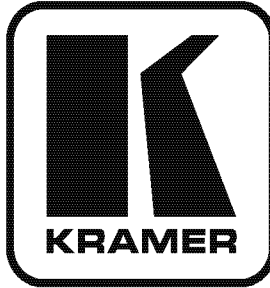


**Kramer Electronics, Ltd.**



# **USER MANUAL**

**Model:**

**VP-725XLA**

*Presentation Switcher / Scaler*

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## 1 Introduction

Welcome to Kramer Electronics! Since 1981, Kramer Electronics has been providing a world of unique, creative, and affordable solutions to the vast range of problems that confront the video, audio, presentation, and broadcasting professional on a daily basis. In recent years, we have redesigned and upgraded most of our line, making the best even better! Our 1,000-plus different models now appear in 11 groups<sup>1</sup> that are clearly defined by function.

Congratulations on purchasing your Kramer **VP-725XLA** *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-725XLA** *Presentation Switcher / Scaler*
- Power cord<sup>2</sup>
- Infrared remote control transmitter (including the required battery)
- Null-modem adapter, rack “ears” and this user manual<sup>3</sup>

## 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<sup>4</sup>

### 2.1 Quick Start

This quick start chart summarizes the basic setup and operation steps.

---

1 GROUP 1: Distribution Amplifiers; GROUP 2: Switchers and Matrix Switchers; GROUP 3: Control Systems; GROUP 4: Format/Standards Converters; GROUP 5: Range Extenders and Repeaters; GROUP 6: Specialty AV Products; GROUP 7: Scan Converters and Scalers; GROUP 8: Cables and Connectors; GROUP 9: Room Connectivity; GROUP 10: Accessories and Rack Adapters; GROUP 11: Sierra Products

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

3 Download up-to-date Kramer user manuals at <http://www.kramerelectronics.com>

4 The complete list of Kramer cables is on our Web site at <http://www.kramerelectronics.com>

**Step 1: Mount the machine - see section 5**

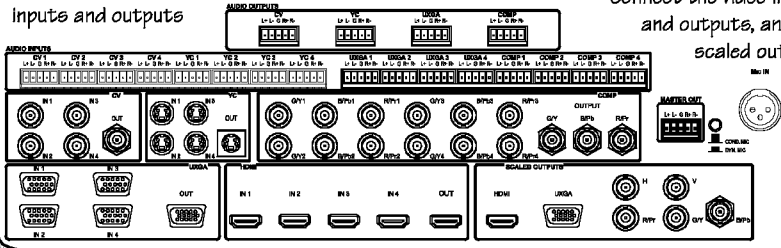
Mount the machine in a rack  
or stick the 4 rubber feet  
to the underside



**Step 2: Connect the Inputs and outputs - see section 6**

Connect the audio  
inputs and outputs

Connect the video inputs  
and outputs, and the  
scaled outputs

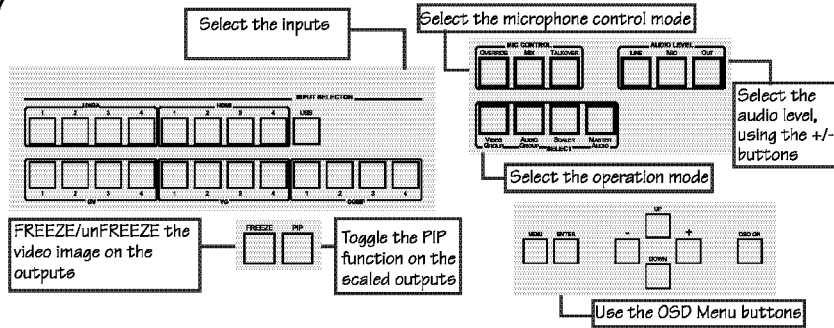


**Step 3: Connect the control port - see section 6**

If needed, connect an RS-232 Control Port, and/or the ETHERNET Port

**Step 4: Turn the power ON**

**Step 5: Set the machine - see section 7**



Operate via the OSD menu



**Step 6: Operate the machine - see section 8**

Operate via the front panel buttons, LCD, OSD, Ethernet IR remote control and/or RS-232

### 3 Overview

The **VP-725XLA** is a presentation scaler/switcher with multiple signal format sections and balanced stereo audio. The unit has five independent 4x1 video sections: composite, s-Video (Y/C), component (RGB), computer graphics, and HDMI, plus a single USB input. Each section can be operated as an individual switcher contained in one box. It also scales any of the 21 inputs up or down to a selectable graphics or HDTV output resolution and provides glitch-free switching between sources through FTB™ (fade-thru-black) switching technology.

The **VP-725XLA**:

- Features Silicon Optix HQV® Video Processing - (Hollywood Quality Video) which represents the state-of-the-art in video processing technology, with the highest quality de-interlacing, noise reduction, and scaling performance for both standard-definition and high-definition signals
- Features high-quality 3:2 and 2:2 pull down, de-interlacing and full up- and down-scaling of computer graphics video input signals<sup>1</sup>
- Is HDTV Compatible and HDCP compliant<sup>2</sup>
- Includes Fade-Thru-Black (FTB™) Switching – the video fades to black and then the new input fades from black for smooth, glitch-free switching. The output signal provides constant sync so the display never glitches
- Features K-IIT XL™ Picture-in-Picture Image Insertion Technology – ultra stable picture-in-picture, picture-and-picture, and split screen capability. Any video source can be inserted into or positioned next to a computer graphics video source or vice versa with window positioning and sizing controls<sup>3</sup>
- Supports Multi-Formats – Auto, NTSC (3.58/4.43), PAL (M/N/60) and SECAM
- Includes scaled computer and HDTV outputs – a single output signal in three formats (15-pin HD (UXGA), RGBHV, and HDMI) simultaneously
- Includes HDTV output resolutions – 720p, 1080i, and 1080p
- Has a USB front panel port for reading and displaying JPEG picture files
- Features multiple color space – RGB or YUV output
- Supports embedded audio on the HDMI inputs and outputs<sup>4</sup>

---

1 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))

2 The HDCP (High Definition Content Protection) license agreement allows only copy-protected data on the HDMI input to pass to the HDMI output

3 See section 7.4

4 The embedded audio feature is not available for the 1920x1200 and 1920x1080 computer resolutions

In addition, the **VP-725XLA**:

- Features Projector Anywhere™ technology – horizontal and vertical geometry controls that compensate for off-axis projector placement
- Supports a wide choice of computer graphics output resolutions up to WUXGA/1080p, plus user-definable custom output resolutions<sup>1</sup> with selectable refresh rates
- Provides multiple aspect ratio selections: standard, letterbox, follow output, virtual wide, follow input, and user definable settings
- Features six possible operation modes via the Video Group<sup>2</sup>, the Audio Group<sup>3</sup>, the Scaler<sup>4</sup>, and the Master Audio<sup>5</sup> buttons. These modes function simultaneously and independently, letting you switch the audio and video signals separately (breakaway mode) or in the audio-follow-video mode
- Includes an independent Master Audio output that has a rich set of ProcAmp features, including bass and treble controls (via the MENU, LCD status display, OSD, RS-232 and the infrared remote control transmitter)
- Features an adjustable volume on each input and output
- Includes a microphone input that can be used by mixing, switching or talk-over
- Includes built-in ProcAmp: color, hue, sharpness, contrast, and brightness are set individually for each input
- Features a built-in TBC (time base corrector) that stabilizes the sync in unstable video sources
- A slideshow feature, letting you run a slideshow via the USB port
- Features front panel freeze frame
- Features video blanking, with a selectable blue or black screen
- Enables screenshot capture
- Scales and zooms (to up to 400% of the original size)
- Can be firmware upgraded in the field via the USB port on the front panel
- Includes worldwide power supply – 100-240V AC on a standard 19” rack mount size, 3U Rack "ears" included
- Has HDMI channel support for up to 2.25Gbps bandwidth per graphic channel<sup>6</sup>

---

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

2 Selects the video input from each group: CV, YC, COMP, UXGA, HDMI for switching to its local (group) output

3 Selects the audio input from each group for switching

4 Converts the selected input (one of 21) to the SCALED OUTPUTS

5 Routes the selected audio input (one of 20) to the MASTER OUT terminal block connector

6 Suitable for resolutions up to UXGA at 60Hz, and for all HD resolutions



Control the **VP-725XLA**:

- From the front panel and a user-friendly menu-driven OSD (see section [8.1](#))
- From the front panel high contrast LCD Display (see section [8.2](#))
- Remotely, from the infrared remote control transmitter (see section [8.3](#))
- Via the Ethernet (see section [8.4](#))
- 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-725XLA** away from moisture, excessive sunlight and dust

### 3.1 About HDMI

High-Definition Multimedia Interface (HDMI) is an uncompressed all-digital<sup>1</sup> audio/video interface, widely supported in the entertainment and home cinema industry. It delivers the maximum high-definition image and sound quality in use today. Note that Kramer Electronics Limited is an HDMI Adopter and an HDCP Licensee.

In particular, HDMI<sup>2</sup>:

- Provides a simple<sup>3</sup> interface between any audio/video source, such as a set-top box, DVD player, or A/V receiver and video monitor, such as a digital flat LCD / plasma television (DTV), over a single lengthy<sup>4</sup> cable
- Supports standard, enhanced, high-definition video, and multi-channel digital audio<sup>5</sup> on a single cable
- Transmits all ATSC HDTV standards and supports 8-channel digital audio, with bandwidth to spare to accommodate future enhancements and requirements
- Benefits consumers by providing superior, uncompressed digital video quality via a single cable<sup>6</sup>, and user-friendly connector
- Is backward-compatible with DVI (Digital Visual Interface)
- Supports two-way communication between the video source (such as a DVD player) and the digital television, enabling new functionality such as automatic configuration and one-button play
- Has the capacity to support existing high-definition video formats (720p, 1080i, and 1080p/60), standard definition formats such as NTSC or PAL, as well as 480p and 576p

## 4 Your VP-725XLA Presentation Switcher / Scaler

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

---

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

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

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

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

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

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

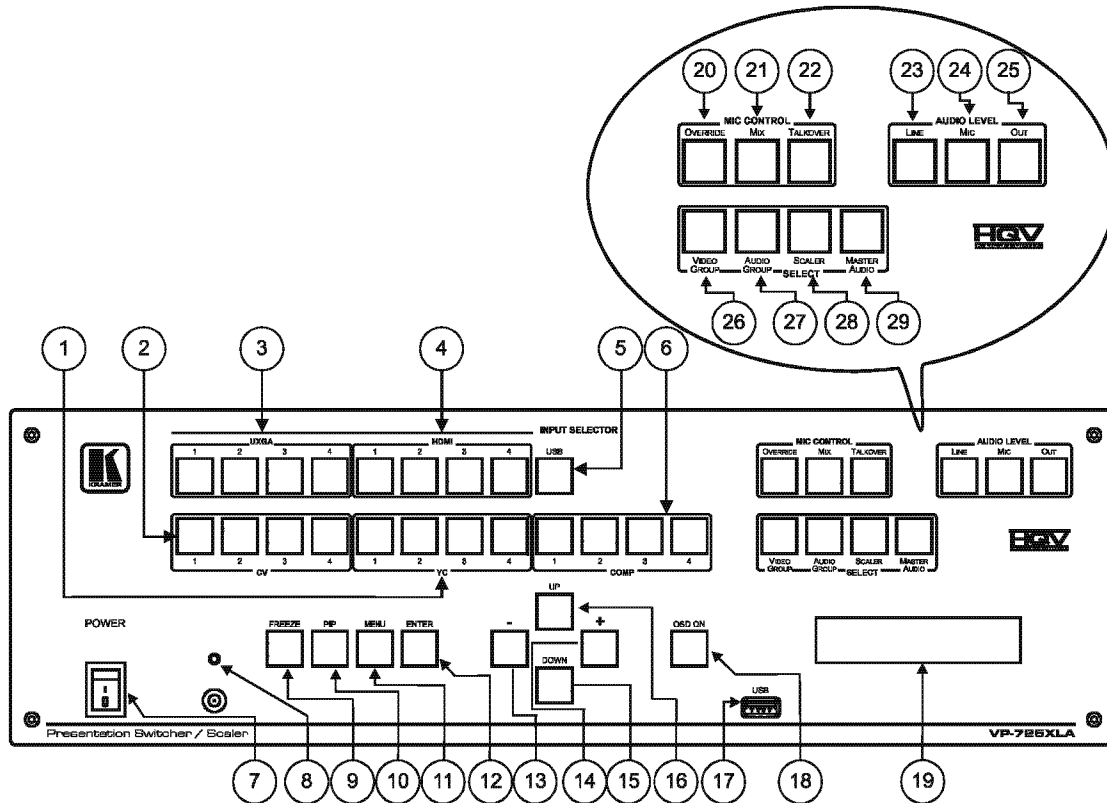


Figure 1: VP-725XLA Presentation Switcher / Scaler Front Panel

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

#	Feature	Function	
1	INPUT SELECTOR Buttons	YC	Selects one of the s-Video (Y/C) sources (from 1 to 4)
2		CV	Selects one of the CV sources (from 1 to 4)
3		UXGA	Selects one of the UXGA sources (from 1 to 4)
4		HDMI	Selects one of the HDMI sources (from 1 to 4)
5		USB	Press to select the USB <sup>1</sup> source and also run/stop the slideshow (see section 8.1.8)
6		COMP	Selects one of the Component video sources (from 1 to 4)
7	POWER Switch	Illuminated switch for turning the unit ON or OFF	
8	IR Receiver / LED	Green when ON; red when OFF <sup>2</sup>	
9	FREEZE Button	Freezes the output video image <sup>3</sup> , as well as pause the slideshow (see section 8.1.8)	
10	PIP Button	Selects the picture-in-picture function <sup>3,4</sup>	
11	MENU Button	Displays the OSD Menu screen (or returns to the previous level in the OSD screen)	
12	ENTER Button	Moves to the next level in the OSD screen <sup>3</sup> Press for about 5 seconds to lock/unlock the front panel buttons	
13	- Button	Decreases the range by one step <sup>3</sup> Decreases the volume level, when not in the OSD menu	
14	+ Button	Increases the range by one step <sup>3</sup> Increases the volume level, when not in the OSD menu	
15	DOWN Button	Moves down one step (in the same level) in the OSD screen <sup>3</sup> , or moves to the next slide when running a slideshow (see section 8.1.8)	
16	UP Button	Moves up one step (in the same level) in the OSD screen <sup>3</sup> , or moves to the previous slide when running a slideshow (see section 8.1.8)	
17	USB Connector	Connect to a USB drive to read JPEG files	
18	OSD ON Button	Activates/deactivates access to the OSD Menu <sup>3, 5</sup>	
19	LCD STATUS Display	Displays the status	
20	MIC CONTROL <sup>6</sup> Button	OVERRIDE <sup>7</sup>	Routes the signal from the microphone to the Master output instead of from the Line, whose signal is blocked
21		MIX <sup>7</sup>	Routes the combined signals from the Mic and the Line to the Master output

