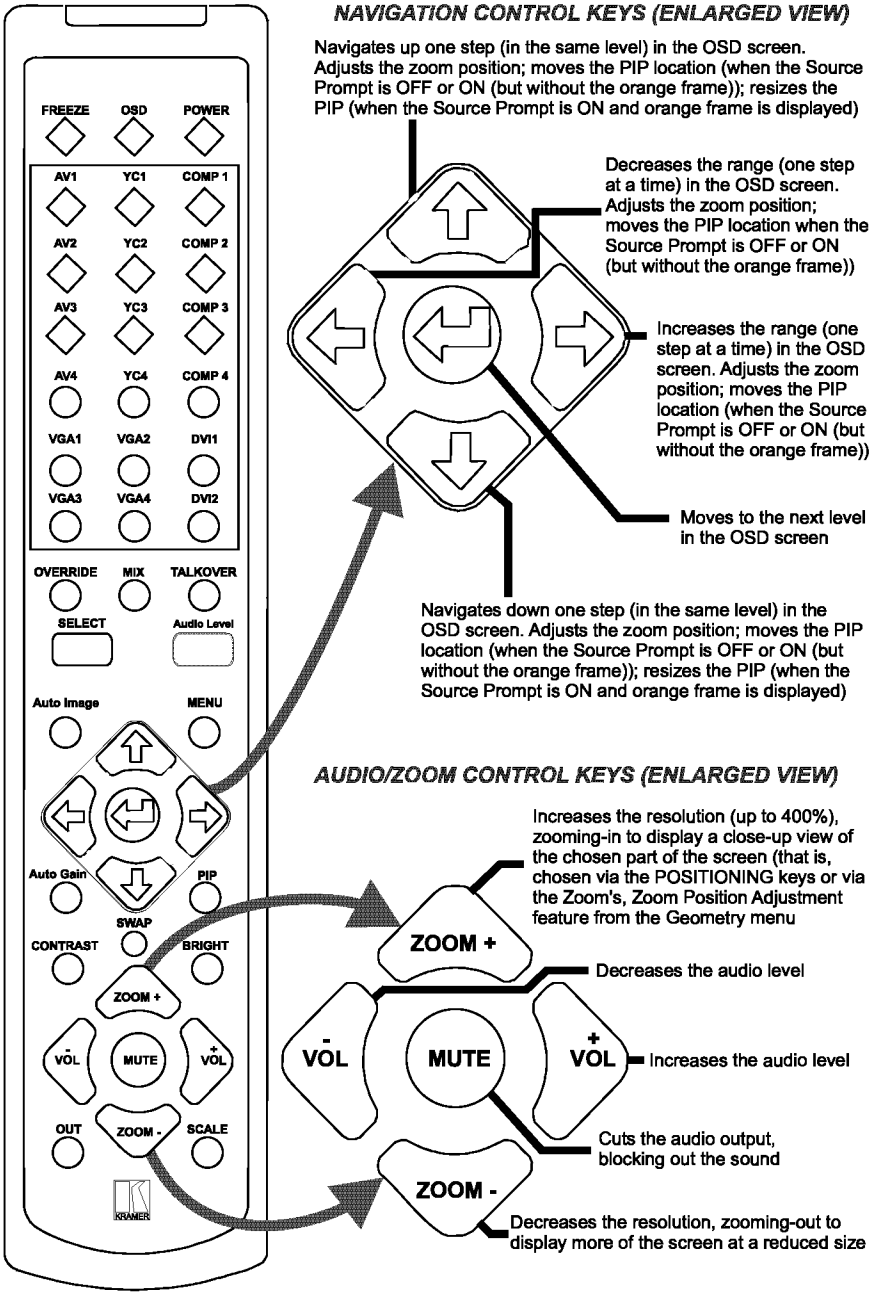


Figure 53: Infra-red Remote Control Transmitter

Table 18: Infra-red Remote Control Transmitter Functions

Keys	Function
FREEZE	Freezes the output video image
OSD	Activates/deactivates access to the OSD Menu[1]
POWER	Cycles power[2]
INPUT SELECTOR[3]	18 separate keys for selecting these sources: AV1, AV2, AV3, AV4; COMP1, COMP2, COMP3, COMP4; YC1, YC2, YC3, YC4; VGA1, VGA2, VGA3, VGA4; DVI1 and DVI2
OVERRIDE	Sends the signal from the microphone to the Master output instead of from the Line, whose signal is blocked
MIX	Sends the combined signals from the microphone and the Line to the Master output
TALKOVER	Routes the selected input to the output, until an audio signal is detected on the microphone input. When this happens the selected input is faded out (to be faded back in when no input is detected on the microphone)
SELECT	Cycles between Video Group and Scaler
Audio Level	Set the audio level (volume) for each Group input and output, as well as for the Master In, Master Out, and Mic In
Auto Image	Assesses the image and improves the quality accordingly, by automatically adjusting the phase, frequency and position
MENU	Displays the OSD Menu screen[4] and locks/unlocks the front panel (see section 6.5)
NAVIGATION CONTROL[5]	Allow maneuvering within an OSD screen (all keys); adjusts the zoom position (4 keys); moves the PIP location when the Source Prompt is OFF (4 keys); resizes the PIP when the Source Prompt is ON (2 keys)
Auto Gain	Automatically adjusts the brightness and contrast
PIP	Toggles the picture-in-picture function and illuminates/turns off the PIP button (see section 6.1)
SWAP	Toggles between the PIP content and the screen source content (see section 6.4.3)
CONTRAST	Displays the contrast status (adjust using the ⇒/⇐ keys)
BRIGHT	Displays the brightness status (adjust using the ⇒/⇐ keys)
ZOOM CONTROL[5]	Allows volume and zoom control
OUT	Selects the output resolution
SCALE	Toggles between each of the following Aspect Ratios: Anamorphic, Virtual Wide, Letterbox, Native, 4:3 Output, and User Define

1 The OSD ON front panel button is activated (illuminated) by default, and pressing the MENU key (or the MENU front panel button) displays the OSD Menu. To toggle the OSD, press the OSD key (or the OSD ON front panel button); the OSD ON or OSD OFF status appears superimposed over the top right corner of the screen and the OSD button on the front panel is illuminated or turned off. (Note that deselecting the OSD ON front panel button during an OSD operation will not turn off the OSD Menu (even though the OSD OFF status appears superimposed over the top right corner of the screen), until you complete the OSD operation)

