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# 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!

Congratulations on purchasing your Kramer **VP-444 Presentation Switcher/Scaler**. This product, which incorporates HDMI™ technology, is ideal for:

- Projection systems in conference rooms, boardrooms, hotels and churches
- Home theater up-scaling

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## 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.



Go to [www.kramerav.com/downloads/VP-444](http://www.kramerav.com/downloads/VP-444) to check for up-to-date user manuals, application programs, and to check if firmware upgrades are available (where appropriate).

## Achieving the Best Performance

- Use only good quality connection cables (we recommend Kramer high-performance, high-resolution cables) to avoid interference, deterioration in signal quality due to poor matching, and elevated noise levels (often associated with low quality cables).
- Do not secure the cables in tight bundles or roll the slack into tight coils.
- Avoid interference from neighboring electrical appliances that may adversely influence signal quality.
- Position your Kramer VP-444 away from moisture, excessive sunlight and dust.

## Safety Instructions



### Caution:

- This equipment is to be used only inside a building. It may only be connected to other equipment that is installed inside a building.
- For products with relay terminals and GPIO ports, please refer to the permitted rating for an external connection, located next to the terminal or in the User Manual.
- There are no operator serviceable parts inside the unit.

**Warning:**

- Use only the power cord that is supplied with the unit.
- Disconnect the power and unplug the unit from the wall before installing.
- Do not open the unit. High voltages can cause electrical shock! Servicing by qualified personnel only.
- To ensure continuous risk protection, replace fuses only according to the rating specified on the product label which located on the bottom of the unit.

## Recycling Kramer Products

The Waste Electrical and Electronic Equipment (WEEE) Directive 2002/96/EC aims to reduce the amount of WEEE sent for disposal to landfill or incineration by requiring it to be collected and recycled. To comply with the WEEE Directive, Kramer Electronics has made arrangements with the European Advanced Recycling Network (EARN) and will cover any costs of treatment, recycling and recovery of waste Kramer Electronics branded equipment on arrival at the EARN facility. For details of Kramer's recycling arrangements in your particular country go to our recycling pages at [www.kramerav.com/support/recycling](http://www.kramerav.com/support/recycling).

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## Overview

The **VP-444** is a high-performance presentation scaler/switcher for HDMI and computer graphics signals. The unit scales the video, embeds the audio, and outputs the signal to two HDMI (with embedded audio) outputs (with S/PDIF and balanced stereo audio) simultaneously.

The **VP-444** features:

- PixPerfect™ scaling technology – Kramer's precision pixel mapping and high quality scaling technology. High-quality 3:2 and 2:2 pull down de-interlacing and full up and down scaling of all video input signals.
- HDTV compatibility.
- HDCP compliance - The HDCP (High Definition Content Protection) license agreement allows copy-protected data on the HDMI input to pass only to the HDMI outputs.
- 12 video inputs - 10 HDMI on HDMI connectors, 2 computer graphics video on 15-pin HD connectors.
- Two HDMI scaled outputs.
- Up to UXGA/1080p output resolutions.
- Two microphone inputs that can be used by mixing, switching or talk-over.
- Companion AFV (Audio-Follow-Video) - stereo audio for every input (on terminal blocks).
- 12 unbalanced stereo inputs on terminal blocks as well as embedded audio for the HDMI inputs, each with individual level controls.
- Audio outputs – one S/PDIF on an RCA connector, one balanced stereo audio on a terminal block as well as embedded audio on the HDMI outputs.
- Multiple aspect ratio selections - full, best fit, over scan, under scan, letter box and pan

scan.

- Selectable panel lock modes.
- Powerful audio features via DSP technology including audio equalization, mixing, delay and so on.
- Built-in ProcAmp - color, hue, sharpness, noise, contrast and brightness.
- Supports 4:4:4 (RGB and YUV) as well as 4:4:2 (YUV) color sampling.
- Maintains constant output sync – there is no disruption on the output while switching between inputs and when no video is detected.
- Front panel control - audio mute and freeze frame.
- Front panel lockout.
- Non-volatile memory - saves final settings.

Control your **VP-444**:

- Directly, via the front panel push buttons.
- By RS-232 serial commands transmitted by a touch screen system, PC, or other serial controller.
- Remotely, from the infrared remote control transmitter with OSD (on-screen display).
- Via the Ethernet with built-in Web pages.

The **VP-444** is housed in a 19" 1U rack mountable enclosure, with rack "ears" included, and is fed from a 100-240 VAC universal switching power supply.



For optimum range and performance use the recommended Kramer shielded twisted pair cables available at [www.kramerav.com/product/VP-444](http://www.kramerav.com/product/VP-444).

## Typical Applications

VP-444 is ideal for the following typical applications:

- Projection systems in conference rooms, boardrooms, classrooms, hotels and churches
- Home theater up-scaling

# Defining VP-444 Presentation Switcher/Scaler

This section defines the **VP-444**.

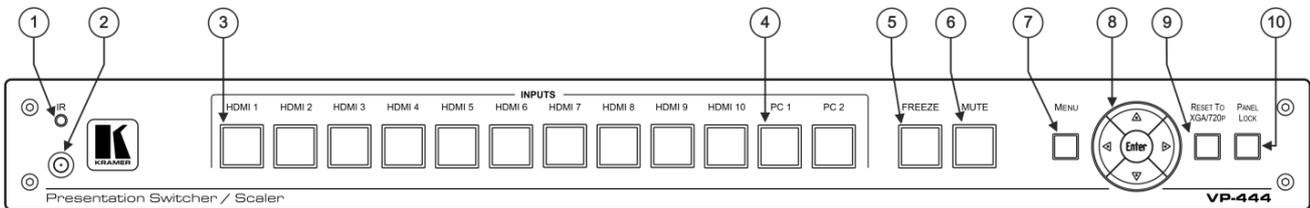


Figure 1: **VP-444 Presentation Switcher/Scaler** Front Panel

#	Feature	Function	
1	IR LED	Lights when the unit accepts IR remote commands	
2	IR Receiver	Receives signals from the remote control transmitter	
3	INPUT Selector Buttons	HDMI	Press to select the HDMI input (from 1 to 10)
4		PC	Press to select the computer graphics input (from 1 to 2)
5	FREEZE Button	Press to freeze/unfreeze the output video image; can be programmed to follow MUTE (see <a href="#">MAIN MENU</a> on page 11)	
6	MUTE Button	Press to toggle between muting (blocking out the sound) and enabling the audio output	
7	MENU Button	Displays the OSD menu (see <a href="#">Using OSD Menu</a> on page 11)	
8	Navigation Buttons	◀	Press to decrease numerical values or select from several definitions When not within the OSD menu mode, press to reduce the output volume
		▲	Press to move up the menu list values (see <a href="#">Using OSD Menu</a> on page 11)
		▶	Press to increase numerical values or select from several definitions When not within the OSD menu mode, press to increase the output volume
		▼	Press to move down the menu list (see <a href="#">Using OSD Menu</a> on page 11)
		ENTER	Press to accept changes and change the SETUP parameters (see <a href="#">Using OSD Menu</a> on page 11)
9	RESET TO XGA/720p Button	Press to reset the video resolution to XGA or 720p Press and hold for about 5 seconds to toggle between switching to XGA or 720p	
10	PANEL LOCK Button	Press and hold for about 5 seconds to lock/unlock the front panel buttons	