1 JPEG files on a USB memory stick, up to a maximum size of 2048x1536

2 OFF in this case means that the outputs and the front-panel are disabled

3 Applicable to the Scaler outputs only

4 See section 7.4

5 The OSD ON front panel button is activated (illuminated) by default, and pressing the MENU front panel button (or the MENU key on the infrared remote control transmitter (see Figure 2.7)) displays the OSD Menu. To block display of the OSD menu, press the OSD ON front panel button (or the OSD key). This deselects the OSD ON front panel button (which is no longer illuminated). The front panel LCD operates independently of the OSD, for example, when the OSD is OFF, the LCD is still operational

6 Only one of the group buttons can be ON, or all 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)

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

#	Feature		Function
22		TALKOVER <sup>7</sup>	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)
23	AUDIO LEVEL <sup>1</sup> Button	LINE	Press this button and adjust the audio level using the -/+ buttons (see section 7.3.1). The level is displayed in the LCD Display and OSD
24		MIC	
25		OUT <sup>2</sup>	
26	SELECT <sup>3</sup> Buttons	VIDEO GROUP	Select the Video Group operation mode <sup>4</sup> ; within each group, select which input (from 1 to 4) to switch to the output. The selected input button within each group is illuminated. If the AUDIO GROUP button is also illuminated, the audio follows the video
27		AUDIO GROUP	Press to select the Audio Group mode <sup>4</sup> ; within each group, select the audio input (from 1 to 4) from each group for switching. If the VIDEO GROUP button is also illuminated, the audio follows the video
28		SCALER	Select the Scaler mode <sup>4</sup> : press an input button (1 of 21), to select the input to be scaled at the SCALED OUTPUTS. The selected input button illuminates. If the MASTER AUDIO button is also illuminated, the audio follows the video
29		MASTER AUDIO	Press to select the Master Audio mode <sup>4</sup> : press an input button (1 of 20), to select the audio input to switch to the MASTER OUT terminal block connector. The selected input button illuminates. If the SCALER button is also illuminated, the audio follows the video

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

1 Only one of the group buttons can be ON, or all 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 The VIDEO GROUP and AUDIO GROUP buttons set can be pressed simultaneously or independently; the SCALER and the MASTER OUTPUT buttons set can be pressed simultaneously or independently

4 When selected, this button illuminates

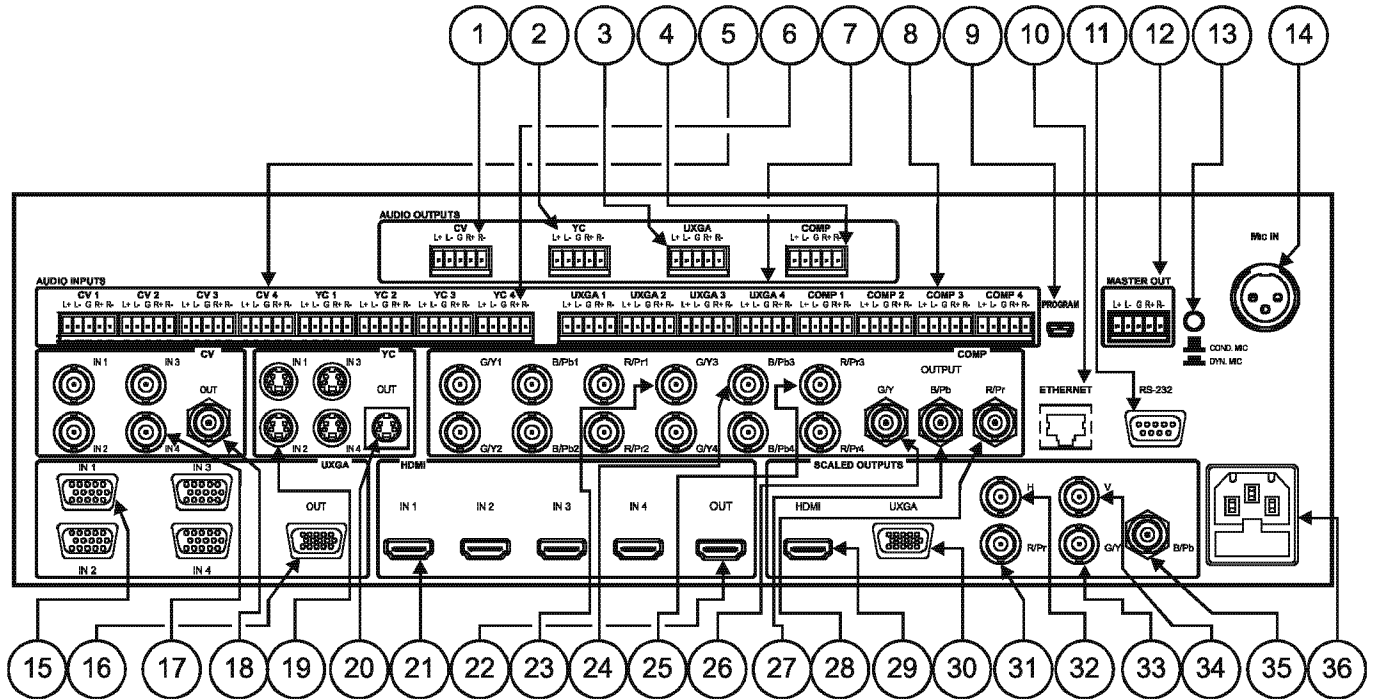


Figure 2: VP-725XLA Presentation Switcher / Scaler Rear Panel

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

#	Feature	Function	
1	<b>AUDIO OUTPUT</b> Terminal Block Connector	<i>CV</i> Connects to the balanced audio acceptor (for composite)	
2		<i>YC</i> Connects to the balanced audio acceptor (for s-Video)	
3		<i>UXGA</i> Connects the balanced audio acceptor (for UXGA)	
4		<i>COMP</i> Connects to the balanced audio acceptor (for component)	
5	<b>AUDIO INPUT</b> Terminal Block Connector	<i>CV</i> Connects to the balanced audio sources, from 1 to 4 (for composite)	
6		<i>YC</i> Connects to the balanced audio sources, from 1 to 4 (for s-Video)	
7		<i>UXGA</i> Connects to the balanced audio sources, from 1 to 4 (for UXGA)	
8		<i>COMP</i> Connects to the balanced audio sources, from 1 to 4 (for component)	
9	<b>PROGRAM USB Connector</b>	Connect to upgrade to the latest audio firmware	
10	<b>ETHERNET port</b>	Connects to your LAN <sup>1</sup>	
11	<b>RS-232 9-pin D-sub Connector</b>	Connects to a PC or Serial Controller	
12	<b>MASTER OUT Terminal Block Connector</b>	Connects to the routed balanced audio channel	
13	<b>COND. MIC / DYN. MIC Button</b>	Pushed in selects a dynamic microphone, released selects a condenser microphone	
14	<b>MIC IN XLR Connector</b>	Connects to the microphone	
15	<b>UXGA IN 15-pin HD Connectors</b>	Connects to the UXGA (analog interface) graphics sources (from 1 to 4)	
16	<b>UXGA OUT 15-pin HD Connector</b>	Connects to the UXGA (analog interface) graphics acceptor	
17	<b>CV IN BNC Connectors</b>	Connects to the composite video sources (from 1 to 4)	
18	<b>CV OUT BNC Connector</b>	Connects to the composite video acceptor	
19	<b>YC IN 4-pin Connectors</b>	Connects to the s-Video (Y/C) sources (from 1 to 4)	
20	<b>YC OUT 4-pin Connector</b>	Connects to the s-Video (Y/C) acceptor	
21	<b>HDMI IN Connectors</b>	Connects to the HDMI sources (from 1 to 4)	
22	<b>HDMI OUT Connector</b>	Connects to the HDMI acceptor	
23	<b>COMP Input BNC Connector</b>	<i>G/Y</i>	
24		<i>B/Pb</i>	
25		<i>R/Pr</i>	
26	<b>COMP OUTPUT BNC Connector</b>	<i>G/Y</i>	
27		<i>B/Pb</i>	
28		<i>R/Pr</i>	
29	<b>SCALED OUTPUTS</b>	<b>HDMI Connector</b> Connects to the HDMI acceptor	
30		<b>UXGA 15-pin HD Connector</b> Connects to the UXGA (analog interface) graphics acceptor	
31		<b>BNC Connector</b>	<i>R/Pr</i>
32			<i>H</i>
33			<i>G/Y</i>
34			<i>V</i>
35	<i>B/Pb</i>		
36	<b>Power Connector with FUSE</b>	AC connector enabling power supply to the unit	

<sup>1</sup> 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 Installing in a Rack

This section provides instructions for rack mounting the unit.

### Before Installing in a Rack

Before installing in a rack, be sure that the environment is within the recommended range:

Operating temperature range	+5° to +45° C (41° to 113° F)
Operating humidity range	10 to 90% RHL, non-condensing
Storage temperature range	-20° to +70° C (-4° to 158° F)
Storage humidity range	5 to 95% RHL, non-condensing



### CAUTION!

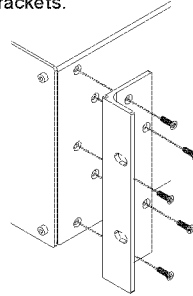
When installing on a 19" rack, avoid hazards by taking care that:

1. It is located within the recommended environmental conditions, as the operating ambient temperature of a closed or multi unit rack assembly may exceed the room ambient temperature.
2. Once rack mounted, enough air will still flow around the machine.
3. The machine is placed straight in the correct horizontal position.
4. You do not overload the circuit(s). When connecting the machine to the supply circuit, overloading the circuits might have a detrimental effect on overcurrent protection and supply wiring. Refer to the appropriate nameplate ratings for information. For example, for fuse replacement, see the value printed on the product label.
5. The machine is earthed (grounded) in a reliable way and is connected only to an electricity socket with grounding. Pay particular attention to situations where electricity is supplied indirectly (when the power cord is not plugged directly into the socket in the wall), for example, when using an extension cable or a power strip, and that you use only the power cord that is supplied with the machine.

### How to Rack Mount

To rack-mount a machine:

1. Attach both ear brackets to the machine. To do so, remove the screws from each side of the machine (5 on each side), and replace those screws through the ear brackets.



2. Place the ears of the machine against the rack rails, and insert the proper screws (not provided) through each of the four holes in the rack ears.

Note:

- In some models, the front panel may feature built-in rack ears
- Detachable rack ears can be removed for desktop use
- Always mount the machine in the rack before you attach any cables or connect the machine to the power
- If you are using a Kramer rack adapter kit (for a machine that is not 19"), see the Rack Adapters user manual for installation instructions (you can download it from <http://www.kramerelectronics.com>)



## 6 Connecting the VP-725XLA Presentation Switcher / Scaler

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

- **VP-725XLA** rear panel (see this section [6.1](#))
- Interlaced and progressive RGBS and RGsB inputs (see section [6.2](#))
- PC (see section [6.3](#))
- Ethernet port (see section [6.4](#))
- Audio inputs/outputs (see section [6.5](#))

Using the **VP-725XLA** you can select any one of the 21 inputs and scale that input to up to three scaled outputs (at the identical resolution).

### 6.1 Connecting the VP-725XLA

To connect the **VP-725XLA**, connect the following<sup>1</sup> to the rear panel, as the example in [Figure 3](#) illustrates:

1. Connect one or more of the following video sources:
  - Up to four UXGA graphics sources (for example, computers) to the 15-pin HD input connectors<sup>2</sup>
  - Up to four composite video sources (for example, DVD players) to the BNC input connectors
  - Up to four s-Video sources to the 4-pin input connectors (not illustrated in [Figure 3](#))
  - Up to four component video<sup>3</sup> (sometimes called YUV, or Y, B-Y, R-Y, or Y, Pb/Cb, Pr/Cr) sources or four RGB sources to the four sets of 3 BNC connectors, G/Y, B/Pb, and R/Pr.
  - Up to four HDMI sources (for example, DVD players) to the HDMI connectors

---

<sup>1</sup> Switch OFF the power on each device before connecting it to your VP-725XLA. After connecting your VP-725XLA, switch on its power and then switch on the power on each device

<sup>2</sup> These connectors also accept interlaced and progressive RGBS and RGsB signals (see [Table 3](#))

<sup>3</sup> For example, an HDTV satellite receiver to COMP IN 1 and an RGB camera connected to COMP IN 4

2. Connect one or more of the following balanced stereo audio sources<sup>1</sup>:
  - UXGA sources 1 to 4 to the UXGA AUDIO INPUT terminal block connectors (from 1 to 4)
  - CV sources 1 to 4 to the CV AUDIO INPUT terminal block connectors (from 1 to 4)
  - s-Video sources 1 to 4 to the YC AUDIO INPUT terminal block connectors (from 1 to 4)
  - Component video/ RGB sources 1 to 4 to the COMP AUDIO INPUT terminal block connectors (from 1 to 4)
3. Connect a microphone to the Mic IN XLR connector<sup>1</sup>, and push in or release the Dyn / Con switch as appropriate (see item 13 in [Table 2](#)).
4. Connect the CV OUT BNC connector and the UXGA OUT 15-pin HD connector to the respective video inputs on a projector. Connect the respective AUDIO OUTPUT terminal block connectors (CV and UXGA) to balanced audio acceptors (for example, audio amplifiers<sup>1</sup>).
5. Connect the COMP OUTPUT BNC connectors: G/Y, B/Pb, and R/Pr to the respective component video inputs on an LCD display.
6. Connect up to three SCALED OUTPUTS, as follows:
  - Connect the RGBHV connectors (H, V, R/Pr, G/Y, and B/Pb) to the RGBHV acceptor (for example, a projector)
  - Connect the HDMI connector to the HDMI acceptor (for example, an LCD display)
  - Connect the UXGA connector to the UXGA acceptor<sup>1</sup>
7. 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<sup>1</sup>.
8. Connect the power cord<sup>1,2</sup>.
9. Connect a PC (optional), see section [6.3](#).
10. Connect the Ethernet port (optional), see section [6.4](#).