2 Puts the machine in standby mode: (powering down the machine except that the power switch on the machine continues to illuminate) and causing the IR Receiver / LED to light red (instead of green)

3 You can also use the INPUT SELECTOR keys to freeze the image (see section 7.1.1) or to display a blank screen (see section 7.1.2)

4 Or moves to the previous level in the OSD screen

5 Consists of a set of 5 separate keys. See the illustration in Figure 53 which shows an enlarged view of this part of the Infra-red remote control transmitter

8.5 Operating via ETHERNET

You can control the **VP-725DSA** via Ethernet. (Not available at the time of printing; see our Web site[1] for the latest updated information).

9 Technical Specifications

Table 19 includes the technical specifications:

Table 19: Technical Specifications[2] of the VP-725DSA Presentation Switcher / Scaler

INPUTS:	4 x CV 1Vpp/75Ω on BNC connectors; 4 x YC 1Vpp (Y); 0.3Vpp (C)/75Ω on 4p connectors; 4 x Component (Y/G, Pb/B, Pr/R) on BNC connectors; 4 x VGA (VGA through UXGA) on HD15F connectors; 2 x DVI-D on DVI-I connectors. 18 x balanced stereo audio on terminal block connectors, 22dBm; microphone on a female XLR connector
GROUP OUTPUTS:	1x CV 1Vpp/75Ω on a BNC connector; 1 x YC 1Vpp (Y); 0.3Vpp (C)/75Ω on 4p connector; 1 x Component (Y/G, Pb/B, Pr/R) on BNC connectors; 1 x VGA (VGA through UXGA) on an HD15F connector; 1 x DVI-D on a DVI-I connector. 6 x balanced stereo audio on terminal block connectors, 22dBm
SCALED OUTPUTS:	1x RGBHV (VGA format) / component HDTV on an HD15F connector; 1 x RGBHV / YPbPr on BNC connectors; 1 x DVI-D on a DVI-I connector; Master Audio Output
MASTER AUDIO OUTPUT:	1 x balanced stereo audio on terminal block connector, 22dBm
OUTPUT RESOLUTIONS:	VGA (640 x 480), SVGA (800 x 600), XGA (1024 x 768), SXGA (1280 x 1024), UXGA (1600 x 1200), 1024 x 852,1024 x 1024, 1366 x 768, 1365 x 1024, 1280 x 720, 720 x 483, 852 x 480, 1400 x 1050, 480p, 720p, and 1080i, as well as a user definable output mode
CONTROL:	Front panel buttons, IR remote control, RS-232, Ethernet; with OSD and front panel LCD
ADDITIONAL CONTROLS:	Freeze, zoom, different selectable vertical refresh rates, ProcAmp control, output image scaling, Picture-In-Picture, text overlay, aspect ratio change, independent volume control of each input and output. Volume, bass, treble, loudness and balance control of master audio output
POWER SOURCE:	100-240 VAC, 50/60Hz 60VA
DIMENSIONS:	19" (W), 9.3" (D), 3RU (H) rack mountable[3]
WEIGHT:	5.5 kg. (12.2 lbs.) approx.
ACCESSORIES:	IR remote control, power cord