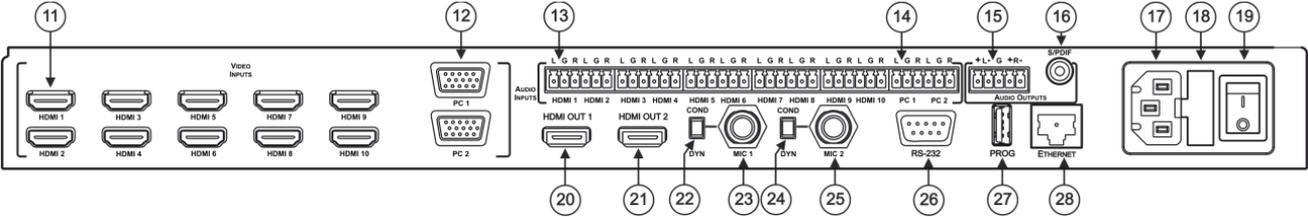


Figure 2: VP-444 Presentation Switcher/Scaler Rear Panel

#	Feature		Function
11	VIDEO INPUT Connectors	HDMI	Connect to the HDMI source (from 1 to 10)
12		PC 15-pin HD	Connect to the computer graphics source (from 1 to 2)
13	AUDIO INPUT Unbalanced Stereo Terminal Blocks	HDMI	Connect to the analog audio HDMI source (from 1 to 10)
14		PC	Connect to the analog audio computer graphics source (from 1 to 2)
15	AUDIO OUTPUTS	Balanced Stereo Terminal Block	Connects to the balanced stereo analog audio acceptor
16		S/PDIF 3.5 Mini Jack Connector	Connects to a digital audio acceptor
17	Mains Socket		Connect the mains power cord
18	Mains Fuse Holder		Fuse for protecting the device
19	Power Switch		Switch for turning the unit ON or OFF
20	HDMI OUT 1 Connector		Connect to the HDMI acceptor 1
21	HDMI OUT 2 Connector		Connect to the HDMI acceptor 2
22	COND / DYN Switch for MIC 1		Move up to select a condenser type microphone; down to select a dynamic type microphone
23	MIC 1 6mm Jack		Connect to the microphone source 1
24	COND / DYN Switch for MIC 2		Move up to select a condenser type microphone; down to select a dynamic type microphone
25	MIC 2 6mm Jack		Connect to the microphone source 2
26	RS-232 9-pin D-sub Port		Connect to the PC or the remote controller
27	PROG		For factory use only
28	ETHERNET Connector		Connects to the PC or other Serial Controller through computer networking

# Mounting VP-444

This section provides instructions for mounting **VP-444**. Before installing, verify that the environment is within the recommended range:



- Operation temperature – 0° to 40°C (32 to 104°F).
- Storage temperature – -40° to +70°C (-40 to +158°F).
- Humidity – 10% to 90%, RHL non-condensing.



- VP-444 must be placed upright in the correct horizontal position.

**Caution:**

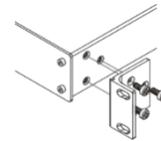
- Mount VP-444 before connecting any cables or power.

**Warning:**

- Ensure that the environment (e.g., maximum ambient temperature & air flow) is compatible for the device.
- Avoid uneven mechanical loading.
- Appropriate consideration of equipment nameplate ratings should be used for avoiding overloading of the circuits.
- Reliable earthing of rack-mounted equipment should be maintained.

## To mount the VP-444 on a rack

Attach both ear brackets by removing the screws from each side of the machine and replacing those screws through the ear brackets or place the machine on a table.



For more information go to [www.kramerav.com/downloads/VP-444](http://www.kramerav.com/downloads/VP-444)

# Connecting VP-444



Always switch off the power to each device before connecting it to your **VP-444**. After connecting your **VP-444**, connect its power and then switch on the power to each device.

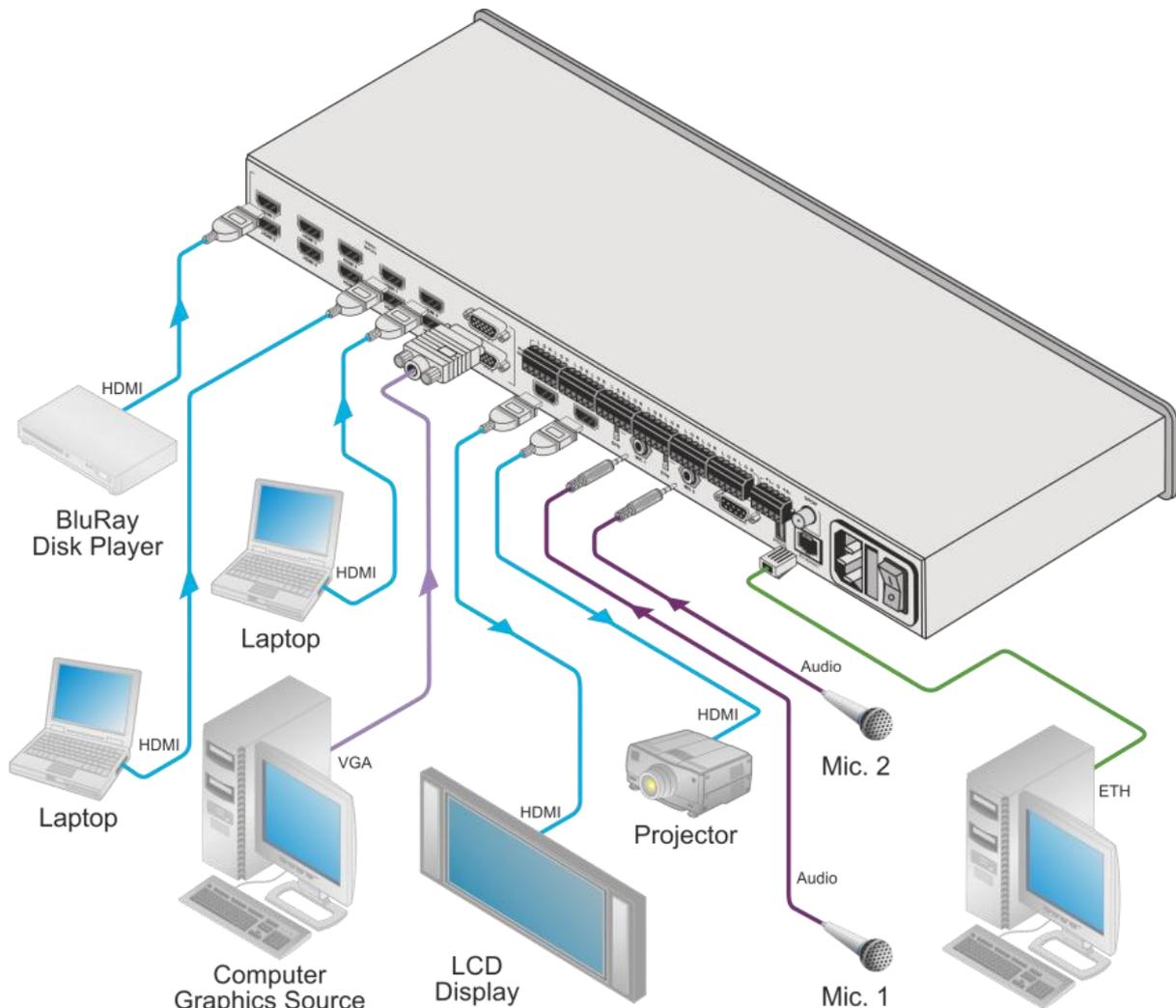


Figure 3: Connecting the **VP-444** Presentation Switcher / Scaler



You do not have to connect all the inputs and outputs, connect only those that are required.