---

<sup>1</sup> Not illustrated in [Figure 3](#)

<sup>2</sup> We recommend that you use only the power cord that is supplied with this machine

Connecting the VP-725XLA Presentation Switcher / Scaler

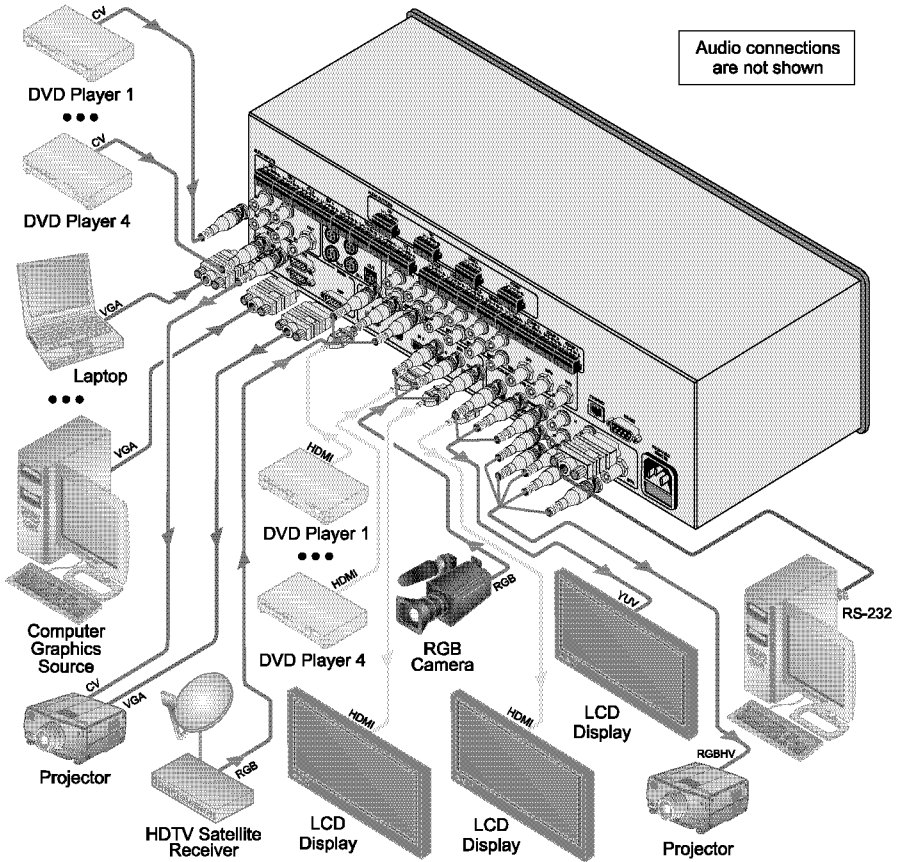


Figure 3: Connecting the VP-725XLA Presentation Switcher / Scaler

## 6.2 The RGBS and RGsB PINOUTS

Table 3 defines the input progressive<sup>1</sup> and interlaced<sup>2</sup> RGBS and RGsB pinouts:

*Table 3: RGBS and RGsB PINOUTS*

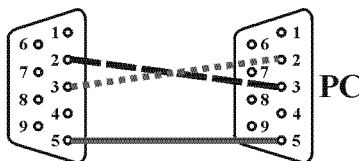
Input	Color Space	PINOUT
VGA	RGsB	Red to PIN 1 Green + sync, to PIN 2 Blue to PIN 3
	RGBS	Red to PIN 1 Green to PIN 2 Blue to PIN 3 Hs (H and V) to PIN 13
YUV	YPbPr	Green + sync to Y Blue to Pb Red to Pr

## 6.3 Connecting to the VP-725XLA via RS-232

You can connect to the unit via a crossed RS-232 connection, using for example, a PC. A crossed cable or null-modem is required as shown in method A and B respectively. If a shielded cable is used, connect the shield to pin 5.

**Method A** (Figure 4)—Connect the RS-232 9-pin D-sub port on the unit via a crossed cable (pin 2 to pin 3, pin 3 to pin 2, and pin 5 to pin 5) to the RS-232 9-pin D-sub port on the PC.

**Note:** There is no need to connect any other pins.



*Figure 4: Crossed Cable RS-232 Connection*

Hardware flow control is not required for this unit. In the rare case where a controller requires hardware flow control, short pin 1 to 7 and 8, and pin 4 to 6 on the controller side.

**Method B** (Figure 5)—Connect the RS-232 9-pin D-sub port on the unit via a straight (flat) cable to the null-modem adapter, and connect the null-modem adapter to the RS-232 9-pin D-sub port on the PC. The straight cable usually

<sup>1</sup> A display mode in which all the horizontal lines of an image are displayed in a single frame (one field)

<sup>2</sup> A display mode in which a frame consists of two separate fields with the first field consisting of odd horizontal lines and the second field even horizontal lines

contains all nine wires for a full connection of the D-sub connector. Because the null-modem adapter (which already includes the flow control jumpering described in Method A above) only requires pins 2, 3 and 5 to be connected, you are free to decide whether to connect only these 3 pins or all 9 pins.

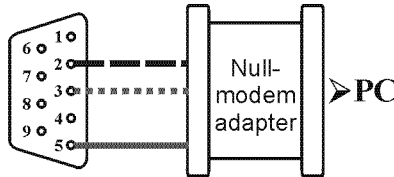


Figure 5: Straight Cable RS-232 Connection with a Null Modem Adapter

## 6.4 Connecting the VP-725XLA via the Ethernet port

You can connect the **VP-725XLA** via the Ethernet, using a crossover cable (see section [6.4.1](#)) for direct connection to the PC or a straight through cable (see section [6.4.2](#)) for connection via a network hub or network router.

See section [8.4](#) for Ethernet configuration.

### 6.4.1 Connecting the Ethernet Port directly to a PC (Crossover Cable)

You can connect the Ethernet port of the **VP-725XLA** to the Ethernet port on your PC, via a crossover cable with RJ-45 connectors.

This type of connection is recommended for identification of the factory default IP Address of the **VP-725XLA** during the initial configuration

After connecting the Ethernet port, configure your network card as follows:

1. Right-click the My Network Places icon on your desktop.
2. Select Properties and right-click Local Area Connection Properties.
3. Select Properties.  
The Local Area Connection Properties window appears.
4. Select **Internet Protocol (TCP/IP)** and click the Properties Button (see [Figure 6](#)).

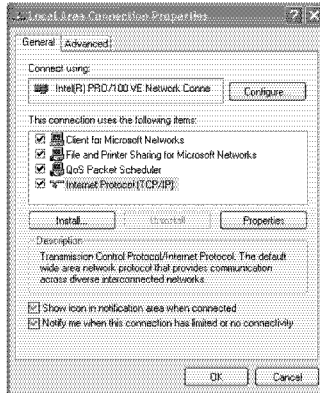


Figure 6: Local Area Connection Properties Window

5. Select **Use the following IP Address**<sup>1</sup>, and fill in the details as shown in [Figure 7](#).

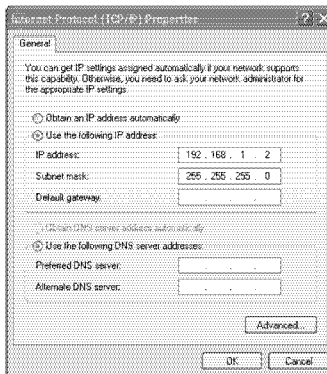


Figure 7: Internet Protocol (TCP/IP) Properties Window

6. Click OK.

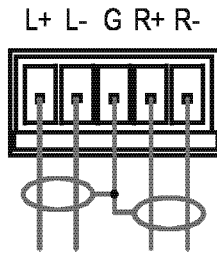
### 6.4.2 Connecting the Ethernet Port via a Network Hub (Straight-Through Cable)

You can connect the Ethernet port of the **VP-725XLA** to the Ethernet port on a network hub or network router, via a straight-through cable with RJ-45 connectors.

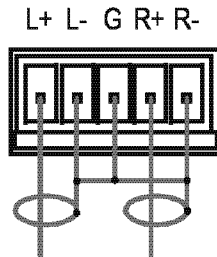
<sup>1</sup> This IP address is compatible with the factory default IP address of the unit

## 6.5 Connecting the Balanced/Unbalanced Stereo Audio Input/Output

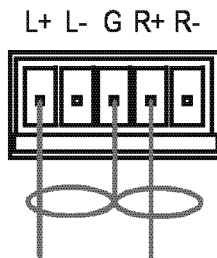
Figure 8, Figure 9, and Figure 10 illustrate how to wire a balanced/unbalanced input and/or output connection:



*Figure 8: Connecting a Balanced Stereo Audio Input/Output*



*Figure 9: Connecting an Unbalanced Stereo Audio Input*



*Figure 10: Connecting an Unbalanced Stereo Audio Output*

## 7 Operating the VP-725XLA Presentation Switcher / Scaler

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

- A set of 21 INPUT SELECTOR buttons
- A set of Video Group and Audio Group SELECT buttons<sup>1</sup> as well as Scaler Mode and Master Audio buttons<sup>2</sup>
- A FREEZE button
- A PIP button
- A set of 7 OSD buttons (described in [Table 1](#)): OSD ON, MENU, ENTER, -, +, UP, and DOWN

This section describes how to:

- Use the different operating modes (see section [7.1](#))
- Switch an input to an output (see section [7.2](#))
- Understand the audio features (section [7.3](#))
- Use the PIP feature (see section [7.4](#))
- Lock and unlock the front panel buttons (see section [7.5](#))
- Freeze the image (see section [7.6](#))
- Display a blank screen (see section [7.7](#))

### 7.1 Using the Operating Modes

The **VP-725XLA** operates as five independent 4x1 switchers<sup>3</sup> and as a scaler that switches one of the 21 inputs to the scaled outputs. These modes operate simultaneously, as well as independently.

The four buttons in the SELECT area on the front panel let you select one of six operating modes, as defined in [Table 4](#):

---

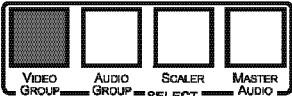
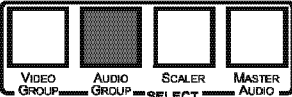
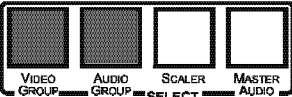
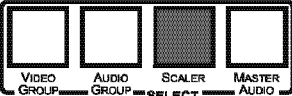
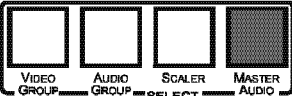
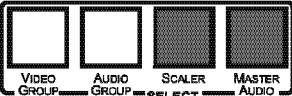
1 The VIDEO GROUP SELECT button selects the video input from each group to switch to its group output

2 The SCALER SELECT button scales the selected video input (one of 21) at each of the SCALED OUTPUTS

3 Composite video, s-Video, component video (RGB or YPbPr), HDMI and UXGA



Table 4: The Operation Modes

Five Independent Switchers		One Scaler		Definition
VIDEO GROUP	AUDIO GROUP	SCALER	MASTER AUDIO	
				<b>Video only:</b> switch the video signal of the input <sup>1</sup> to the output in each of the five Video Groups <sup>2</sup>
				<b>Audio only:</b> switch the audio signal of the video input <sup>1</sup> (from 1 to 4) to the output in each of the five Video Groups <sup>2</sup>
				<b>Video and Audio:</b> switch the video and audio signals of the input <sup>1</sup> to the output in each of the five Video Groups <sup>2</sup>
				<b>Scaler Video only:</b> select one of the 21 video inputs to switch to the scaled outputs
				<b>Master Audio only:</b> select one of the 20 audio inputs <sup>3</sup> to switch to the Master Audio output
				<b>Scaler Video and Master Audio:</b> select one of the 20 audio and video inputs <sup>3</sup> to switch to the scaled outputs and Master Audio output

1 From 1 to 4

2 Composite video, s-Video, component video (RGB or YPbPr), HDMI and UXGA

3 The USB connector does not include an audio signal. However, you can assign an audio signal to the USB signal via the OSD menu (see section 8.1.5)

## 7.2 Switching an Input to an Output

This section describes how to switch an input to an output when the **VP-725XLA** operates as five independent switchers (see section [7.2.1](#)) and when it functions as a scaler (see section [7.2.2](#)).

To switch an input to an output you have to first select the operating mode via the SELECT button and then select the desired inputs via the INPUT SELECTOR buttons.

### 7.2.1 Switching the VP-725XLA as Five Independent Switchers

When operating the **VP-725XLA** as five independent switchers, the selected input in each group is switched to the output of that group.

To operate the **VP-725XLA** as five independent video switchers<sup>1</sup>:

1. Press the VIDEO GROUP button<sup>1</sup>.  
Only the VIDEO GROUP button illuminates.
2. Press an input button to switch to the output for each of the five independent switchers. For example, in the:
  - UXGA group, press INPUT 1
  - HDMI group, press INPUT 1
  - CV group, press INPUT 2
  - YC group, press INPUT 3
  - COMP group, press INPUT 4

To operate the **VP-725XLA** as five independent audio-video switchers:

1. Press both the VIDEO GROUP and the AUDIO GROUP buttons.  
Both buttons illuminate.
2. Press an input button to switch to the output for each of the five independent switchers.  
The Audio follows the video.

### 7.2.2 Switching the VP-725XLA as a Scaler

To operate the **VP-725XLA** as a scaler, press the SCALER button<sup>2</sup> and then switch one of the 21 inputs to the scaled video outputs. If you also press the MASTER AUDIO button, the audio follows the scaled video output.

---

<sup>1</sup> Alternatively, press the AUDIO GROUP button to switch the audio signal only

<sup>2</sup> The button illuminates

When the **VP-725XLA** 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.

## 7.3 Understanding the Audio Features

This section describes:

- Adjusting the audio level (see section [7.3.1](#))
- Using the Microphone CONTROL Modes (see section [7.3.2](#))

### 7.3.1 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.

To adjust the group audio level via the front panel:

1. Press the AUDIO GROUP button.
2. Press the AUDIO LEVEL LINE button to adjust the group audio input level or press the AUDIO LEVEL OUT button to adjust the group audio output level.  
An OSD audio level adjustment box appears on the screen.  
Press the UP and DOWN buttons to scroll through the various groups.
3. Press the + and – buttons to adjust the audio level<sup>1</sup>.

To adjust Master Audio level via the front panel:

1. Press the MASTER AUDIO button.
2. Press the AUDIO LEVEL LINE button to adjust the master audio input level or press the AUDIO LEVEL OUT button to adjust the master audio output level.  
An OSD audio level adjustment box appears on the screen.

Any selected input can have its audio level adjusted either via the MASTER AUDIO mode or the AUDIO GROUP mode and the last setting is maintained even when a different operating mode is selected. The MASTER AUDIO output level and the GROUP AUDIO output level set the master audio output and the group audio output, respectively, as illustrated in the example in [Figure 11](#).

---

<sup>1</sup> Audio level within the group is adjusted for the selected input only. When selecting a different input within the group, that input updates automatically

For example, if CV input 3 audio level is set to 2 in the AUDIO GROUP mode, and then you set it at 5 in the MASTER AUDIO mode, the audio level will still be 5 (not 2) when returning to the AUDIO GROUP mode.