1 Go to this URL: http://www.kramerelectronics.com

2 Specifications are subject to change without notice

3 When installing a Kramer machine on a closed or multi-unit rack assembly, be aware that the operating ambient temperature of the rack environment may be greater than room ambient. In particular, take care that there is sufficient air flow. (Refer to the "Operating Conditions.pdf" file on our Web site at http://www.kramerelectronics.com (click "FAQs" in the Technical Support section))

10 VP-725DSA Communication Protocol

Table 20 includes the Communication Protocol:

Set Command: **Y**■Control_Type■Function■Param■CR

Reply Command: **Z**■Control_Type■Function■Param■CR

Example:

1. "Y■ 1■1■32■CR" - set Contrast value as 32
2. "Y■10■5■CR" - get current output resolution

   "Z■10■5■2■CR" - current resolution is 1024x768

Definition:

■ : ASCII Code 0x20

CR : ASCII Code 0xD or 0xA

Table 20: Communication Protocol of the VP-725DSA

Control Type	Function	Param (for Set)	Function Description	Comment
1: Set, 2: Get	0	128~0	Brightness	
1: Set, 2: Get	1	128~0	Contrast	
1: Set, 2: Get	2	-32~32	Aspect Ratio: Letterbox Pan	
1: Set, 2: Get	3	-32~32	Aspect Ratio: 4:3 Output Shift	
1: Set, 2: Get	4	-32~32	H-Zoom	
1: Set, 2: Get	5	-32~32	V-Zoom	
1: Set, 2: Get	6	-32~32	H-Pan	
1: Set, 2: Get	7	-32~32	V-Pan	
1: Set, 2: Get	8	-32~32	Keystone Angle	
1: Set, 2: Get	9	0~255	Graphics H-Position	
1: Set, 2: Get	10	0~255	Graphics V-Position	
1: Set, 2: Get	11	0~128	Graphics Color	
1: Set, 2: Get	12	0~128	Graphics Hue	
1: Set, 2: Get	13	0~16	Graphics Sharpness	
1: Set, 2: Get	14	0~100	Graphics Frequency	
1: Set, 2: Get	15	0~31	Graphics Phase	
1: Set, 2: Get	16	0~128	Video - Color	
1: Set, 2: Get	17	0~128	Video - Hue	
1: Set, 2: Get	18	0~16	Video - Sharpness	
1: Set, 2: Get	19	0~20	Video H-Position	
1: Set, 2: Get	20	0~20	Video V-Position for NTSC/NTSC 4.43/PAL-M/PAL 60	
		0~39	Video V-Position for PAL/PAL-N/SECAM/NTSC 4.43 50	
1: Set, 2: Get	21	0~255	Audio Setting: Treble Level	VP-725DSA only
1: Set, 2: Get	22	0~255	Audio Setting: Bass Level	VP-725DSA only
1: Set, 2: Get	23	0~255	Audio Setting: Balance Level	VP-725DSA only