To connect the **VP-444**, as illustrated in the example in [Figure 3](#), do the following:

1. Connect an HDMI source (for example, a Blu-ray disk player) to the HDMI VIDEO INPUT connector (from 1 to 10).
2. Connect a computer graphics source to the PC 15-pin HD VIDEO INPUT connector (from 1 to 2).
3. Connect the audio input signals to the AUDIO IN terminal block connectors, as required (not shown in [Figure 3](#)).
4. Connect the HDMI OUT 1 connector to an HDMI acceptor (for example, an LCD display), from 1 to 2.

5. Connect the audio output signals to the OUT stereo analog audio acceptor and/or the digital audio acceptor, as required (not shown in [Figure 3](#)).
6. Connect the power cord (not shown in [Figure 3](#)).
7. If required, connect:
  - A PC via RS-232, see [Connecting to VP-444 via RS-232](#) on page [8](#)
  - The ETHERNET port, see [Operating via Ethernet](#) on page [14](#)

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## Connecting Balanced Stereo Audio Output

The following are the pinouts for connecting the output to a balanced or unbalanced stereo audio acceptor:

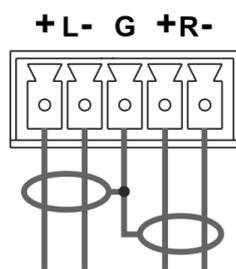


Figure 4: Connecting the Balanced Stereo Audio Output

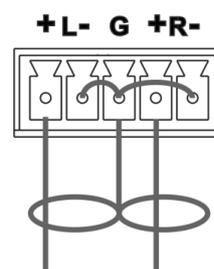


Figure 5: Connecting an Unbalanced Stereo Audio Acceptor to the Balanced Output

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## Microphone Pinout

The microphone 6mm jack pinout for a condenser microphone.

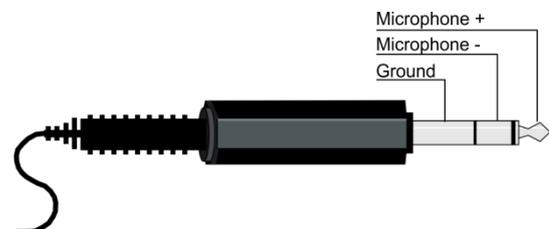


Figure 6: Condenser Microphone Pinout

The microphone 6mm jack pinout for a Dynamic microphone.



Figure 7: Dynamic Microphone Pinout

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## Connecting to VP-444 via RS-232

You can connect to the **VP-444** via an RS-232 connection using, for example, a PC. Note that a null-modem adapter/connection is not required.

To connect to the **VP-444** via RS-232, connect the RS-232 9-pin D-sub rear panel port on the product unit via a 9-wire straight cable (only pin 2 to pin 2, pin 3 to pin 3, and pin 5 to pin 5 need to be connected) to the RS-232 9-pin D-sub port on your PC

# Operating VP-444

The **VP-444** can be controlled via:

- The front panel buttons (see [Using Front Panel Buttons](#) on page [10](#)).
- The OSD menu (see [Using OSD Menu](#) on page [11](#)).
- RS-232 serial commands transmitted by a touch screen system, PC, or other serial controller (see [Connecting to VP-444 via RS-232](#) on page [8](#)).
- The ETHERNET (see [Operating via Ethernet](#) on page [14](#)).
- The infrared remote control transmitter (see [Controlling via Infrared Remote Control Transmitter](#) on page [17](#)).

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## Using Front Panel Buttons

The **VP-444** includes the following front panel buttons:

- Input selector buttons for selecting the required input: HDMI (1 to 10) and PC (1 and 2).
- MUTE and FREEZE buttons.
- MENU, ENTER, and up, down, left and right arrow buttons.
- RESET TO XGA/720p and PANEL LOCK buttons.

## Auto Adjust Feature

The auto adjust feature is implemented every time the input is switched to VGA or when the input resolution changes, via the FINETUNE menu (see [MAIN MENU](#) on page [11](#)).

## Setting the Resolution to XGA/720p

Press to reset the video resolution to XGA or 720p



This is useful, for example, when the scaler outputs at a resolution which is not recognized by the display.

To set the resolution from the front panel:

- Press and hold **RESET TO XGA/720P** for about 5 seconds to toggle the video resolution between XGA and 720p.

## Locking the Front Panel Buttons

The front panel buttons can be locked (disabled) to prevent unintentional button pressing.

To lock the front panel buttons:

- Press and hold **PANEL LOCK** for about 5 seconds.  
The Panel Lock button lights red and the front panel buttons are locked.

**To unlock the front panel buttons:**

- Press and hold **PANEL LOCK** for about 5 seconds.  
The Panel Lock button light goes out and the front panel buttons are unlocked.



The front panel buttons can also be locked via the Advanced webpage (see [Defining Panel Lock Button](#) on page 31).

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## Using OSD Menu

The control buttons let you control the **VP-444** via the OSD menu. Press:

- **MENU** to enter the menu.  
The default timeout is set to 10 seconds.
- **ENTER** to accept changes and to change the menu settings.
- Arrow buttons to move through the OSD menu, which is displayed on the video output.

On the OSD menu, select EXIT to exit the menu.

## MAIN MENU

Mode	Function																																																				
<b>OUTPUT</b>																																																					
SOURCE:	Select the input: HDMI 1, HDMI 2, HDMI 3, HDMI 4, HDMI 5, HDMI 6, HDMI 7, HDMI 8, HDMI 9, HDMI 10, PC1 or PC2																																																				
SIZE:	Select the image size: FULL, OVER SCAN, UNDER 1, UNDER 2, LETTER BOX, PAN SCAN or BEST FIT																																																				
RESOLUTION:	Select the output resolution from the menu:																																																				
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	NATIVE - Select NATIVE to select the output resolution from the EDID of the connected HDMI monitor																																																				
<b>PICTURE</b>																																																					
CONTRAST:	Set the contrast (the range and default values vary according to the input signal)																																																				
BRIGHTNESS:	Set the brightness (the range and default values vary according to the input signal)																																																				
RED	Set the red shade																																																				
GREEN	Set the green shade																																																				
BLUE	Set the blue shade																																																				