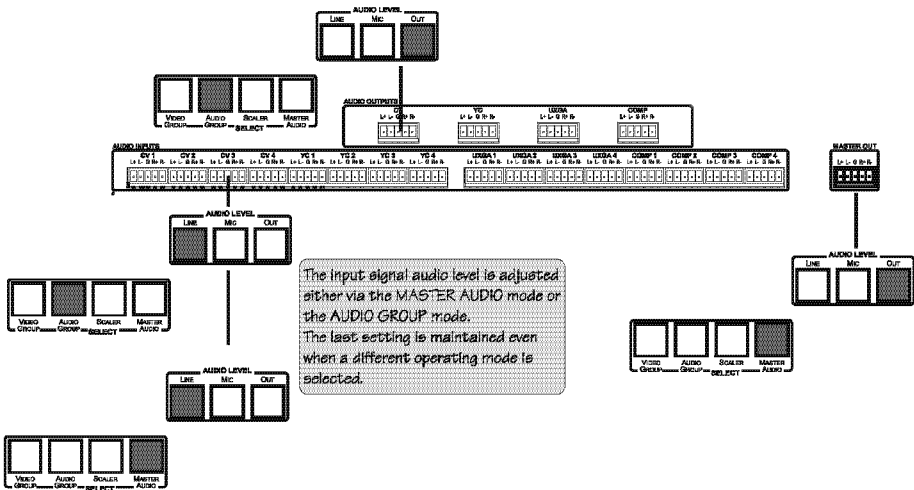


Figure 11: Adjusting the Audio Input and Audio Output Levels

### 7.3.2 Using the Microphone CONTROL Modes

The MIC CONTROL<sup>1</sup> section buttons include these:

- **Override**<sup>2</sup>, that blocks the input signal and enables the microphone input to be routed to the Master output
- **Mix**, that sends the combined signals from the microphone and the line to the Master output
- **Talkover**, that 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)

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

## 7.4 Understanding the PIP Feature<sup>1</sup>

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

- An inserted video source<sup>2</sup> PIP over a graphic source<sup>3</sup>
- An inserted graphic source<sup>3</sup> PIP over a video source<sup>2</sup>

When selecting a PIP source, the Presentation Switcher / Scaler automatically recognizes and can display the selected graphic PIP source on any video source<sup>4</sup> or the selected video source on any graphic<sup>4</sup> source, compliant to [Table 5](#).

*Table 5: PIP Source Appearance Availability*

Main Source	PIP Source				
	VIDEO		GRAPHIC		
	CV	YC	VGA	HDMI	COMP <sup>5</sup>
CV	No	No	Yes	Yes	Yes
YC	No	No	Yes	Yes	Yes
VGA	Yes	Yes	No	No	No
HDMI	Yes	Yes	No	No	No
COMP	Yes	Yes	No	No	No
USB	Yes	Yes	No	No	No

**Activate the PIP Feature by:**

- Pressing the PIP front panel button
- Switching on the PIP functionality via the OSD Menu (see section [8.1.4](#))
- Pressing the PIP key on the remote control transmitter (see section [8.3](#))

**Toggle between the PIP and screen source by:**

- Pressing the SWAP key on the remote control transmitter (see section [8.3](#))

**Resize the PIP by:**

- Using the OSD menu (see section [8.1.4](#))
- Pressing the PIP Size key on the remote control transmitter (see section [8.3](#))

<sup>1</sup> See section [7.4](#)

<sup>2</sup> That is, composite, s-Video

<sup>3</sup> That is, HDMI or UXGA or component

<sup>4</sup> Even if the input signal is not connected. In this case the PIP appears over a blank screen

<sup>5</sup> In this machine COMP is considered a graphic source even in the case where it is at video resolutions

**Move the position of the PIP by:**

- Using the OSD menu (see section [8.1.4](#))

**Choose a new PIP source by:**

- Pressing the "PIP Source" button on the remote control transmitter followed by the button of the desired PIP input
- Pressing and holding down the PIP front panel button and then pressing the button of the desired PIP input (while the PIP button is still pressed)

## 7.5 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.

To lock the front panel:

- Press and hold the ENTER front panel button<sup>1</sup> for about 3 seconds  
The front panel buttons are locked<sup>2</sup> (except for the ENTER button on the front panel)  
The LCD displays: Keypad Lock On

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

- Press and hold the ENTER front panel button for about 3 seconds

## 7.6 Freezing the Image

To freeze the image, press the Freeze key on the infrared remote control transmitter (see [Figure 27](#)) or the FREEZE front panel button.

The image freezes and the FREEZE front panel button illuminates.

The LCD displays: Freeze.

You can define the function of the FREEZE button<sup>3</sup> via the OSD menu (see [Table 16](#)).

## 7.7 Displaying a Blank Screen

To display a blank screen, press the Blank key on the infrared remote control transmitter (see [Figure 27](#)). You can set the blank color to blue or black and also define the function of the Blank key<sup>4</sup> via the OSD menu (see [Table 16](#)).

---

<sup>1</sup> Does not apply to the ENTER key on the infrared remote control transmitter

<sup>2</sup> However, operation via the infrared remote transmitter or RS-232 serial commands (remote controller or PC) and/or ETHERNET is still available

<sup>3</sup> Freeze and mute, freeze or mute

<sup>4</sup> Blank and mute, blank or mute

## 8 Configuring and Controlling the VP-725XLA

This section describes how to configure and control the **VP-725XLA** via the:

- OSD menu (see section [8.1](#))
- LCD display (see section [8.2](#))
- Infrared remote control transmitter (see section [8.3](#))

You can also control the **VP-725XLA** via the Ethernet (see section [8.4](#))

### 8.1 Configuring the VP-725XLA via the OSD MENU Screens

The OSD superimposes a menu on the screen from which you can configure and control each input signal on your **VP-725XLA**, using the MENU, ENTER, -, +, UP and DOWN OSD buttons on the front panel and the remote transmitter.

To use the OSD menus:

1. Select the desired input signal.
2. Use the menu buttons as follows:
  - Press the MENU front panel ON button or the MENU key on the infrared remote control transmitter (see section [8.3](#)) to display the main MENU screen<sup>1</sup>, which displays eight interactive icons<sup>2</sup> (see [Figure 12](#))
  - Press the MENU front panel OSD button or the MENU key on the infrared remote control transmitter to move to the previous level in the OSD screen (Esc)
  - Press the + and – buttons to select menu icons and then press ENTER
  - Use + and – buttons to increase and decrease the (numerical) rate respectively

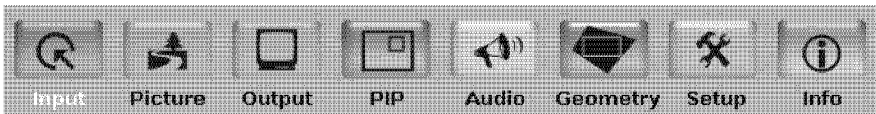


Figure 12: MENU Items

<sup>1</sup> 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) and a numerical range

<sup>2</sup> The Audio menu is not applicable for the VP-725x1

### 8.1.1 The Input Screen

Figure 13 and Table 6 define the Input screen.

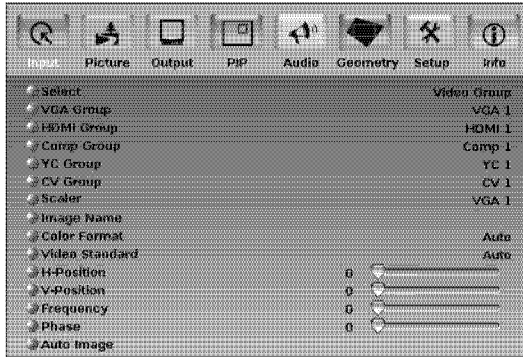


Figure 13: Input Screen

Table 6: Input Screen Functions

Setting	Function	Selection/Range	Default
Select	Select the group	Video Group, Scaler	Scaler
VGA Group	Select the VGA input <sup>1</sup>	From 1 to 4	VGA 1
HDMI Group	Select the HDMI input <sup>1</sup>	From 1 to 4	HDMI 1
Comp Group	Select the Comp input <sup>1</sup>	From 1 to 4	Comp 1
YC Group	Select the YC input <sup>1</sup>	From 1 to 4	YC 1
CV Group	Select the CV input <sup>1</sup>	From 1 to 4	CV 1
Scaler	Select the source to scale (in the Scaler operation mode)	From VGA 1 to VGA 4; from HDMI 1 to HDMI 4; from COMP 1 to COMP 4; from YC 1 to YC 4; from CV 1 to CV 4, and USB	VGA 1
Image Name	Shows the file name <sup>2</sup> that is displayed when the USB port is connected		
Color Format	Select the color format	Auto, RGB or YUV	Auto
Video Standard	Select the video standard	Auto, NTSC, PAL, PAL-M, PAL-N, NTSC 4.43, SECAM or PAL-60	
H-Position	Set the horizontal position <sup>3</sup>	The range changes according to the input mode	Auto
V-Position	Set the vertical position	The range changes according to the input mode	
Frequency	Adjust the frequency <sup>4</sup>	The range changes according to the input mode	
Phase	Adjust the phase	0 to 31	0
Auto image	Assesses the image and improves the quality accordingly, by automatically adjusting the phase, frequency and position. Upon completion, the relevant OSD values are updated (Hpos, Vpos, Phase and Frequency)		

<sup>1</sup> In the Video Group operation mode

<sup>2</sup> Supports JPEG format only. The JPEG file should not exceed a resolution of 2048x1536. If the image file is not within the definition a blank screen appears and the machine displays the message: "File too big" or "File too small" (smaller than 320x240)

<sup>3</sup> For UXGA and component video inputs

<sup>4</sup> For UXGA inputs



### 8.1.2 The Picture Screen

Figure 14 and Table 7 define the Picture screen.

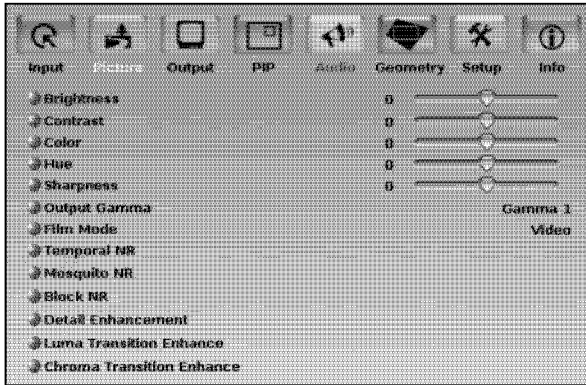


Figure 14: Picture Screen

Table 7: Picture Screen Functions

Setting	Function	Selection/Range	Default
Brightness	Adjust the brightness	-50 to 50	0
Contrast	Adjust the contrast	-50 to 50	0
Color	Adjust the color	-50 to 50	0
Hue	Adjust the hue	-180 to 180	0
Sharpness	Adjust the sharpness	-50 to 50	0
Output Gamma	Adjust the gamma	Gamma 1 to Gamma 5	Gamma 1
Film Mode	Set the film mode	Auto, Video, Film	Auto
Temporal NR <sup>1</sup>	Set the temporal noise reduction level	Off, Low, Medium, High	High
Mosquito NR <sup>1</sup>	Set the Mosquito noise reduction level	Off, Low, Medium, High	Low
Block NR <sup>1</sup>	Set the block noise reduction level	Off, On	Off
Detail Enhancement <sup>1</sup>	Set the detail enhancement	Off, Low, Medium, High	Medium
Luma Transition Enhance <sup>1</sup>	Set the luminance transition enhancement level	Off, Low, High	Low
Chroma Transition Enhance <sup>1</sup>	Set the chrominance transition enhance level	Off, Low, High	Off

<sup>1</sup> You do not have to press ENTER after selecting the desired parameter to change it

### 8.1.3 The Output Screen

Figure 15 and Table 8 define the Output screen.

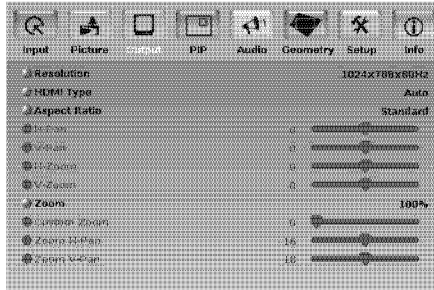


Figure 15: Output Screen

Table 8: Output Screen Functions<sup>1</sup>

Setting	Function	Selection/Range	Default
Resolution <sup>2</sup>	Set the resolution <sup>3</sup>	Native HDMI <sup>4</sup> , 640x480x60Hz, 640x480x75Hz, 800x600x50Hz, 800x600x60Hz, 800x600x75Hz, 1024x768x50Hz, 1024x768x60Hz, 1024x768x75Hz, 1280x768x50Hz, 1280x768x60Hz, 1280x720x60Hz, 1280x800x60Hz, 1280x1024x50Hz, 1280x1024x60Hz, 1280x1024x75Hz, 1366x768x50Hz, 1366x768x60Hz, 1400x1050x50Hz, 1400x1050x60Hz, 1600x1200x50Hz, 1600x1200x60Hz, 1680x1050x60Hz, 1920x1080x60Hz <sup>5</sup> , 1920x1200x60Hz <sup>5</sup> , 480px60Hz, 576px60Hz, 720px50Hz, 720px60Hz, 1080ix50Hz, 1080ix60Hz, 1080px50Hz, 1080px60Hz, 1080p@24Hz or Custom (from 1 to 4) <sup>6</sup>	If Native HDMI is not available, the default is 1024x768@60Hz
HDMI Type	Set the HDMI type	Auto, HDMI, DVI	Auto
Aspect Ratio	Set the aspect ratio	Best Fit <sup>7</sup> , Letterbox, Follow Output <sup>8</sup> , Virtual Wide, Follow Input <sup>9</sup> , Custom	Follow Output
H-Pan <sup>10</sup>	Horizontal pan	-16 to 16	0
V-Pan <sup>10</sup>	Vertical pan	-16 to 16	0
H-Zoom <sup>10</sup>	Horizontal zoom	-8 to 8	0

1 Values may change according to the firmware version (you can download the up-to-date firmware version from our Web site at <http://www.kramerelectronics.com>)

2 For the most up-to-date resolution list, go to our Web site at <http://www.kramerelectronics.com>

3 Any change in the resolution must be confirmed via the count-down message that appears on the screen

4 If the Native HDMI is 1920x1080x60, the preferred mode will be defined as 1920x1080x60 (CEA-861)

5 The embedded audio feature is not available for the 1920x1200 and 1920x1080 resolutions

6 If the custom resolution is set to be the same as the default resolution, the scaler refers to the default resolution

7 The best possible compromise between the input and the output aspect ratios

8 Scales the picture to fill the entire output screen

9 Shows the picture without scaling it (pixel-to-pixel mapping)

10 Available when selecting Custom aspect ratio

Setting	Function	Selection/Range	Default
V-Zoom <sup>10</sup>	Vertical zoom	-8 to 8	0
Zoom	Set the Zoom <sup>1</sup>	100%, 150%, 200%, 225%, 250%, 275%, 300%, 325%, 350%, 375%, 400%, Custom	100%
Custom Zoom <sup>2</sup>	Set the Zoom	From 0 to 32 (this range is equivalent to 100% to 400%)	
Zoom H-Pan <sup>3</sup>		-16 to 16	0
Zoom V-Pan <sup>3</sup>		-16 to 16	0
HQV Color Setting	Color saturation	Adjust RGB and CMY <sup>4</sup> individually (-100 to 100)	

### 8.1.4 The PIP Screen

Figure 16 and Table 9 define the PIP screen.