Control Type	Function	Param (for Set)	Function Description	Comment
1: Set 2: Get	24	0~255	Audio Level: VGA Group Input Level	VP-725DSA only
1: Set 2: Get	25	0~255	Audio Level: DVI Group Input Level	VP-725DSA only
1: Set 2: Get	26	0~255	Audio Level: COMP Group Input Level	VP-725DSA only
1: Set 2: Get	27	0~255	Audio Level: YC Group Input Level	VP-725DSA only
1: Set 2: Get	28	0~255	Audio Level: AV Group Input Level	VP-725DSA only
1: Set 2: Get	29	0~255	Audio Level: VGA Group Output Level	VP-725DSA only
1: Set 2: Get	30	0~255	Audio Level: DVI Group Output Level	VP-725DSA only
1: Set 2: Get	31	0~255	Audio Level: COMP Group Output Level	VP-725DSA only
1: Set 2: Get	32	0~255	Audio Level: YC Group Output Level	VP-725DSA only
1: Set 2: Get	33	0~255	Audio Level: AV Group Output Level	VP-725DSA only
1: Set 2: Get	34	0~255	Audio Level: Master Input Level	VP-725DSA only
1: Set 2: Get	35	0~255	Audio Level: Master Output Level	VP-725DSA only
1: Set 2: Get	36	0~255	Audio Level: Mic Input Level	VP-725DSA only
1: Set 2: Get	37	0~36	PIP Setting: PIP H-Position	
1: Set 2: Get	38	0~36	PIP Setting: V-Position	
7	0	N/A	Gamma/Color - Normal	
7	1	N/A	Gamma/Color - Presentation	
7	2	N/A	Gamma/Color - Cinema	
7	3	N/A	Gamma/Color - Nature	
7	4	N/A	Gamma/Color - User 1	
7	5	N/A	Gamma/Color - User 2	
7	6	N/A	Aspect Ratio - Anamorphic	
7	7	N/A	Aspect Ratio - Virtual Wide	
7	8	N/A	Aspect Ratio - Letterbox	
7	9	N/A	Aspect Ratio - Native	
7	10	N/A	Aspect Ratio - 4:3 Output	
7	11	N/A	Aspect Ratio - User Define	

Control Type	Function	Param(for Set)	Function Description		Comment
3: Set 4: Get	0	0~1	Search	0: Manual 1: Auto	
3: Set 4: Get	1	0~5	SELECT	VP725 DS 0: Video Group 3: Scaler	
				VP725 DSA 0: Video Group 1: Audio Group 2: AV Group 3: Scaler 4: Master Audio 5: Master AV	VP-725DSA only

3: Set 4: Get	2	0~3	Select VGA Group input	0: VGA1 1: VGA2 2: VGA3 3: VGA4	
3: Set 4: Get	3	0~1	Select DVI Group input	0: DVI1 1: DVI2	
3: Set 4: Get	4	0~3	Select COMP Group input	0: COMP1 1: COMP2 2: COMP3 3: COMP4	
3: Set4: Get	5	0~3	Select YC Group input	0: YC11: YC22: YC33: YC4	
3: Set 4: Get	6	0~3	Select AV Group input	0: AV1 1: AV2 2: AV3 3: AV4	
3: Set 4: Get	7	0~4	Aspect Ratio: Native Position	0: Left + Up 1: Right + Up 2: Center 3: Left + Down 4: Right + Down	
3: Set 4: Get	8	0~10	Zoom Ratio	0: 100% 1: 150% 2: 200% 3: 225% 4: 250% 5: 275% 6: 300% 7: 325% 8: 350% 9: 375% 10: 400%	
3: Set 4: Get	9	0~2	Graphics Setting: Color Format	0: Default 1: RGB 2: YUV	
3: Set 4: Get	10	0~2	Video Setting: Color Format	0: Default 1: RGB 2: YUV	
3: Set 4: Get	11	0~6	Video Setting: Video Standard	0: Video Standard - Auto 1: Video Standard - NTSC 2: Video Standard - NTSC 4.43 3: Video Standard - PAL 4: Video Standard - PAL-N 5: Video Standard - PAL-M 6: Video Standard - SECAM	
3: Set 4: Get	12	0~3	Mic Control	0: All Off 1: Override 2: Mix 3: TalkOver	VP-725DSA only
3: Set 4: Get	13	0~1	Audio Setting: Loudness	0:Off, 1:On	VP-725DSA only
3: Set 4: Get	14	0~1	PIP Setting: PIP ON/OFF	0:Off, 1:On	