Mode	Function
HUE	Set the color hue (not applicable for VGA inputs)
SATURATION	Set the color saturation (not applicable for VGA inputs)
SHARPNESS	Set the sharpness of the picture (not applicable for VGA inputs)
NOISE REDUCTION	Select the noise reduction: OFF, LOW, MID (middle) and HIGH (not applicable for VGA inputs)
FINETUNE	Enabled for VGA: AUTO ADJUST (NO/YES), H-POSITION, V-POSITION, PHASE, CLOCK, WXGA/XGA, RESET (NO/YES)
<b>AUDIO</b>	
INPUT VOLUME:	Set the volume separately for each input: HDMI 1, HDMI 2, HDMI 3, HDMI 4, HDMI 5, HDMI 6, HDMI 7, HDMI 8, HDMI 9, HDMI 10, PC1 and PC2 Not applicable for embedded HDMI inputs
OUTPUT VOLUME:	Set the output volume
DELAY	Select the audio delay time: OFF, 40ms, 110ms and 150ms
MUTE	Select the sound mute options: ON, OFF (default)
EMBEDDED AUDIO:	Select the audio source of the HDMI 1 to HDMI 10 inputs: AUTOMATIC (default): the embedded audio on the HDMI input is selected for an HDMI signal, or the analog audio input is selected if the input is not HDMI (for example, for a DVI input signal) EMBEDDED: the embedded audio in the HDMI signal is selected ANALOG: the analog audio input is selected
MIC SETTINGS	MIC MODE – set the mode to OFF, MIXER, TALKOVER or MIC ONLY. MIC SELECT – select MIC1, MIC2 or BOTH When in TALKOVER mode, set the: DEPTH [%] – to determine the decrease of the audio level during microphone 1 takeover (press + to further decrease the talkover audio output level; press – to lessen the talkover output audio decrease level) TRIGGER – to determine the microphone threshold level that triggers the audio output-level decrease. ATTACK TIME – to set the transition time of the audio level reduction after the signal rises above the threshold level HOLD TIME – to define the time period talkover remains active although the signal falls below the threshold level (for a short period of time) RELEASE TIME – to define the transition time for the audio level to return from its reduced level to its normal level after the Hold Time period MIC GAIN BOOST – set to ON or OFF. Some versions of the <b>VP-444</b> include this selection. In the case that the setting selected is not supported by the hardware of the unit, the mic may be disabled
MIC VOLUME	Set the microphone volume for MIC1 and MIC2
NOISE MUTE	Set to ON or OFF. ON: Unit enables the audio output only after validating that there is audio present on the input. (Note that the unit takes 1 – 2 seconds to detect the presence of audio, so there is a delay before the audio is heard after switching to a new input). OFF: The unit does not check the validity of the audio. Audio is always enabled and there is no delay before the audio is heard after switching inputs.
<b>ADVANCED</b>	
HDCP ON INPUT	Select the HDCP option for the HDMI input: either ON (default) or OFF. Setting HDCP support to enabled (ON) on the HDMI input allows the source to transmit a non-HDCP signal if required (for example, when working with a Mac computer)
HDCP ON OUTPUT	Set HDMI OUT1 and HDMI OUT2: Select FOLLOW INPUT or FOLLOW OUTPUT (default) to define whether the HDCP will follow the input or the output

Mode	Function	
	When FOLLOW INPUT is selected, it changes its HDCP output setting (for the HDMI output) according to the HDCP of the input. This option is recommended when the HDMI output is connected to a splitter/switcher When FOLLOW OUTPUT is selected, the scaler matches its HDCP output to the HDCP setting of the HDMI acceptor to which it is connected	
AUTO SYNC OFF	Turn to DISABLE (default), FAST (for almost immediate shut down if no input is present – about 10 seconds) or SLOW (for shutdown after about 2 minutes). This is useful, for example, when the output is connected to a projector, and the projector will automatically shut down when it has no input	
OSD	H POSITION	Set the horizontal position of the OSD
	V POSITION	Set the vertical position of the OSD
	TIMER	Set the timeout period in seconds
	TRANSPARENCY	Set the OSD background between 100 (transparent) and 0 (opaque)
	DISPLAY	Select the information shown on the screen during operation: INFO (default): the information is shown for 10 seconds ON: the information is shown permanently OFF: the information is not shown
MUTE FOLLOWS FREEZE	Set to ON (default) to have MUTE follow FREEZE. Otherwise set to OFF	
MUTE BUTTON DEFINE:	Define the MUTE button to function as MUTE, BLANK or BLANK AND MUTE	
AUTO SWITCHING	MODE	Set the auto switching mode to OFF, AUTO SCAN (default) or LAST CONNECTED. PRIORITY (below) is enabled when AUTO SCAN is selected When one of the auto switching modes is selected (AUTO SCAN or LAST CONNECTED), audio is enabled only when a video signal is detected
	SCAN PRIORITY	Set to HDMI (default) to begin scan with HDMI1 or to PC to begin scan with PC1
ETHERNET	IP MODE	Set the IP mode to DHCP or STATIC IP
	STATIC IP ADDRESS	(fill in if STATIC IP (above) is selected:
	IP ADDRESS	Enter the IP address (192.168.1.39)
	SUBNET	Enter the subnet (255.255.0.0)
	GATEWAY	Enter the gateway (0.0.0.0)
	CONTROL PORT	Enter the control port
	MAC ADDRESS	MAC address
LOCK MODE	ALL	Lock all the front panel buttons
	MENU ONLY	Lock the MENU (and navigation) front panel buttons only
	ALL & SAVE	Lock all the front panel buttons. The lock status is saved when the <b>VP-444</b> is powered down
	MENU ONLY & SAVE	Lock the MENU (and navigation) front panel buttons only. The lock status is saved when the <b>VP-444</b> is powered down
TIMING SHIFT	Set to ON (recommended): Implements a small shift on the horizontal sync to improve output picture stability. Set to OFF if the display shows an instability at the selected output resolution	
<b>FACTORY RESET</b>		

Mode	Function
	Select NO (default) or YES
INFORMATION	
	Displays the INPUT and OUTPUT resolutions, INPUT and OUTPUT HDCP status, the IP ADDRESS and the FIRMWARE and PCB revision numbers

## Operating via Ethernet

You can connect to the **VP-444** via Ethernet using either of the following methods:

- Directly to the PC using a crossover cable (see [Connecting the Ethernet Port Directly to a PC](#) on page 14)
- Via a network hub, switch, or router, using a straight-through cable (see [Connecting the Ethernet Port via a Network Hub or Switch](#) on page 16)



If you want to connect via a router and your IT system is based on IPv6, speak to your IT department for specific installation instructions.

## Connecting the Ethernet Port Directly to a PC

You can connect the Ethernet port of the **VP-444** directly to the Ethernet port on your PC using a crossover cable with RJ-45 connectors.



This type of connection is recommended for identifying the **VP-444** with the factory configured default IP address.

After connecting the **VP-444** to the Ethernet port, configure your PC as follows:

1. Click **Start > Control Panel > Network and Sharing Center**.
2. Click **Change Adapter Settings**.
3. Highlight the network adapter you want to use to connect to the device and click **Change settings of this connection**.

The Local Area Connection Properties window for the selected network adapter appears as shown in [Figure 8](#).

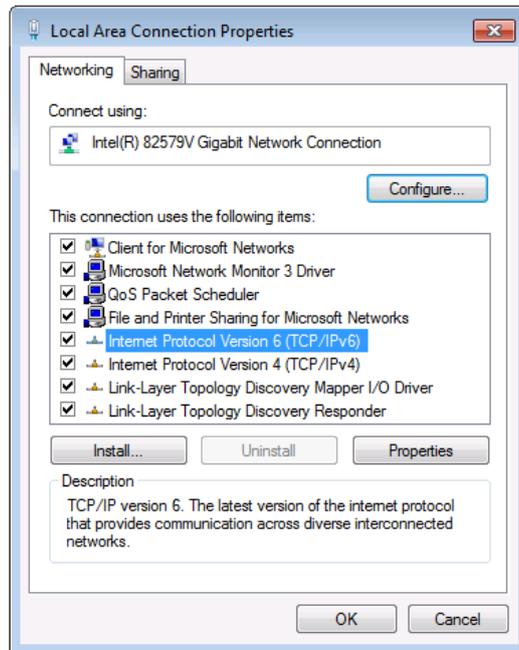


Figure 8: Local Area Connection Properties Window

4. Highlight either **Internet Protocol Version 6 (TCP/IPv6)** or **Internet Protocol Version 4 (TCP/IPv4)** depending on the requirements of your IT system.
5. Click **Properties**.  
The Internet Protocol Properties window relevant to your IT system appears.