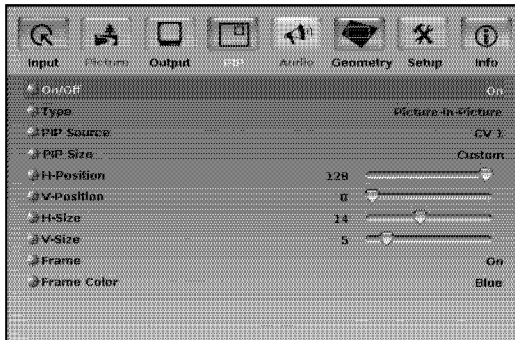


Figure 16: PIP Screen

Table 9: PIP Screen Functions

Setting	Function	Selection/Range	Default
On/Off	Activate/deactivate the PIP feature <sup>5</sup>	On/Off	Off
Type	Select the PIP type	Picture-In-Picture, Picture + Picture <sup>6</sup> or Split	Picture-In-Picture
PIP Source	Select the PIP source <sup>7</sup>	See Table 5	
PIP Size	Select the PIP size	1/25, 1/16, 1/9, 1/4, or Custom	1/4
H-Position	Set the horizontal position of the PIP on the display	0 to 128	3

1 The zoom feature is disabled when the aspect ratio is set to custom or when the PIP feature is on

2 This function is available after setting the Zoom to custom

3 Not available if the zoom is set to 100%

4 CMY means Cyan, Magenta and Yellow

5 When PIP is activated and that input is not connected, the PIP window will appear black. If the zoom function is ON, the OSD prompts "cancel zoom?"

6 Maintains the aspect ratio

7 When changing the PIP source, the display fades through black

Setting	Function	Selection/Range	Default
V-Position	Set the vertical position of the PIP on the display	0 to 128	0
H-Size	Set custom size <sup>1</sup>	1 to 255	14
V-Size	Set custom size <sup>1</sup>	1 to 255	5
Frame	Turn the PIP frame on or off	On/Off	On
Frame Color	Select the color of the PIP frame	Red, Green or Blue	Blue

### 8.1.5 The Audio Screen

Figure 17 and Table 10 define the Audio screen.

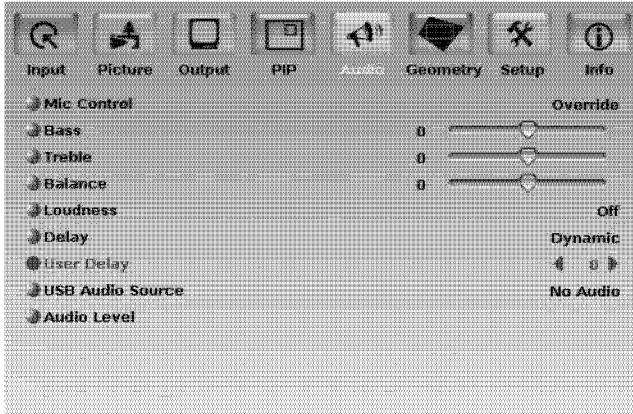


Figure 17: Audio Screen

Table 10: Audio Screen Functions

Setting	Function	Selection/Range	Default
Mic Control	Set the microphone control mode	All off, Override, Mix, Talkover	All off
Bass	Adjust the bass	-40 to 40	0
Treble	Adjust the treble	-40 to 40	0
Balance	Adjust the balance	-25 to 25	0
Loudness	Set the loudness	On/Off	Off
Delay	Define the delay type	Dynamic or User Define	Dynamic <sup>2</sup>
User Delay	Available when selecting the User Defined delay	0 to 120 <sup>3</sup> (msec)	0
USB Audio Source	Select the USB audio source to follow the USB signal	No Audio, VGA (from 1 to 4), Comp (from 1 to 4), YC (from 1 to 4), CV (from 1 to 4)	

1 The actual range depends upon the input resolution

2 Dynamic means that the audio delay is equal to the pipeline video delay

3 In steps of 1msec

Setting	Function	Selection/Range		Default
Audio Level <sup>1</sup>	Adjust the audio input and output gains for each group <sup>2</sup> (see <a href="#">Figure 18</a> )	VGA Grp In	VGA Grp Out	0
		HDMI Grp In	HDMI Grp Out	
		Comp Grp In	Comp Grp Out	
		YC Grp In	YC Grp Out	
		CV Grp In	CV Grp Out	
		Master In	Master Out	
		Mic In		

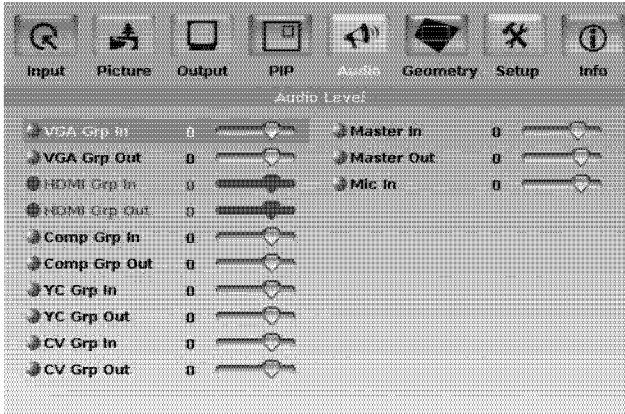


Figure 18: Audio Level Screen

1 The audio level range for the Master Out and for the Mic In is from -100 to 24; for the Master In and group inputs and outputs it is from -30 to 10

2 Abbreviated as “Grp” in the OSD

### 8.1.6 The Geometry Screen

Figure 19 and Table 11 define the Geometry screen, allowing the user flexibility in positioning his projector relative to the screening surface.

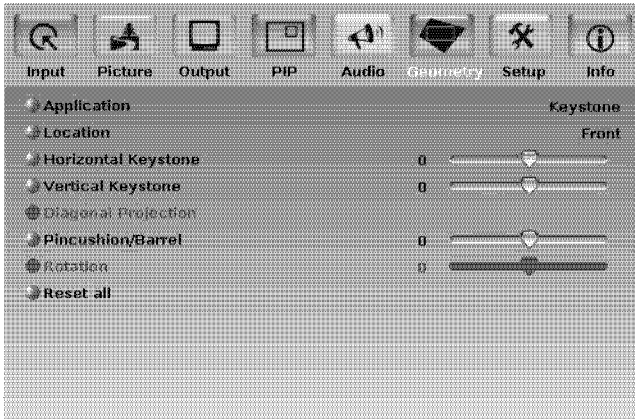


Figure 19: Geometry Screen

Table 11: Geometry Screen Functions

Setting	Function	Selection/Range	Default
Application	Select the output application	Keystone, Anyplace or Rotation	Keystone
Location	Select the location of the display	Front, Ceiling, Rear or Rear ceiling	Front
Horizontal Keystone	Adjust the horizontal keystone <sup>1</sup>	-40 to 40	0
Vertical Keystone	Adjust the vertical keystone <sup>2</sup>	-30 to 30	0
Diagonal Projection	Move the location of each corner of the display separately <sup>3</sup>	Top Left, Top Right, Bottom Left, Bottom Right or Reset (to reset diagonal projections settings)	Top Left
Pincushion/Barrel	Adjust the pincushion or barrel appearance of the screen <sup>4</sup>	-20 to 20	0
Rotation	Rotate the display clockwise or counterclockwise (in 1° increments)	-180 to 180	0
Reset all	Resets the geometry setting to its default values		

Table 12 defines the settings available for each application:

1 If the projector is located at an angle to the left or right of the screen

2 If the projector is located at an angle above or below the screen

3 Horizontally and vertically

4 For projection onto curved surfaces

Table 12: Available Settings for Each Application

Application	Available Settings
Keystone	Location, horizontal keystone, vertical keystone, pincushion/barrel and Reset all
Anyplace	Location, Diagonal Projection and Reset all
Rotation	Location, pincushion/barrel, Rotation and Reset all

### 8.1.7 The Setup Screen

Figure 20 and Table 13 define the Setup screen.

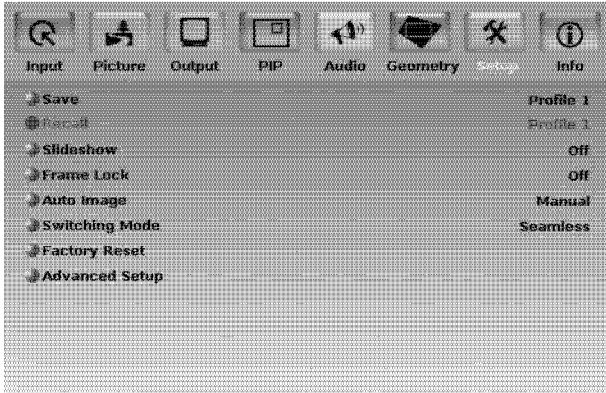


Figure 20: Setup Screen

Table 13: Setup Screen Functions

Setting	Function	Selection/Range	Default
Save	Save a profile	From Profile 1 to Profile 8	
Recall	Recall a profile	From Profile 1 to Profile 8	
Slideshow	Set speed for slide show (see section 8.1.8)	Min, Low, Mid, Long, Max, Off	Off
Frame Lock	Locks the vertical refresh rate of the output to that of the input <sup>1,2</sup>	On/Off	Off
Auto Image	Automatically adjust and align the picture each time one of the UXGA inputs is selected or if the UXGA input resolution has changed	Manual, Auto	Manual
Switching Mode	Select seamless switching (fade-through-Black) or fast switching which is faster but may cause glitches on the output (applies only when switching between analog inputs)	Seamless, Fast	Seamless

1 Note that seamless switching is not possible when working in the Frame Lock mode unless all sources are frame synchronized

2 In cases where the output resolution can support the vertical refresh rate of the input, the output refresh rate will change according to the input refresh rate

Setting	Function	Selection/Range	Default
Factory Reset	Reset your <b>VP-725XLA</b> to its preset default settings	Confirm, Yes, No	
Advanced Setup	Open the advanced setups (see <a href="#">Figure 21</a> )	Mode Set (see <a href="#">Table 14</a> ) OSD (see <a href="#">Table 15</a> ) Misc. (see <a href="#">Table 16</a> ) Input (see <a href="#">Table 17</a> ) Output (see <a href="#">Table 18</a> )	
EDID EEPROM Protect	EDID writing protection <sup>1</sup>	On/Off	
HDMI Switch Behavior	Set to DVD/Normal or PC/Bypass	Normal <sup>2</sup> /Bypass	Normal

### 8.1.8 The Slideshow Feature

The **VP-725XLA** lets you run a slideshow via the USB input and set the slideshow speed via the slideshow feature.

To prepare a slideshow:

1. Load the slideshow JPEG<sup>3</sup> images to a USB memory stick.  
The slides will appear in alphabetical order.
2. Open the Setup menu and set the desired speed in the slideshow item and then close the menu.
3. Connect the Memory stick to the USB connector on the front panel.
4. Select the USB INPUT button on the front panel.  
The slideshow begins at the set speed.

You have to set the slideshow parameters before you run the slideshow

You can control the slide show by pressing the:

- FREEZE button to pause
- USB button to play and stop the slideshow
- Up button to go to the previous slide
- Down button to go to the next slide

<sup>1</sup> When an EDID file update is required, set the EDID protection to OFF. Note that this function might not be available for old hardware versions. In this case, this feature will be grayed out

<sup>2</sup> Set to Normal for sources with HDCP. When in Normal operation, the unit sends a hot plug to the source for any Group/Scaler switching request. There might be some graphic cards that might shut OFF the VGA/HDMI output following the hot plug detection. To prevent this, set this parameter to the Bypass mode so the unit will not send a hot plug for switching request (the hot plug will be detected by the source only when plugging a physical connection)

<sup>3</sup> JPEG files are recognized up to 2048x1536



### 8.1.8.1 The Advanced Setup Screen

Figure 21 to Figure 24, and Table 15 to Table 18 define the Advanced Setup screens.

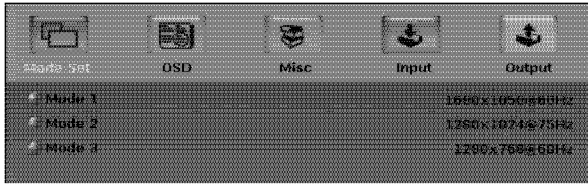


Figure 21: Advanced Setup Screen

The Mode Set functions define the desired working resolution and refresh rate when the system cannot distinguish between similar resolutions and refresh rate values (see Table 14).

Table 14: Mode Set Functions

Setting	Function	Selection/Range	Default
Mode 1	Set mode 1	1400x1050x60Hz 1680x1050x60Hz	1400x1050x60Hz
Mode 2	Set mode 2	1280x1024x75Hz 1280x1024x76Hz	1280x1024x75Hz
Mode 3	Set mode 3	1280x768x60Hz 1366x768x60Hz	1280x768x60Hz

Table 15: OSD Functions

Setting	Function	Selection/Range	Default
Menu Position	Set the location of the OSD menu	Center, Top Left, Top Right Bottom Left, Bottom Right	Top Right
Time Out (sec)	Set the OSD menu timeout	5, 10, 20, 30, 60, 90 or Off	30

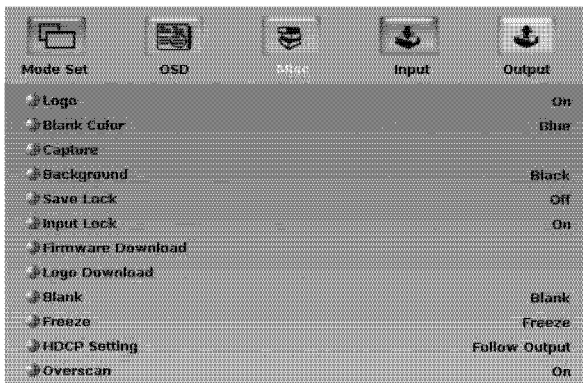


Figure 22: Misc Setup Screen

Table 16: Misc Functions

Setting	Function	Selection/Range	Default
Logo	Choose ON for the start up logo to appear on the screen OFF for it not to appear Set to Custom to download a custom Logo <sup>1</sup> (Flash ROM)	On, Off or Custom	Kramer Logo (On)
Blank Color	Set the blank color (the color that appears on the screen when the blank button is pressed)	Black or Blue	Blue
Capture	Press to capture the desired image input <sup>2</sup> to Flash ROM for using as a logo or as the background	Prompts "Capture" The captured image is saved as the "Custom" background and/or logo	
Background	Set the background screen color	Blue, Black, Custom <sup>3</sup>	Default
Save Lock	Set the Save Lock option to ON to save the lock status when the machine is powered down	On/Off	Off
Input Lock	Set the Input Lock to OFF so you can still use the SOURCE buttons on the front panel even when the lock button is on	On/Off	Off
Firmware Download <sup>4</sup>	Download the firmware via the USB connection	Select the correct file from the memory stick and Confirm	
Logo Download <sup>5</sup>	Download a new logo via the USB connection		
Blank	Set the function of the Blank button	Blank and mute, Blank, Mute	Blank and mute
Freeze	Set the function of the Freeze button	Freeze and Mute, Freeze, Mute	Freeze and Mute
HDCP Setting	Define whether the HDCP will follow the input or the output	Follow Input <sup>6</sup> , Follow Output <sup>7</sup>	Monitor
Overscan <sup>8</sup>	Allows stretching of the outputted picture	On, Off	Off