3: Set4: Get	15	0~17	PIP Setting: PIP Source	0: VGA1 1: VGA2 2: VGA3 3: VGA4 4: DVI1 5: DVI2 6: COMP1 7: COMP2 8: COMP3 9: COMP4 10: YC1 11: YC2 12: YC3 13: YC4 14: AV1 15: AV2 16: AV3 17: AV4	
3: Set 4: Get	16	0~4	PIP Setting: PIP Size	0: 1/25 1: 1/16 2: 1/9 3: 1/4 4: Split	
3: Set 4: Get	17	0~2	Seamless Switch	0: Fast 1: Moderate 2: Safe	
3: Set 4: Get	18	0~1	OSD Setting: Source Prompt	0:Off, 1:On	
3: Set 4: Get	19	0~1	OSD Setting: Blank Color	0:Blue, 1:Black	
3: Set 4: Get	20	0~2	Output Color Format	0: Default 1: RGB 2: YUV	
3: Set 4: Get	21	0~1	Factory Reset	0:Cancel, 1:OK	
0	0	N/A	Freeze		
0	1	N/A	OSD ON		
0	2	N/A	Power		
0	3	N/A	AV1		
0	4	N/A	AV2		
0	5	N/A	AV3		
0	6	N/A	AV4		
0	7	N/A	YC1		
0	8	N/A	YC2		
0	9	N/A	YC3		
0	10	N/A	YC4		
0	11	N/A	COMP1		
0	12	N/A	COMP2		
0	13	N/A	COMP3		
0	14	N/A	COMP4		
0	15	N/A	VGA1		
0	16	N/A	VGA2		
0	17	N/A	VGA3		
0	18	N/A	VGA4		
0	19	N/A	DVI1		
0	20	N/A	DVI2		
0	21	N/A	Override		VP-725DSA only
0	22	N/A	Mix		VP-725DSA only

0	23	N/A	TalkOver		VP-725DSA only
0	24	N/A	SELECT		
0	25	N/A	Video Group		
0	26	N/A	Audio Group		VP-725DSA only
0	27	N/A	Scaler		
0	28	N/A	Master Audio		VP-725DSA only
0	29	N/A	Audio Level		VP-725DSA only
0	30	N/A	Audio Level - Line		VP-725DSA only
0	31	N/A	Audio Level - Mic		VP-725DSA only
0	32	N/A	Audio Level - Out		VP-725DSA only
0	33	N/A	Auto Image		
0	34	N/A	Auto Gain		
0	35	N/A	Menu		
0	36	N/A	Up		
0	37	N/A	Left		
0	38	N/A	Enter		
0	39	N/A	Right		
0	40	N/A	Down		
0	41	N/A	PIP		
0	42	N/A	Swap		
0	43	N/A	Contrast		
0	44	N/A	Brightness		
0	45	N/A	Zoom+		
0	46	N/A	Zoom-		
0	47	N/A	Volume+		VP-725DSA only
0	48	N/A	Volume-		VP-725DSA only
0	49	N/A	Mute		
0	50	N/A	OUT		
0	51	N/A	Aspect Ratio		
8	0	N/A	VGA/DVI/COMP Resolution/Refresh Rate		Example: "Y 8 0 CR" return: "Z 8 0 1080i CR"
9: Set 10: Get	0	0~1	Power	0: Power Down 1: Power On	
9: Set 10: Get	1	0~1	Freeze	0: Off 1: On	
9: Set 10: Get	2	0~1	Mute	0: Off 1: On	VP-725DSA only
9: Set 10: Get	3	0~1	Blank	0: Off 1: On	
9: Set 10: Get	4	0~1	Key Lock	0: Off 1: On	

9: Set 10: Get	5	0~26	Output Resolution	0: 640x480 1: 800x600 2: 1024x768 3: 1280x1024 4: 1600x1200 5: 852x1024i 6: 1024x1024i 7: 1366x768 8: 1365x1024 9: 1280x720 10: 720x483 11: 852x480 12: 1400x1050 13: 480P 14: 720P 15: 1080i 16: 576P 17: 720x400 18: 832x624 19: 1024x800 20: 1152x864 21: 1152x870 22: 1152x900 23: 1280x960 24: 1280x768 25: 1024x576 26: User Define	
9: Set 10: Get	6		Output Refresh Rate	0: 60Hz 1: 75Hz 2: 85Hz 3: 70Hz 4: 84Hz 5: 66Hz 6: 76Hz 7: 50Hz 8: 72Hz	
9: Set 10: Get	7	0~17	Master Source	0: VGA1 1: VGA2 2: VGA3 3: VGA4 4: DVI1 5: DVI2 6: COMP1 7: COMP2 8: COMP3 9: COMP4 10: YC1 11: YC2 12 : YC3 13: YC4 14 : AV1 15 : AV2 16 : AV3 17 : AV4	

LIMITED WARRANTY

Kramer Electronics (hereafter *Kramer*) warrants this product free from defects in material and workmanship under the following terms.