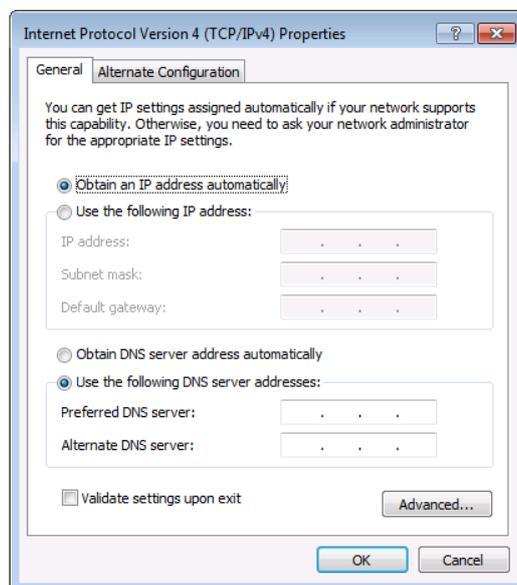


Figure 9: Internet Protocol Version 4 Properties Window

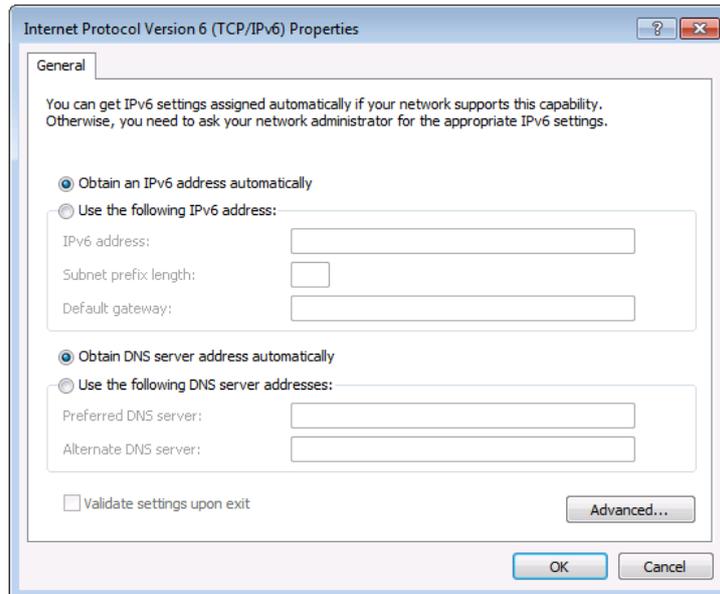


Figure 10: Internet Protocol Version 6 Properties Window

6. Select **Use the following IP Address** for static IP addressing and fill in the details as shown in [Figure 11](#).

For TCP/IPv4 you can use any IP address in the range 192.168.1.1 to 192.168.1.255 (excluding 192.168.1.39) that is provided by your IT department.

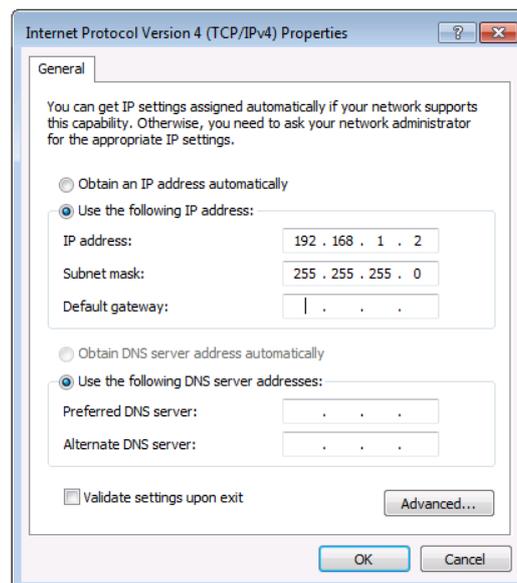


Figure 11: Internet Protocol Properties Window

7. Click **OK**.
8. Click **Close**.

## Connecting the Ethernet Port via a Network Hub or Switch

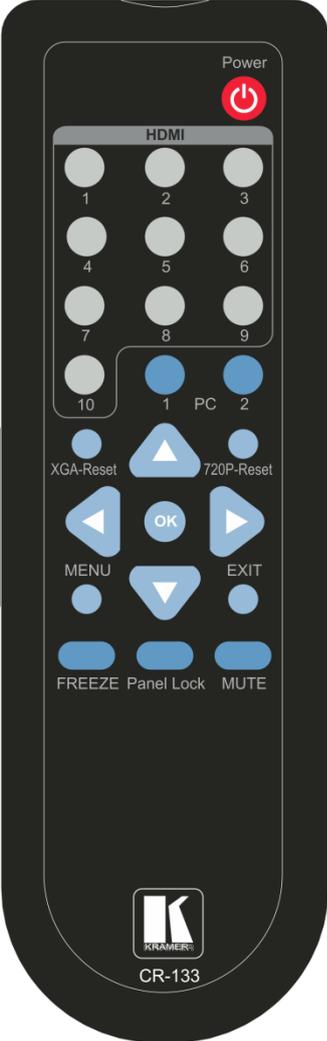
You can connect the Ethernet port of the **VP-444** to the Ethernet port on a network hub or using a straight-through cable with RJ-45 connectors.

## Configuring the Ethernet Port

You can set the Ethernet parameters via the embedded Web pages.

# Controlling via Infrared Remote Control Transmitter

You can control the **VP-444** from the infrared remote control transmitter:



Keys	Function
POWER	Toggle the power save mode ON or OFF
HDMI	Select the HDMI input (from 1 to 10)
PC1	Select the PC 1 input
PC2	Select the PC 2 input
XGA Reset	Reset the resolution to XGA
720p Reset	Reset the resolution to 720p
	Four navigation keys When not in the OSD, the left and right arrows also control the output volume
OK	Press to accept changes Press also to auto adjust the picture (see <a href="#">Auto Adjust Feature</a> on page 10)
MENU	Enter the OSD menu
EXIT	EXIT the menu
FREEZE	Freeze/unfreeze the output video image
Panel Lock	Lock/unlock the front panel buttons
MUTE	Toggle between muting (blocking out the sound) and enabling the audio output

Figure 12: Infrared Remote Control Transmitter

# Using Embedded Web Pages

The **VP-444** can be operated remotely using the embedded Web pages. The Web pages are accessed using a Web browser and an Ethernet connection.

Before attempting to connect:

- Perform the procedures in [Operating via Ethernet](#) on page [14](#)
- Ensure that your browser is supported

The following operating systems and Web browsers are supported:

<b>Windows 7:</b>	
Chrome version 35	Internet Explorer version 10
Firefox version 30	
<b>Mac (PC):</b>	
Chrome version 35	Internet Explorer version 10

The **VP-444** enables performing the following:

- [Loading and Saving Configurations](#) on page [19](#).
- [Entering Standby Mode](#) on page [20](#).
- [Configuring Video Input Settings](#) on page [20](#).
- [Selecting Input to be Switched to Outputs](#) on page [22](#).
- [Freezing or Clearing Video Output](#) on page [22](#).
- [Adjusting Microphone and Output Volume](#) on page [22](#).
- [Configuring Network Settings](#) on page [23](#).
- [Upgrading Firmware](#) on page [24](#).
- [Configuring Video Output Settings](#) on page [25](#).
- [Configuring HDCP per Input/Output](#) on page [26](#).
- [Managing EDID](#) on page [27](#).
- [Adjusting Audio Input Settings](#) on page [28](#).
- [Adjusting Microphone Settings](#) on page [29](#).
- [Configuring Automatic Switching Settings](#) on page [30](#).
- [Defining Panel Lock Button](#) on page [31](#).
- [Viewing About Page](#) on page [31](#).

---

## To Browse VP-444 Web Pages

To browse the VP-444 Web pages:

1. Open your Internet browser.

2. Type the IP number of the device in the Address bar of your browser. For example, the default IP number:



The Input Select Web page appears.