1 Obtained via the Capture function or downloaded via USB

2 The capture image size should not exceed 1280x1024

3 Obtained via the Capture function

4 Do not press any buttons during firmware download

5 Available when input is not set to USB

6 When Follow Input is selected, the Scaler changes its HDCP output setting (for the HDMI output) according to the HDCP of the input. This option is recommended when the HDMI Scaler output is connected to a splitter/switcher (in this mode, switching may not be glitch-free)

7 When Follow Output is selected, the Scaler matches its HDCP output to the HDCP setting of the HDMI acceptor to which it is connected. This ensures smooth switching, regardless of the input

8 Enabled only for HD input resolutions

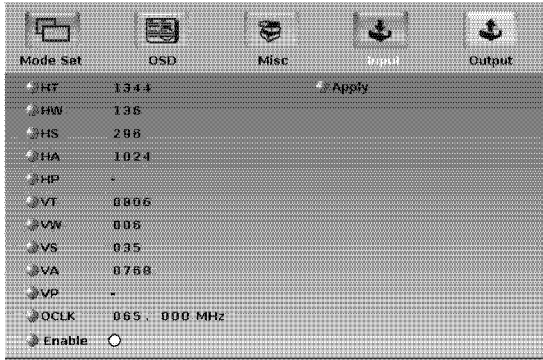


Figure 23: Input Setup Screen

Table 17: Input Functions

Setting	Function	Range	Default
HT	Horizontal Total		1344
HW	Horizontal sync pulse width		136
HS	Horizontal active start point		296
HA	Horizontal active region		1024
HP	Horizontal polarity		
VT	Vertical Total		806
VW	Vertical sync pulse width		6
VS	Vertical active start point		35
VA	Vertical active region		768
VP	Vertical polarity		
OCLK	Output clock		65
Enable			off
Apply	Press to apply settings		N/A

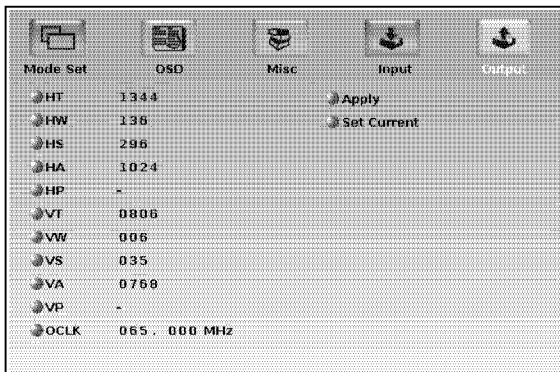


Figure 24: Output Setup Screen

Table 18: Output Functions

Setting	Function	Range	Default
HT	Horizontal total		1344
HW	Horizontal sync pulse width		136
HS	Horizontal active start point		296
HA	Horizontal active region		1024
HP	Horizontal polarity		
VT	Vertical total		806
VW	Vertical sync pulse width		6
VS	Vertical active start point		35
VA	Vertical active region		768
VP	Vertical polarity		
OCLK	Output clock		65
Apply	Press to apply the settings		
Set Current	Import the values of the currently selected output resolution into the User Mode Setting		N/A

### 8.1.9 Verifying Configuration Details via the Info Screen

From the Information screen (see [Figure 25](#)) you can verify the scaler source, the master audio source, the PIP source, the video group source, the output resolution, the SYNC mode (Frame lock or Free run), as well as the firmware version number and the audio board firmware version (for example, 1.2 in [Figure 25](#)):

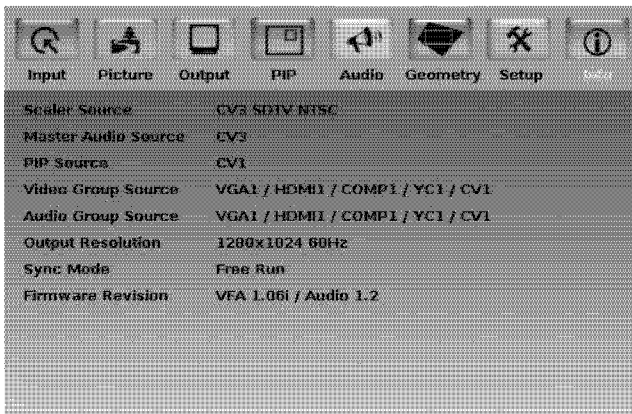


Figure 25: Information Screen

## 8.2 Operating via the LCD Display

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

- Front panel OSD buttons: *MENU*, *ENTER*, *-*, *+*, *UP* and *DOWN*
- Infrared remote control transmitter (see section [8.3](#)) keys: *MENU*, and the navigation keys

For example, to set<sup>1</sup> the Keystone to 6 via the LCD Display, using the front panel buttons, do the following:

1. Turn the **VP-725XLA** unit ON, and press the OSD ON button (if selected) to deselect it.
2. Press the appropriate front panel OSD buttons (as defined in [Figure 26](#)).

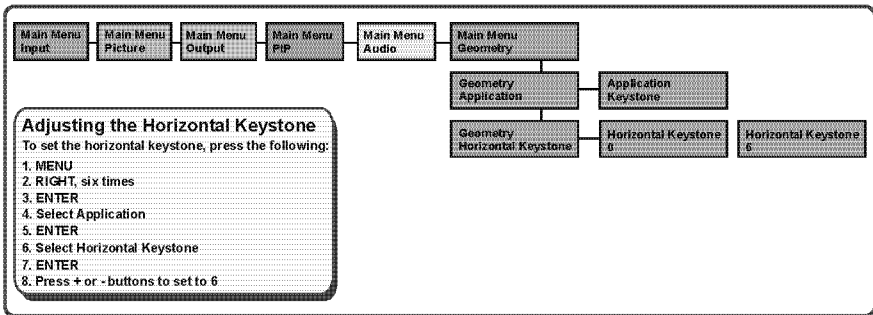


Figure 26: Example of how to use the LCD Display

## 8.3 Operating via the Infrared Remote Control Transmitter

You can control the **VP-725XLA** remotely, from the infrared 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 27](#) and [Table 19](#):

<sup>1</sup> To keep the picture rectangular. Section [8.1.5](#) illustrates how to adjust the Keystone via the OSD Menu

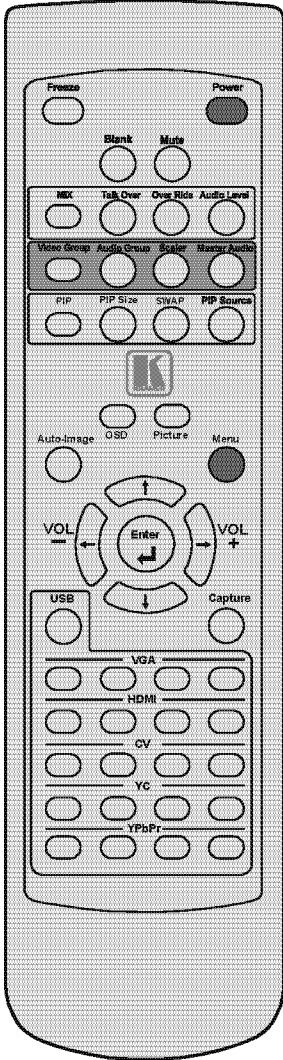


Figure 27: Infrared Remote Control Transmitter

Table 19: Infrared Remote Control Transmitter Functions

Key	Function
Freeze	Pauses the output video
Power	Cycles power
Blank	Toggles between a blank screen (blue or black screen) and the display
Mute	Mutes the audio output
MIX	Routes the combined signals from the Mic and the Line to the Master output
Talk Over	Routes the selected input to the output until an audio signal is detected on the microphone input
Over Ride	Routes the signal from the microphone to the Master output instead of from the Line, whose signal is blocked
Audio Level	Set the audio level
Video Group	Select the Video group operation mode
Audio Group	Select the Audio Group operation mode
Scaler	Select the Scaler operation mode
Master Audio	Select the Master Audio operation mode
PIP	Toggles the picture-in-picture function and illuminates/turns off the PIP button
PIP Size	Toggles the PIP size
SWAP	Toggles between the PIP content and the parent screen content
PIP Source	Selects the PIP source <sup>1</sup>
Auto Image	Assesses the image and improves the quality accordingly, by automatically adjusting the phase, frequency and position
OSD	Activates/deactivates access to the OSD Menu
Picture	Open the Picture menu <sup>2</sup>
Menu	Opens the Main menu <sup>2</sup>
Navigation arrows	Allows maneuvering within an OSD screen (left, right, up and down, as well as the Enter arrow at the center). The VOL+ and VOL- buttons increase and decrease the volume level, respectively
USB	select the USB <sup>3</sup> source
Capture	Capture an image to place as a logo or background
VGA	selects the VGA (UXGA) source (from 1 to 4)
HDMI	selects the HDMI source (from 1 to 4)
CV	selects the CV source (from 1 to 4)
YC	selects the YC source (from 1 to 4)
YPbPr	selects the YPbPr (COMP) source (from 1 to 4)

1 Press the PIP Source key and then an input key

2 Opens the menu on the LCD display and if the OSD button illuminates, will open the relevant OSD

3 JPEG files on a USB memory stick

## 8.4 Operating via ETHERNET/Serial Port

To control your **VP-725XLA** via the Ethernet/Serial Port:

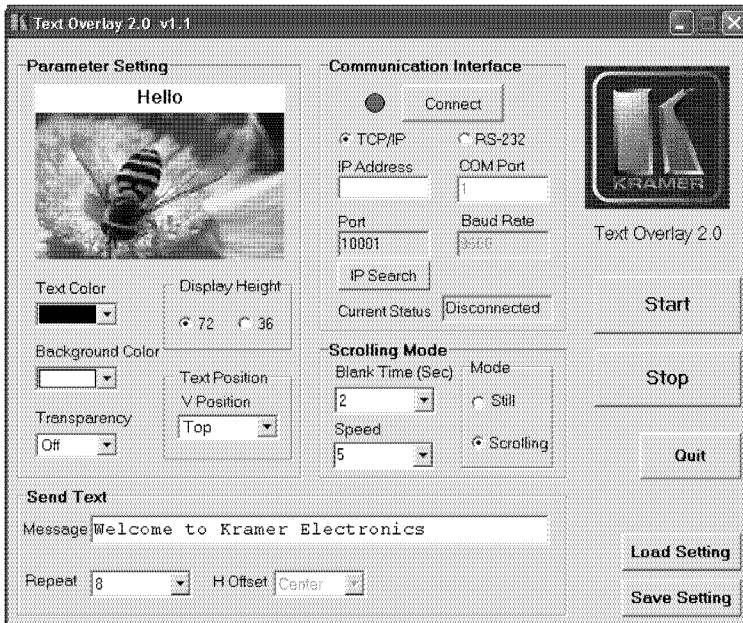
- Connect the ETHERNET port of the **VP-725XLA** to the Ethernet port of your PC<sup>1</sup>
- Download the Ethernet Application from our Web site at <http://www.kramerelectronics.com>
- Install and configure the Ethernet Application

## 9 Using Text Overlay

The text overlay feature is accessed via the Application Program (AP)<sup>2</sup>.

Running this AP with the PC connected to the **VP-725XLA** lets you display text over the screen, with features including text color and speed, transparency, text position and repetition. Current text overlay settings can be saved and loaded to the AP.

Figure 28 and Table 20 define the Text Overlay Application Screen:



*Figure 28: TextOverlay Application Screen*

<sup>1</sup> Or connect the serial port of your VP-725XLA to the serial port of your PC (see section 6.3)

<sup>2</sup> You can download the latest software from our Web site: <http://www.kramerelectronics.com>

Table 20: Features and Functions of the TextOverlay Application

Feature	Function
<b>Parameter Setting Area</b>	
<i>Text Color</i> Dropdown Box	Select the Text color
<i>Background Color</i> Dropdown Box	Set the text background color
<i>Transparency</i> Dropdown Box	Select On for a transparent background or Off for a non-transparent background
<i>Display Height</i> Check Box	Set the thickness of the background stripe (72 or 36)
<i>Text Position – V-Position</i>	Set the vertical position of the text background on the display screen (Top, Center or Bottom)
<b>Communication Interface Area</b>	
<i>Connect/Disconnect</i>	Connect the machine or disconnect
<i>TCP/IP</i> Check box	When selected, set the <i>IP Address</i> <sup>1</sup> and <i>Port</i> to connect via Ethernet <sup>2</sup>
<i>RS-232</i> Check box	When selected, set the <i>COM port</i> and <i>Baud Rate</i> (9600) to connect via the RS-232 connector <sup>2</sup>
<b>Scrolling Mode Area</b>	
<i>Blank Time (Sec)</i> Dropdown Box	Set the blank delay time (from 1 to 5)
<i>Speed</i> Dropdown Box	Set the speed at which the text moves on the display (from 1 to 5)
<i>Mode</i>	Set to <i>Still</i> (fixed text) or <i>Scrolling</i> (text moves across the display)
<b>Send Text Area</b>	
<i>Message</i>	Type the desired text in the <i>Message</i> box
<i>Repeat</i> Dropdown Box	Set the number of times that the text message will scroll across the screen <sup>3</sup> (1 to 20), or set to <i>Forever</i> to repeat the text message continuously
<i>H-Offset</i> Dropdown Box	After selecting the <i>Static</i> mode, use the <i>H-Offset</i> box to select the horizontal position of the text (Left Center or Right)
<i>Start</i> Button	Click to display the text on screen
<i>Stop</i> Button	Click to stop scrolling on screen
<i>Quit</i> Button	Click to quit the program
<i>Load Setting</i> Button	Click to load a previously saved setting
<i>Save Setting</i> Button	Click to save the current setting

---

1 Or search the IP address

2 You have to select the connection type before connecting the software to the machine

3 For example, set to 2 to repeat the text twice



## 10 Technical Specifications

Table 21 includes the technical specifications:

*Table 21: Technical Specifications<sup>1</sup> of the VP-725XLA*

<b>INPUTS:</b>	4 x CV 1Vpp/75Ω on BNC connectors; 4 x YC 1Vpp (Y) 0.3Vpp (C)/75Ω on 4-pin connectors; 4 x Component (Y/G, Pb/B, Pr/R or RGsB <sup>2</sup> ) on BNC connectors; 4 x VGA (VGA through UXGA, RGBS or RGsB <sup>3</sup> ) on 15-pin HD connectors; 4 x HDMI on HDMI connectors (embedded audio), 1 USB 16 x balanced stereo audio on terminal block connectors, 4dBu nominal; microphone on a female XLR connector
<b>GROUP OUTPUTS:</b>	1 x CV 1Vpp/75Ω on a BNC connector; 1 x YC 1Vpp (Y) 0.3Vpp (C)/75Ω on a 4-pin connector; 1 x Component (Y/G, Pb/B, Pr/R) on BNC connectors; 1 x VGA (VGA through UXGA) on a 15-pin HD connector; 1 x HDMI on an HDMI connector 5 x balanced stereo audio on terminal block connectors, 4dBu nominal
<b>SCALED OUTPUTS:</b>	1 x UXGA a 15-pin HD connector; 1 x RGBHV / YPbPr on BNC connectors; 1 x HDMI on an HDMI connector
<b>OUTPUT RESOLUTIONS<sup>4</sup>:</b>	Native HDMI <sup>3</sup> , 640x480x60Hz, 640x480x75Hz, 800x600x50Hz, 800x600x60Hz, 800x600x75Hz, 1024x768x50Hz, 1024x768x60Hz, 1024x768x75Hz, 1280x768x50Hz, 1280x768x60Hz, 1280x720x60Hz, 1280x800x60Hz, 1280x1024x50Hz, 1280x1024x60Hz, 1280x1024x75Hz, 1366x768x50Hz, 1366x768x60Hz, 1400x1050x50Hz, 1400x1050x60Hz, 1600x1200x50Hz, 1600x1200x60Hz, 1680x1050x60Hz, 1920x1080@60Hz, 1920x1200@60Hz, 480px60Hz, 576px60Hz, 720px50Hz, 720px60Hz, 1080ix50Hz, 1080i 60Hz, 1080px50Hz, 1080px60Hz, 1080p@24Hz or Custom
<b>CONTROL:</b>	Front panel buttons, IR remote control, RS-232, Ethernet; with OSD and front panel LCD
<b>ADDITIONAL CONTROLS:</b>	Freeze, zoom, different selectable vertical refresh rates, output image scaling, Picture-In-Picture, aspect ratio change, Geometry settings, text overlay, and so on
<b>POWER SOURCE:</b>	100-240 VAC, 50/60Hz 50VA
<b>DIMENSIONS:</b>	19" x 9.3" x 3U W, D, H, rack mountable
<b>WEIGHT:</b>	5.5kg (12.2lbs) approx.
<b>ACCESSORIES:</b>	IR remote control, power cord, rack "ears", null-modem adaptor, control application programs via RS-232 (PC) and via Ethernet (i-Phone® and PC)

1 Specifications are subject to change without notice

2 Progressive and interlaced

3 If the Native HDMI is set to 1920x1080x60, the preferred mode will be defined as 1920x1080x60(CEA-861)

4 For the most up-to-date resolution list, go to our Web site at <http://www.kramerelectronics.com>

## Technical Specifications

*Table 22: Technical Specifications of the RGBHV / RGBS (PC) / RGsB (PC) Input Signal<sup>1</sup>*

Resolution	Vertical Frequency (Hz)	Notes	Resolution	Vertical Frequency (Hz)	Notes
640x480 (480p)	60	VESA	1152x870	75	Mac21
640x480	67	Mac13	1152x900	66	Sun
640x480	72	VESA	1152x900	76	Sun
640x480	75	VESA	1280x720	60	VESA
640x480	85	VESA	1280x800	60	VESA
720x400	70		1280x960	60	VESA
720x400	85	VESA	1280x960	85	VESA
800x600	56	VESA	1280x768	60	VESA
800x600	60	VESA	1280x1024	60	VESA
800x600	72	VESA	1280x1024	75	VESA
800x600	75	VESA	1280x1024	76	Sun
800x600	85	VESA	1280x1024	85	VESA
832x624	75	Mac16	1366x768	60	VESA
1024x768	60	VESA	1440x900	60	VESA
1024x768	70	VESA	1400x1050	60	VESA
1024x768	75	VESA	1400x1050	75	VESA
1024x768	75	Mac19	1600x1200	60	VESA
1024x768	85	VESA	1680x1050	60	VESA
1024x800	84	Sun	1920x1080	60	VESA
1152x864	75	VESA	1920x1200	60	VESA

*Table 23: Technical Specifications of the Y/C, Video Signal*

<b>Standard</b>	NTSC, NTSC4.43, PAL, PAL-M, PAL-N, SECAM, PAL-60
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*Table 24: Technical Specifications of the HDMI input Signal (for RGB or YUV Colorspace)*

Resolution	Vertical Frequency (Hz)	Remark
1080i	60	YPbPr
1080i	50	YPbPr
1080p	60	YPbPr
1080p	50	YPbPr
1080P	24fps	YPbPr
720p	60	YPbPr
720p	50	YPbPr
480i	60	YPbPr
480p	60	YPbPr
576i	50	YPbPr
576p	50	YPbPr

<sup>1</sup> For the most up-to-date resolution list, go to our Web site at <http://www.kramerelectronics.com>

Table 25: Technical Specifications of the Component Input Signal

Resolution	Vertical Frequency (Hz)	Remark
1080i	60	YPbPr
1080i	50	YPbPr
1080p	60	YPbPr
1080p	50	YPbPr
720p	60	YPbPr
720p	50	YPbPr
480i	60	YPbPr
480p	60	YPbPr
576i	50	YPbPr
576p	50	YPbPr

Table 26: Technical Specifications of the RGBHV/Comp/YPbPr Output Signal

Resolution	Vertical Frequency (Hz)	Remark	Resolution	Vertical Frequency (Hz)	Remark
640x480	60	VESA	1366x768	60	VESA
640x480	75	VESA	1400x1050	50	
800x600	50		1400x1050	60	VESA
800x600	60	VESA	1600x1200	50	
800x600	75	VESA	1600x1200	60	VESA
1024x768	50		1920x1080	60	VESA
1024x768	60	VESA	1920x1200	60	VESA
1024x768	75	VESA	1680x1050	60	VESA
1280x720	60	VESA	1080i	60	Comp/YPbPr
1280x768	50		1080i	50	
1280x768	60	VESA	720p	60	
1280x800	60	VESA	720p	50	
1280x1024	50		480p	60	
1280x1024	60	VESA	576p	50	
1280x1024	75	VESA	1080p	50	
1366x768	50		1080p	60	

Table 27: Technical Specifications of the HDMI/DVI/RGB Output Signal

Resolution	Vertical Frequency (Hz)	Remark	Resolution	Vertical Frequency (Hz)	Remark
640x480	60	VESA	1366x768	60	VESA
640x480	75	VESA	1400x1050	50	
800x600	50		1400x1050	60	VESA
800x600	60	VESA	1600x1200	50	
800x600	75	VESA	1600x1200	60	VESA
1024x768	50		1920x1080	60	VESA
1024x768	60	VESA	1920x1200	60	VESA
1024x768	75	VESA	1680x1050	60	VESA
1280x720	60	VESA	1080i	60	HDMI
1280x768	50		1080i	50	
1280x768	60	VESA	720p	60	
1280x800	60	VESA	720p	50	
1280x1024	50		480p	60	
1280x1024	60	VESA	576p	50	
1280x1024	75	VESA	1080p	50	
1366x768	50		1080p	60	

## 11 VP-725XLA Communication Protocol

Communication Confirmation:

Send: CR

Reply: CR>

Set and Get command:

**Set Command:** Y ■ Control\_Type ■ Function ■ Param ■ CR

**Reply:** Z ■ Control\_Type ■ Function ■ Param ■ CR>

**Get Command:** Y ■ Control\_Type ■ Function ■ CR

**Reply:** Z ■ Control\_Type ■ Function ■ Param ■ CR>

Example 1 (set input 1 source type to COMP):

"Y ■ 0 ■ 0 ■ 0 ■ CR"

"Z ■ 0 ■ 0 ■ 0 ■ CR>"

Example 2 (get current input 1 source type):

"Y ■ 1 ■ 0 ■ CR"

"Z ■ 1 ■ 0 ■ 0 ■ CR>"

Definition:

■ : ASCII Code 0x20

CR: ASCII Code 0x0D

After set type Command setting, system will respond a string as "Done".

The default data rate is 9600 Baud, with no parity, 8 data bits and 1 stop bit.

Table 28 includes the Communication Protocol:

Table 28: Communication Protocol of the VP-725XLA

Control Type		Function	Parameter	Description
Set	Get			
0	1	5	0: Auto 1: RGB 2: YUV	Input Color Format
0	1	6	0: Auto 1: NTSC 2: PAL 3: PAL-M 4: PAL-N 5: NTSC 4.43 6: SECAM 7: PAL-60	Input Video Standard
0	1	7	0 ~ 400	Input H-Position (the parameter range is set according to the input mode)
0	1	8	0 ~ 100	Input V-Position (the parameter range is set according to the input mode)
0	1	9	-50 ~ 50	Input Frequency (the parameter range is set according to the input mode)
0	1	10	0 ~ 31	Input Phase
0	-	11	N/A	Input Auto Image
0	1	12	-50 ~ 50	Picture Brightness
0	1	13	-50 ~ 50	Picture Contrast
0	1	14	-50 ~ 50	Picture Color
0	1	15	-180 ~ 180	Picture Hue
0	1	16	-50 ~ 50	Picture Sharpness
0	1	17	0: Gamma 1 1: Gamma 2 2: Gamma 3 3: Gamma 4 4: Gamma 5	Picture Output Gamma
0	1	18	0: Auto 1: Video 2: Film	Picture Film Mode
0	1	19	0: Off 1: Low 2: Medium 3: High	Picture Temporal NR
0	1	20	0: Off 1: Low 2: Medium 3: High	Picture Mosquito NR
0	1	21	0: Off 1: On	Picture Block NR
0	1	22	0: Off 1: Low 2: Medium 3: High	Picture Detail Enhancement
0	1	23	0: Off 1: Low 2: High	Picture Luma Transition Enhance
0	1	24	0: Off 1: Low 2: High	Picture Chroma Transition Enhance

VP-725XLA Communication Protocol

Control Type		Function	Parameter	Description
Set	Get			
0	1	25	0 : Native HDMI 1 : 640x480@60Hz 2 : 640x480@75Hz 3 : 800x600@50Hz 4 : 800x600@60Hz 5 : 800x600@75Hz 6 : 1024x768@50Hz 7 : 1024x768@60Hz 8 : 1024x768@75Hz 9 : 1280x768@50Hz 10 : 1280x768@60Hz 11 : 1280x720@60Hz 12 : 1280x800@60Hz 13 : 1280x1024@50Hz 14 : 1280x1024@60Hz 15 : 1280x1024@75Hz 16 : 1366x768@50Hz 17 : 1366x768@60Hz 18 : 1400x1050@50Hz 19 : 1400x1050@60Hz 20 : 1600x1200@50Hz 21 : 1600x1200@60Hz 22 : 1680x1050@60Hz 23 : 1920x1080@60Hz 24 : 1920x1200@60Hz 25 : 480p@60Hz 26 : 576p@60Hz 27 : 720p@50Hz 28 : 720p@60Hz 29 : 1080i@50Hz 30 : 1080i@60Hz 31 : 1080p@50Hz 32 : 1080p@60Hz 33 : 1080p@24Hz 96 : Custom1 97 : Custom2 98 : Custom3 99 : Custom4	Output Resolution
0	1	26	0: Auto 1: HDMI 2: DVI	Output HDMI Type
0	1	27	0: Best Fit 1: Letterbox 2: Follow Output 3: Virtual Wide 4: Follow Input 5: Custom	Aspect Ratio
0	1	28	-16 ~ 16	H-Pan
0	1	29	-16 ~ 16	V-Pan
0	1	30	-8 ~ 8	H-Zoom
0	1	31	-8 ~ 8	V-Zoom

VP-725XLA Communication Protocol

Control Type		Function	Parameter	Description
Set	Get			
0	1	32	0: 100% 1: 150% 2: 200% 3: 225% 4: 250% 5: 275% 6: 300% 7: 325% 8: 350% 9: 375% 10: 400% 11: Custom	Zoom
0	1	33	0 ~ 32	Custom Zoom
0	1	34	-16 ~ 16	Zoom H-Pan
0	1	35	-16 ~ 16	Zoom V-Pan
0	1	36	0: Off 1: On	PIP On/Off
0	1	37	0: Picture-In-Picture 1: Picture + Picture 2: Split	PIP Type
0	1	38	0: VGA1 1: VGA2 2: VGA3 3: VGA4 4: HDMI1 5: HDMI2 6: HDMI3 7: HDMI4 8: COMP1 9: COMP2 10: COMP3 11: COMP4 12: YC1 13: YC2 14: YC3 15: YC4 16: CV1 17: CV2 18: CV3 19: CV4	PIP Source
0	1	39	0: 1/25 1: 1/16 2: 1/9 3: 1/4 4: Custom	PIP Size
0	1	40	0 ~ 128	PIP H-Position
0	1	41	0 ~ 128	PIP V-Position
0	1	42	1 ~ 255	PIP H-Size
0	1	43	1 ~ 255	PIP V-Size
0	1	44	0: Off 1: On	PIP Frame
0	1	45	0: Red 1: Green 2: Blue	PIP Frame Color
0	1	49	-40~0~~+40	Audio Bass
0	1	50	-40~0~~+40	Audio Treble
0	1	51	-25~25	Audio Balance
0	1	52	0: Off 1: On	Audio Loudness



VP-725XLA Communication Protocol

Control Type		Function	Parameter	Description
Set	Get			
0	1	53	0: Dynamic 1: User Define	Audio Delay
0	1	54	0~340 (step 2)	Audio User Delay
0	1	55	0: No audio 1: VGA1 2: VGA2 3: VGA3 4: VGA4 5: HDMI1 6: HDMI2 7: HDMI3 8: HDMI4 9: COMP1 10: COMP2 11: COMP3 12: COMP4 13: YC1 14: YC2 15: YC3 16: YC4 17: CV1 18: CV2 19: CV3 20: CV4	Audio Input For USB (HDMI1 / HDMI2 / HDMI3 / HDMI4 are Not Allowed)
0	1	56	0: Keystone 1: Anyplace 2: Rotation	Geometry Application
0	1	57	0: Front 1: Ceiling 2: Rear 3: Rear ceiling	Geometry Location
0	1	58	-40 ~ 40	Geometry Horizontal Keystone
0	1	59	-30~30	Geometry Vertical Keystone
0	1	60	-2000~2000	Geometry Diagonal Projection - Top Left H
0	1	61	-2000~2000	Geometry Diagonal Projection - Top Left V
0	1	62	-2000~2000	Geometry Diagonal Projection - Top Right H
0	1	63	-2000~2000	Geometry Diagonal Projection - Top Right V
0	1	64	-2000~2000	Geometry Diagonal Projection - Bottom Left H
0	1	65	-2000~2000	Geometry Diagonal Projection - Bottom Left V
0	1	66	-2000~2000	Geometry Diagonal Projection - Bottom Right H
0	1	67	-2000~2000	Geometry Diagonal Projection - Bottom Right V
0	-	68	N/A	Geometry Diagonal Projection – Reset
0	1	69	-20 ~ 20	Geometry Pincushion/Barrel
0	1	70	-180 ~ 180	Geometry Rotation
0	-	71	N/A	Geometry Reset all
0	-	72	0: Profile 1 1: Profile 2 2: Profile 3 3: Profile 4 4: Profile 5 5: Profile 6 6: Profile 7 7: Profile 8	Save Setting