HOW LONG IS THE WARRANTY

Labor and parts are warranted for three years from the date of the first customer purchase.

WHO IS PROTECTED?

Only the first purchase customer may enforce this warranty.

WHAT IS COVERED AND WHAT IS NOT COVERED

Except as below, this warranty covers all defects in material or workmanship in this product. The following are not covered by the warranty:

1. Any product which is not distributed by Kramer, or which is not purchased from an authorized Kramer dealer. If you are uncertain as to whether a dealer is authorized, please contact Kramer at one of the agents listed in the web site www.kramerelectronics.com.
2. Any product, on which the serial number has been defaced, modified or removed.
3. Damage, deterioration or malfunction resulting from:
   i) Accident, misuse, abuse, neglect, fire, water, lightning or other acts of nature
   ii) Product modification, or failure to follow instructions supplied with the product
   iii) Repair or attempted repair by anyone not authorized by Kramer
   iv) Any shipment of the product (claims must be presented to the carrier)
   v) Removal or installation of the product
   vi) Any other cause, which does not relate to a product defect
   vii) Cartons, equipment enclosures, cables or accessories used in conjunction with the product

WHAT WE WILL PAY FOR AND WHAT WE WILL NOT PAY FOR

We will pay labor and material expenses for covered items. We will not pay for the following:

1. Removal or installations charges.
2. Costs of initial technical adjustments (set-up), including adjustment of user controls or programming. These costs are the responsibility of the Kramer dealer from whom the product was purchased.
3. Shipping charges.

HOW YOU CAN GET WARRANTY SERVICE

1. To obtain service on you product, you must take or ship it prepaid to any authorized Kramer service center.
2. Whenever warranty service is required, the original dated invoice (or a copy) must be presented as proof of warranty coverage, and should be included in any shipment of the product. Please also include in any mailing a contact name, company, address, and a description of the problem(s).
3. For the name of the nearest Kramer authorized service center, consult your authorized dealer.

LIMITATION OF IMPLIED WARRANTIES

All implied warranties, including warranties of merchantability and fitness for a particular purpose, are limited in duration to the length of this warranty.

EXCLUSION OF DAMAGES

The liability of Kramer for any effective products is limited to the repair or replacement of the product at our option. Kramer shall not be liable for:

1. Damage to other property caused by defects in this product, damages based upon inconvenience, loss of use of the product, loss of time, commercial loss; or:
2. Any other damages, whether incidental, consequential or otherwise. Some countries may not allow limitations on how long an implied warranty lasts and/or do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations and exclusions may not apply to you.

This warranty gives you specific legal rights, and you may also have other rights, which vary from place to place.

NOTE: All products returned to Kramer for service must have prior approval. This may be obtained from your dealer.

This equipment has been tested to determine compliance with the requirements of:

EN-50081:	"Electromagnetic compatibility (EMC);
	generic emission standard.
	Part 1: Residential, commercial and light industry"
EN-50082:	"Electromagnetic compatibility (EMC) generic immunity standard.
	Part 1: Residential, commercial and light industry environment".
CFR-47:	FCC Rules and Regulations:
	Part 15: "Radio frequency devices
	Subpart B – Unintentional radiators"

CAUTION!

- ⌧ Servicing the machines can only be done by an authorized Kramer technician. Any user who makes changes or modifications to the unit without the expressed approval of the manufacturer will void user authority to operate the equipment.
- ⌧ Use the supplied DC power supply to feed power to the machine.
- ⌧ Please use recommended interconnection cables to connect the machine to other components.

For the latest information on our products and a list of Kramer distributors, visit our Web site: www.kramerelectronics.com. Updates to this user manual may be found at http://www.kramerelectronics.com/manuals.html. We welcome your questions, comments and feedback.

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