Some features might not be supported by some mobile device operating systems.

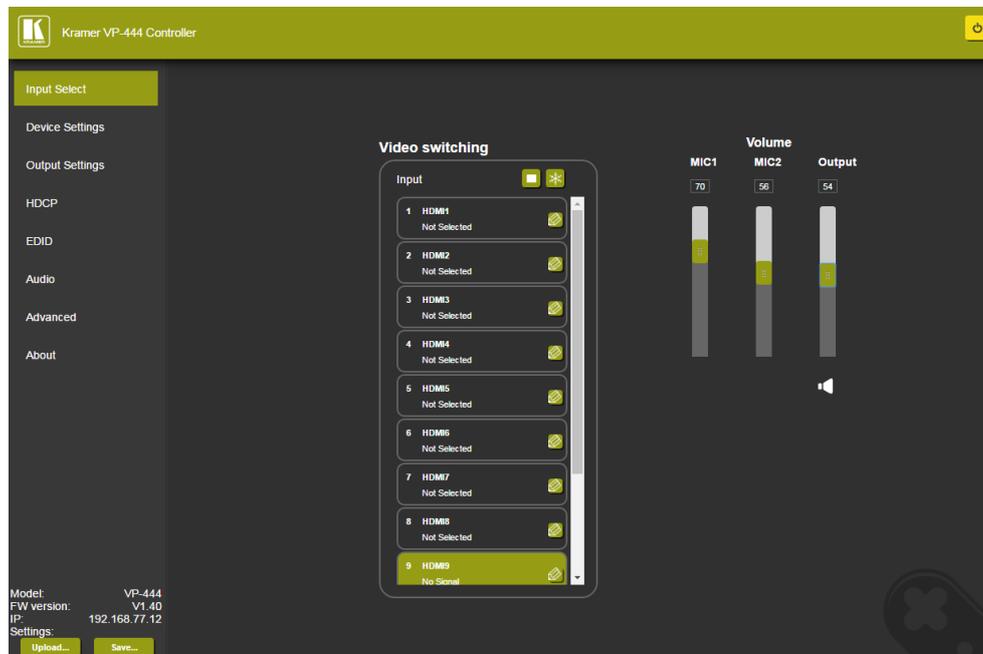


Figure 13: Controller Application Page with Navigation List on Left

3. Click the tabs on the left side of the screen to access the relevant web page.

## Loading and Saving Configurations

**VP-444** enables you to save a configuration for easy recall in the future.

### Saving Configurations

To save the current configuration:

1. Configure the device as required.
2. Click **Input Select** on the Navigation List.  
The Input Select page appears ([Figure 13](#)).
3. Click **Save**.  
The Save File window appears.



When using Chrome, the file is automatically saved in the Downloads folder.

## Loading Configurations

To load a configuration:

1. Click **Input Select** on the Navigation List.  
The Input Select page appears ([Figure 13](#)).
2. Click **Upload**.  
An Explorer window opens.
3. Select the required file and click **Open**.  
The device is configured according to the saved preset.

---

## Entering Standby Mode

**VP-444** features a power saving standby mode that consumes less power without having to power off.

Standby mode puts the device in a low power consumption mode without turning it off.

To toggle between standby mode and normal operation:

- Click the power icon on the right-hand side of the web pages header.  
When in standby mode, the icon displays a gray background:



Figure 14: The **VP-444** Standby Mode

---

## Configuring Video Input Settings

**VP-444** enables you to individually configure settings for each of the video inputs.

To configure video input settings:

1. Click **Input Select** on the Navigation List.  
The Input Select page appears ([Figure 13](#)).

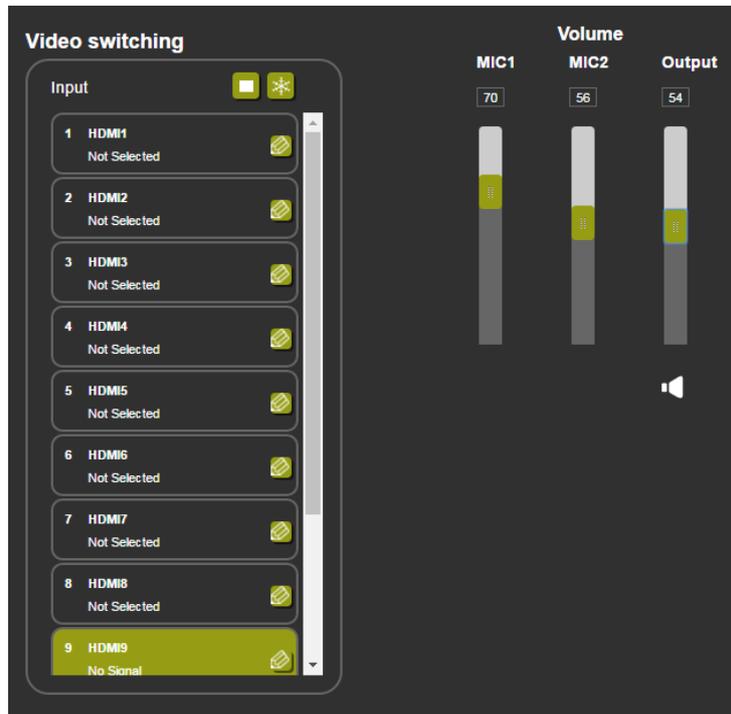


Figure 15: Web Pages – Input Select Page

- In the Video Switching area, click the edit icon on the right side of the relevant video input.  
The settings window appears for the selected input.

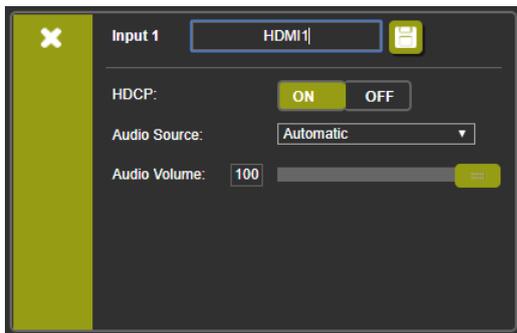


Figure 16: Setting Window for Input 1

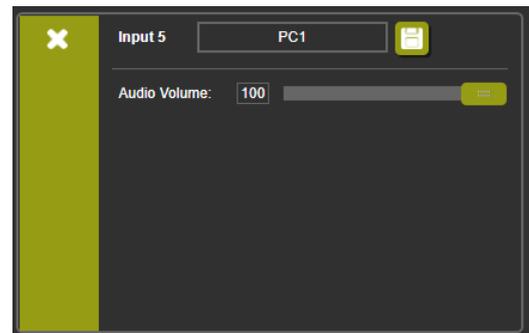


Figure 17: Setting Window for Input 5

- If required, enter a new name and click the save icon to change the name of the input that appears in the web pages.
- Click **ON/OFF** to enable/disable the HDCP decryption on the selected input.



If HDCP is disabled on an input, an HDCP encrypted source will not pass through the unit.

- Select an Audio Source:
  - Automatic – The embedded audio on the HDMI input is selected for an HDMI signal, or the analog audio input is selected if the input is not HDMI (for example, for a DVI input signal).
  - Analog – The analog audio input is selected.
  - Embedded – The embedded audio in the HDMI signal is selected.
- Adjust the volume using the slider or entering a value.
- Upon completion, save the changes (📄) and click the exit icon (✕).