VP-725XLA Communication Protocol

Control Type		Function	Parameter	Description
Set	Get			
0	-	73	0: Profile 1 1: Profile 2 2: Profile 3 3: Profile 4 4: Profile 5 5: Profile 6 6: Profile 7 7: Profile 8	Recall Setting
0	1	74	0: Off 1: On	Frame Lock
0	-	75	N/A	Factory Reset
-	1	76	N/A	Firmware Revision
0	1	77	0: 1400x1050x60 1: 1680x1050x60	Mode Set – Mode 1
0	1	78	0: 1280x1024x75 1: 1280x1024x76	Mode Set – Mode 2
0	1	79	0: Center 1: Top Left 2: Top Right 3: Bottom Left 4: Bottom Right	OSD Menu Position
0	1	80	0: 5 sec 1: 10 sec 2: 20 sec 3: 30 sec 4: 60 sec 5: 90 sec 6: Off	OSD Time Out
0	1	81	0: Off 1: On 2: Custom	Logo
0	1	82	0: Black 1: Blue	Blank Color
0	-	83	N/A	Capture
0	1	84	0: Black 1: Blue 2: Custom	Background
0	1	85	0: Off 1: On	Save Lock
0	1	86	0: Off 1: On	Input Lock
0	1	87	0: Blank & Mute 1: Blank 2: Mute	Blank key function
0	1	88	0: Freeze & Mute 1: Freeze 2: Mute	Freeze key function
0	1	89	0: Off 1: On	Freeze
0	1	90	0: Off 1: On	Blank
0	1	91	0: Off 1: On	Power
0	-	92	N/A	Info
0	-	93	N/A	Menu
0	-	94	N/A	Top
0	-	95	N/A	Down

VP-725XLA Communication Protocol

Control Type		Function	Parameter	Description
Set	Get			
0	-	96	N/A	Volume- (left - button)
0	-	97	N/A	Volume+ (right + button)
0	-	98	N/A	Enter
0	-	99	N/A	Picture
0	-	100	N/A	Swap
0	1	101	0: Off 1: On	Mute
0	1	102	0: Off 1: On	Lock
-	1	103	0: 640x480 60 1: 640x480 67, Mac13 2: 640x480 72 3: 640x480 75 4: 640x480 85 5: 720x400 70 6: 720x400 85 7: 800x600 56 8: 800x600 60 9: 800x600 72 10: 800x60075 11: 800x600 85 12: 832x62475, Mac16 13: 1024x768 60 14: 1024x768 70 15: 1024x768 75 16: 1024x768 75, Mac19 17: 1024x768 85 18: 1024x800 84, Sun 19: 1152x864 75 20: 1152x870 75, Mac21 21: 1152x900 66, Sun 22: 1152x900 76, Sun 23: 1280x960, 60 24: 1280x960 85 25: 1280x768 60 26: 1280x1024 60 27: 1280x1024 75 28: 1280x1024 76, Sun 29: 1280x1024 85 30: 1400x1050 60 31: 1400x1050 75 32: 1600x1200 60 33: 1680x1050 60 34: 1080i 60 35: 1080i 50 36: 1080p 60 37: 1080p 50 38: 720p 60 39: 720p 50 40: 480i 41: 480p 42: 576i 43: 576p 44: 1280x800 60 (R) 45: 1920x1200 60 46: 1920x1080 60 47: 1280x720 60	Main Input status



VP-725XLA Communication Protocol

Control Type		Function	Parameter	Description
Set	Get			
			48: 1080p 24 49: 1280x800 60 50: 1440x900 60 51: 1440x900 60(R) 52: 1280x768 (R) 53: 1680x1050 60 (R) 54: 1366x768 60 55: 1366x768 60 (R) 94: Custom1 95: Custom2 96: Custom3 97: Custom4 98: No Input detected 99: other 101: NTSC 102: PAL 103: PAL-M 104: PAL-N 105: NTSC 4.43 106: SECAM 107: PAL-60	
-	1	104	0: 640x480 60 1: 640x480 67, Mac13 2: 640x480 72 3: 640x480 75 4: 640x480 85 5: 720x400 70 6: 720x400 85 7: 800x600 56 8: 800x600 60 9: 800x600 72 10: 800x600 75 11: 800x600 85 12: 832x624 75, Mac16 13: 1024x768 60 14: 1024x768 70 15: 1024x768 75 16: 1024x768 75, Mac19 17: 1024x768 85 18: 1024x800 84, Sun 19: 1152x864 75 20: 1152x870 75, Mac21 21: 1152x900 66, Sun 22: 1152x900 76, Sun 23: 1280x960 60, 24: 1280x960 85 25: 1280x768 60 26: 1280x1024 60 27: 1280x1024 75 28: 1280x1024 76, Sun 29: 1280x1024 85 30: 1400x1050 60 31: 1400x1050 75 32: 1600x1200 60 33: 1680x1050 60 34: 1080i 60 35: 1080i 50	PIP Input status

VP-725XLA Communication Protocol

Control Type		Function	Parameter	Description
Set	Get			
			36: 1080p 60 37: 1080p 50 38: 720p 60 39: 720p 50 40: 480i 41: 480p 42: 576i 43: 576p 44: 1280x800 60 (R) 45: 1920x1200 60 46: 1920x1080 60 47: 1280x720 60 48: 1080p 24 49: 1280x800 60 50: 1440x900 60 51: 1440x900 60(R) 52: 1280x768 60(R) 53: 1680x1050 60 (R) 54: 1366x768 60 55: 1366x768 60 (R) 94: Custom1 95: Custom2 96: Custom3 97: Custom4 98: No Input detected 99: other 101: NTSC 102: PAL 103: PAL-M 104: PAL-N 105: NTSC 4.43 106: SECAM 107: PAL-60	
0	1	105	512~3071	Advance Input Mode: HT
0	1	106	32~(HS-48)	Advance Input Mode: HW
0	1	107	80~(HT-HA-12)	Advance Input Mode: HS
0	1	108	640~1920 <= (HT-92)	Advance Input Mode: HA
0	1	109	0: Negative polarity 1: Positive polarity	Advance Input Mode: HP
0	1	110	384~2047	Advance Input Mode: VT
0	1	111	2~(HS-13)	Advance Input Mode: VW
0	1	112	15~(VT-VA-1)	Advance Input Mode: VS
0	1	113	480~1200 <= (VT-16)	Advance Input Mode: VA
0	1	114	0: Negative polarity 1: Positive polarity	Advance Input Mode: VP
0	1	115	25 < OCLK < 165	Advance Input Mode: OCLK(Integer)
0	1	116	25 < OCLK < 165	Advance Input Mode: OCLK(Decimal)
0	1	117	0: Off 1: On	Advance Input Mode: Enable
0	-	118	N/A	Advance Input Mode: Save
0	1	119	512~3071	Advance Output Mode: HT
0	1	120	32~(HS-48)	Advance Output Mode: HW
0	1	121	80~(HT-HA-12)	Advance Output Mode: HS
0	1	122	640~1920 <= (HT-92)	Advance Output Mode: HA

VP-725XLA Communication Protocol

Control Type		Function	Parameter	Description
Set	Get			
0	1	123	0: Negative polarity 1: Positive polarity	Advance Output Mode: HP
0	1	124	384~2047	Advance Output Mode: VT
0	1	125	2~(HS-13)	Advance Output Mode: VV
0	1	126	15~(VT-VA-1)	Advance Output Mode: VS
0	1	127	480~1200 <= (VT-16)	Advance Output Mode: VA
0	1	128	0: Negative polarity 1: Positive polarity	Advance Output Mode: VP
0	1	129	25 < OCLK < 165	Advance Output Mode: OCLK(Integer)
0	1	130	25 < OCLK < 165	Advance Output Mode: OCLK(Decimal)
0	-	131	N/A	Advance Output Mode: Save
0	-	132	N/A	Advance Output Mode: Set Current
0	1	135	0: Follow Output 1: Follow Input	HDCP Setting
0	1	136	0: Custom1 1: Custom2 2: Custom3 3: Custom4	Advance Input Mode: Custom Input
0	1	137	0: Custom1 1: Custom2 2: Custom3 3: Custom4	Advance Output Mode: Custom Output
0	1	138	0: Off 1: On	Overscan
0	1	139	0: Seamless 1: Fast	Switching Mode
0	1	140	0: Manual 1: Auto	Auto Image Mode
0	-	141	N/A	Slideshow Start
0	-	142	N/A	Slideshow Stop
0	-	143	N/A	Slideshow Pause
0	-	144	N/A	Slideshow Next
0	-	145	N/A	Slideshow Previous
0	1	146	0: Min 1: Low 2: Mid 3: Long 4: Max 5: Off	Slideshow
0	1	147	0: 1280x768x60 1: 1366x768x60	Mode Set – Mode 3
0	1	148	0: Off 1: On	EDID Write Protect
0	1	151	0: Video Group 1: Audio Group 2: AV Group 3: Scaler 4: Master Audio 5: Master AV	Group / Master SELECT Note : Error when SELECT ≠ Video Group / Audio Group / AV Group
0	1	152	0: VGA1 1: VGA2 2: VGA3 3: VGA4	Select VGA group channel Note : Error when SELECT ≠ Video Group / Audio Group / AV Group
0	1	153	0: HDMI1 1: HDMI2 2: HDMI3	Select HDMI group channel Note :

VP-725XLA Communication Protocol

Control Type		Function	Parameter	Description
Set	Get			
			3: HDMI4	Error when SELECT ≠ Video Group / Audio Group / AV Group
0	1	154	0: COMP1 1: COMP2 2: COMP3 3: COMP4	Select COMP group channel Note : Error when SELECT ≠ Video Group / Audio Group / AV Group
0	1	155	0: YC1 1: YC2 2: YC3 3: YC4	Select YC group channel Note : Error when SELECT ≠ Video Group / Audio Group / AV Group
0	1	156	0: CV1 1: CV2 2: CV3 3: CV4	Select CV group channel Note : Error when SELECT ≠ Video Group / Audio Group / AV Group
0	1	157	0: VGA1 1: VGA2 2: VGA3 3: VGA4 4: HDMI1 5: HDMI2 6: HDMI3 7: HDMI4 8: COMP1 9: COMP2 10: COMP3 11: COMP4 12: YC1 13: YC2 14: YC3 15: YC4 16: CV1 17: CV2 18: CV3 19: CV4 20: USB	Select Master Input channel Note : Error when SELECT ≠ Scaler / Master Audio / Master AV
0	1	158	0: All Off 1: Override 2: Mix 3: Talk Over	MIC Control
0	1	159	-30 ~ +10	VGA Group In Volume
0	1	160	-30 ~ 10	VGA Group Out Volume
0	1	161	-30 ~ +10	HDMI Group In Volume
0	1	162	-30 ~ 10	HDMI Group Out Volume
0	1	163	-30 ~ +10	COMP Group In Volume
0	1	164	-30 ~ 10	COMP Group Out Volume
0	1	165	-30 ~ +10	YC Group In Volume
0	1	166	-30 ~ 10	YC Group Out Volume
0	1	167	-30 ~ +10	CV Group In Volume
0	1	168	-30 ~ 10	CV Group Out Volume
0	1	169	-30 ~ +10	Master In Volume
0	1	170	-100 ~ 24	Master Out Volume
0	1	171	-100 ~ 24	MIC In Volume
0	1	172	0: OSD ON = disable 1: OSD ON = enable	To Enable / Disable OSD ON
0	1	173	0: Pip source select = 0 1: Pip source select = 1	Hot key PIP source select, same as remote control key - PIP Source
0	1	174	0: 1/25 (for Get Command) 1: 1/16 (for Get Command)	Hot key PIP size, same as remote control key - PIP Size

VP-725XLA Communication Protocol

Control Type		Function	Parameter	Description
Set	Get			
			2: 1/9 (for Get Command) 3: 1/4 (for Get Command)	Note: For set function command, parameter will be ignore
0	-	175	N/A	Hot key Master Audio, same as remote control / Keypad - Master Audio of SELECT
0	-	176	N/A	Hot key Scaler, same as remote control / Keypad - Scaler of SELECT
0	-	177	N/A	Hot key Audio Group, same as remote control / Keypad - Audio Group of SELECT
0	-	178	N/A	Hot key Video Group, same as remote control / Keypad - Video Group of SELECT
0	1	179	10: Audio Level = Master In 11: Audio Level = Master Out 12: Audio Level = Mic In 13: Audio Level = Off	Hot key Audio Level , same as remote control / Keypad - Audio Level Note : parameter must be in the range of 10 ~ 13, or it will have no effect
0	-	180	N/A	Hot key Override, same as remote control / Keypad - Override
0	-	181	N/A	Hot key Talk Over, same as remote control / Keypad - Talk Over
0	-	182	N/A	Hot key Mix, same as remote control / Keypad - Mix
0	-	183	N/A	VGA Group Output Volume Increase
0	-	184	N/A	VGA Group Output Volume Decrease
0	-	185	N/A	HDMI Group Output Volume Increase
0	-	186	N/A	HDMI Group Output Volume Decrease
0	-	187	N/A	COMP Group Output Volume Increase
0	-	188	N/A	COMP Group Output Volume Decrease
0	-	189	N/A	YC Group Output Volume Increase
0	-	190	N/A	YC Group Output Volume Decrease
0	-	191	N/A	CV Group Output Volume Increase
0	-	192	N/A	CV Group Volume Decrease
0	-	193	N/A	MASTER Group Output Volume Increase
0	-	194	N/A	MASTER Group Output Volume Decrease
0	1	195	-100 ~ +100	HQV Color Setting - Red
0	1	196	-100 ~ +100	HQV Color Setting - Green
0	1	197	-100 ~ +100	HQV Color Setting - Blue
0	1	198	-100 ~ +100	HQV Color Setting - Cyan
0	1	199	-100 ~ +100	HQV Color Setting - Magenta
0	1	200	-100 ~ +100	HQV Color Setting - Yellow
0	1	201	0 : DVD/Normal 1 : PC/Bypass	HDMI1 Switching Behavior, not available for old HW versions
0	1	202	0 : DVD/Normal 1 : PC/Bypass	HDMI2 Switching Behavior, not available for old HW versions
0	1	203	0 : DVD/Normal 1 : PC/Bypass	HDMI3 Switching Behavior, not available for old HW versions
0	1	204	0 : Normal 1 : Bypass (Win7)	HDMI4 Switching Behavior, not available for old HW versions



## 11.1 Error Codes

*Table 29: The Error Codes*

<b>Error code</b>	<b>Description</b>
ERR 1	Unknown command
ERR 2	Unknown function
ERR 3	Unavailable function
ERR 4	Unknown control type
ERR 5	Unavailable get function
ERR 6	Unavailable set function
ERR 7	Unavailable parameter
ERR 8	Too few arguments

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## 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](http://www.kramerelectronics.com).
2. Any product, on which the serial number has been defaced, modified or removed, or on which the WARRANTY VOID IF TAMPERED sticker has been torn, reattached, removed or otherwise interfered with.
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 your 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.  
\* FCC and CE approved using STP cable (for twisted pair products)



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For the latest information on our products and a list of Kramer distributors, visit our Web site: [www.kramerelectronics.com](http://www.kramerelectronics.com), where updates to this user manual may be found. We welcome your questions, comments and feedback.



**Caution**

**Safety Warning:**

Disconnect the unit from the power supply before opening/servicing.



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**Kramer Electronics, Ltd.**

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