---

## Selecting Input to be Switched to Outputs

To select the input to be switched to the outputs using the web pages:

1. Click **Input Select** on the Navigation List.  
The Input Select page appears ([Figure 13](#)).
2. In the Video Switching area, click the required input button.  
The input button turns green, the corresponding INPUT LED on the front panel lights and the selected input is switched to the output.

---

## Freezing or Clearing Video Output

To freeze or clear the video output, do one of the following:

1. Click **Input Select** on the Navigation List.  
The Input Select page appears ([Figure 13](#)).
2. In the Video Switching area, click one of the following:
  -  – Freezes the currently displayed video frame.
  -  – Clears the video output from the display; the display goes blank.

---

## Adjusting Microphone and Output Volume



The microphones and output volume can also be adjusted from the Audio web page.

To adjust the microphone and output volume:

1. Click **Input Select** on the Navigation List.  
The Input Select page appears ([Figure 13](#)).
2. Use the slider controls in the Volume area of the web page.
3. Click  to mute the output.

## Configuring Network Settings

**VP-444** enables you to use DHCP mode or to turn DHCP mode off and change network settings.

To configure network settings:

1. Click **Device Settings** on the Navigation List.  
The Device Settings page appears.

**Device Settings**

**Model:** VP-444

**Name:** Kramer-0000000000000000

**MAC Address:** 00-1d-56-01-bd-56

**Firmware Version:** V1.40

**Firmware Update:**  No file chosen

---

DHCP On

**DHCP IP Address:**

**Static IP Address:**

**Gateway:**

**Subnet:**

**Control Port:**

---

Figure 18: The Device Settings Page

2. Change the network settings as required and click **Set changes**.

–OR–

Select the **DHCP On** check box and click **Set changes**.

A message appears asking you to confirm the setting change.



Figure 19: Device Settings Page – Setting Change Confirmation

3. Click **OK** to confirm the change.  
The current web page session is disconnected. To access the web pages, reload with the new setting.
4. Click **Soft Factory Reset** to restart the unit.

## Upgrading Firmware

To upgrade the VP-444 firmware:

1. Click **Device Settings** on the Navigation List.  
The Device Settings page appears ([Figure 18](#)).
2. Under Firmware Update, click **Choose File**.  
A file browser appears.
3. Open the required upgrade file.  
The file name appears on the web page.
4. Click **Upgrade**.

The new firmware is uploaded:

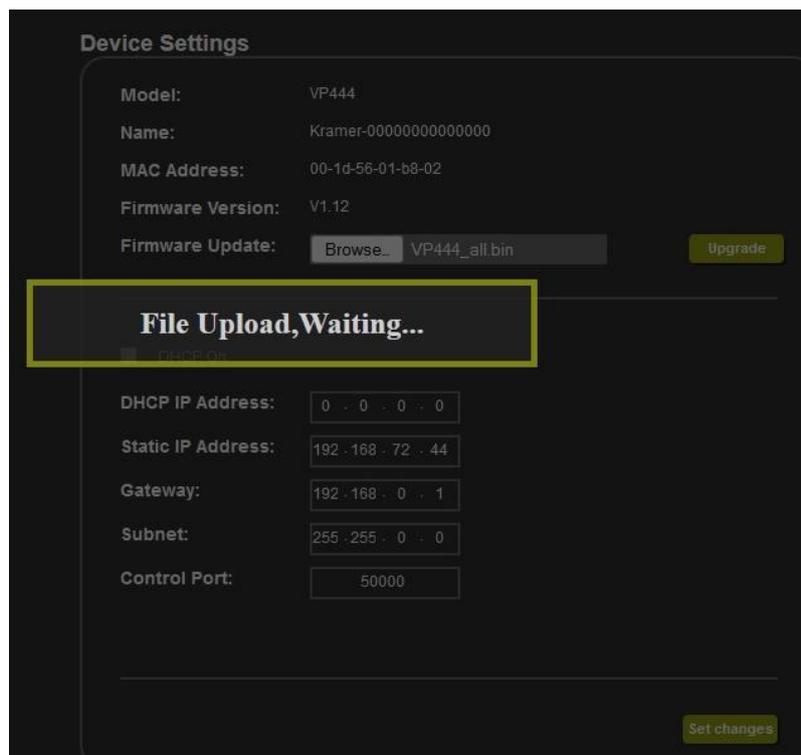


Figure 20: Device Settings Page – Uploading the New Firmware File

5. Once the file is uploaded follow the instructions on the web page:  
The new firmware is uploaded:

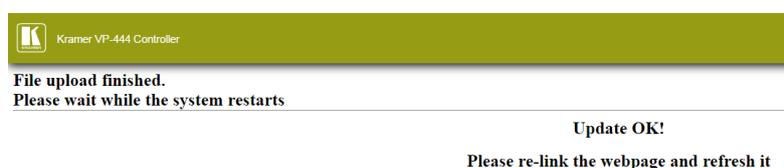


Figure 21: Device Settings Page – New Firmware File Uploading Complete

6. Restart the device, re-enter the IP address, and refresh the web page.
7. Make sure that the new version appears on the lower left side of the web page.

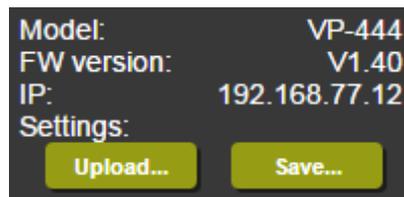


Figure 22: Current Firmware Information Display

## Configuring Video Output Settings

VP-444 enables you to configure settings for the video that is passed through the HDBT and HDMI outputs.

To configure video output settings:

1. Click **Output Settings** on the Navigation List.  
The Output Settings page appears.

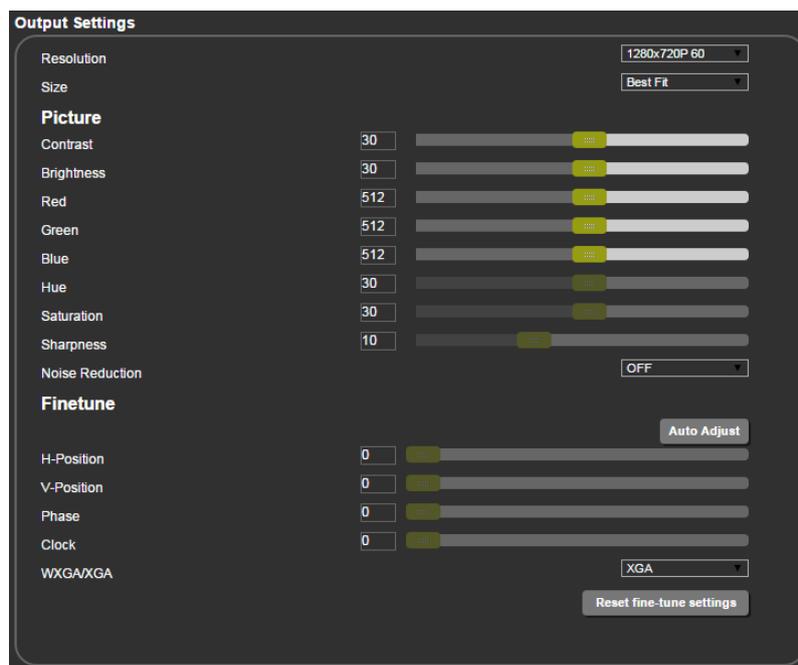


Figure 23: The Output Settings Page

2. Open the Resolution drop-down box and select the required output resolution or select Native OUT1 or Native OUT2 to set the output resolution to match the native resolution of the device connected to HDMI OUT1 or HDMI OUT2.



The output settings, include the Resolution and Size, the Finetune items (which are enabled for VGA inputs), and the picture settings.

3. Open the Size drop-down box and select the video size on the display:
  - Over Scan
  - Full

- Best Fit
  - Pan Scan
  - Letter Box
  - Under 2
  - Under 1
4. In the Picture area, use the slider controls to adjust the display picture quality.
  5. Open the Noise Reduction drop-down box and select the level of noise reduction.
  6. When the active input is VGA, in the Finetune area, click **Auto Adjust** to automatically adjust the video output or use the slider controls to adjust the following:
    - H-Position – horizontal position of the video on the display screen
    - V-Position – vertical position of the video on the display screen
    - Phase
    - Clock

---

## Configuring HDCP per Input/Output

VP-444 enables you to configure HDCP individually for each input/output.

To configure HDCP:

1. Click **HDCP** on the Navigation List.  
The HDCP page appears.

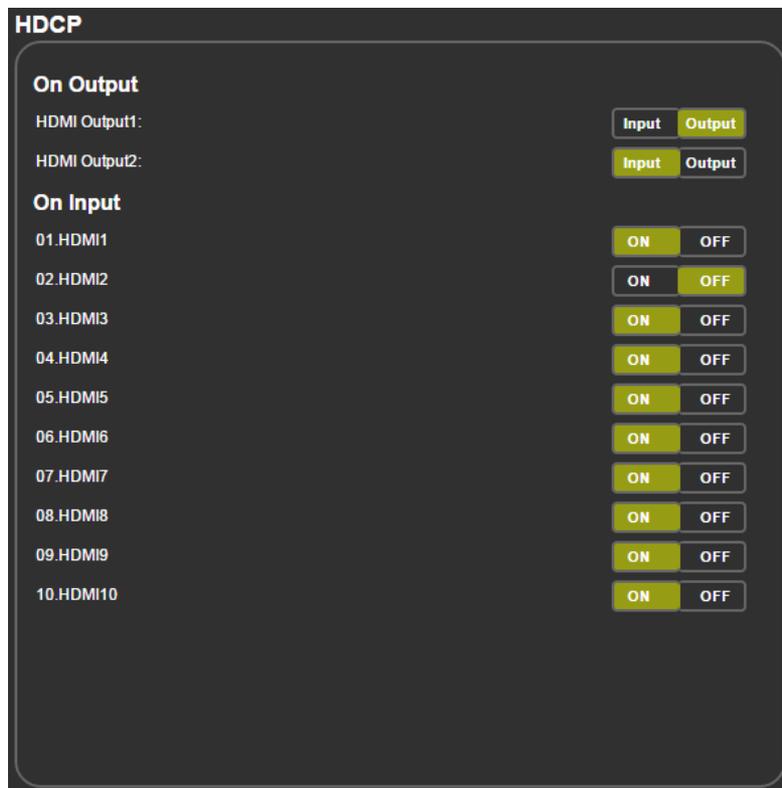


Figure 24: The HDCP Page

2. In the On Output area, click one of the following for each of the outputs:
  - **Input** – signal only sent with HDCP encryption when the input includes HDCP encryption.
  - **Output** – signal is always sent with HDCP encryption when the output supports it, even if the input does not include encryption.
3. In the On Input area, click **ON** or **OFF** for each of the four inputs to turn on or off the HDCP encryption for that input.

## Managing EDID

**VP-444** enables you to individually configure and manage EDID settings for each of the 6 inputs.

To manage EDID:

1. Click **EDID** on the Navigation List.  
The EDID page appears.

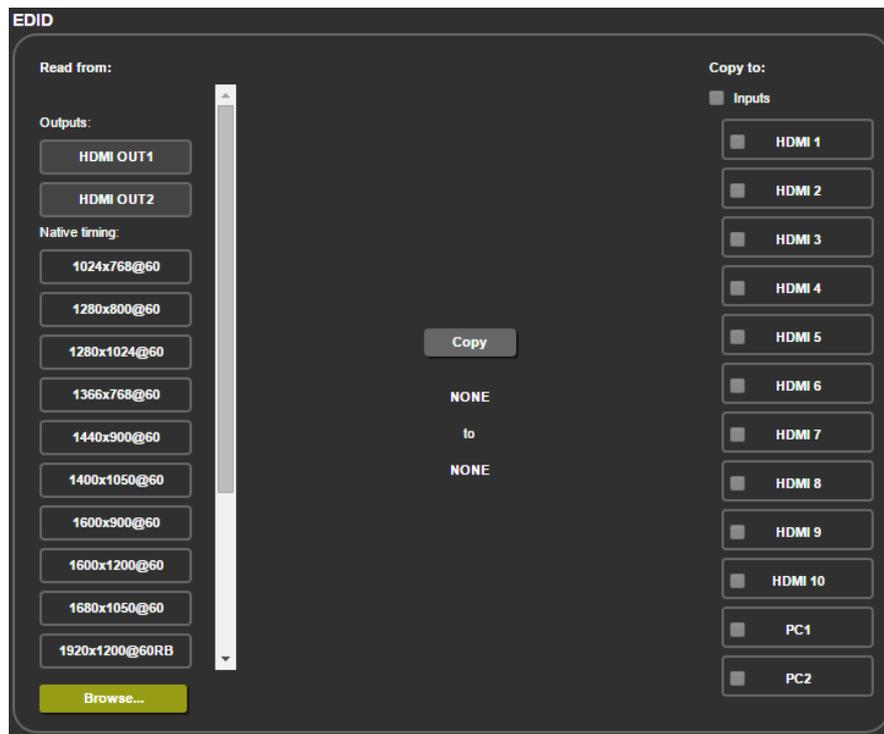


Figure 25: The EDID Page

2. Under Read from, click the required EDID source or click **Browse** to use an EDID configuration File.
3. Under Copy to, click the inputs to copy the selected EDID to.  
The Copy button is enabled.
4. Click **Copy**.

The selected EDID is copied to the selected inputs and the Copy EDID Results message appears.



Figure 26: The EDID Page –The Copy EDID Results

- 5. Click **Close**.

## Adjusting Audio Input Settings

**VP-444** enables you to individually define the audio volume and source for each of the inputs.

To adjust audio input settings:

- 1. Click **Audio** on the Navigation List.  
The Audio page appears.



Figure 27: The Audio Settings Page

- 2. For Delay, select a time value in milliseconds.

3. In the Source area, select an audio source option for each of the HDMI inputs:
  - Automatic – the embedded audio on the HDMI input is selected for an HDMI signal, or the analog audio input is selected if the input is not HDMI (for example, for a DVI input signal).
  - Analog – the analog audio input is selected.
  - Embedded – the embedded audio in the HDMI signal is selected.
4. In the Input area, use the slider controls or enter a number from 0 to 100 in the field to adjust the volume of each of the inputs.

---

## Adjusting Microphone Settings

**VP-444** enables you to define settings for a microphone connected to the MIC jack such as talkover/mixer mode, Depth and Trigger.

### To adjust microphone settings:

1. Click **Audio** on the Navigation List.  
The Audio page appears (see [Figure 27](#)).
  2. In the Mic Settings area, open the drop-down box and select one of the following mic modes:
    - Mixer – Microphone audio plays together with the main output audio.
    - Talkover – Decreases the main output audio volume when the microphone is active.
-  When Talkover mode is selected, use the slider controls or enter a number in the fields to adjust the microphone settings.
- Mic only – Microphone audio overrides the main output audio.
  - Off – Microphone is disabled.

## Configuring Automatic Switching Settings

To configure automatic switching settings:

1. Click **Advanced** on the Navigation List.  
The Advanced page appears.

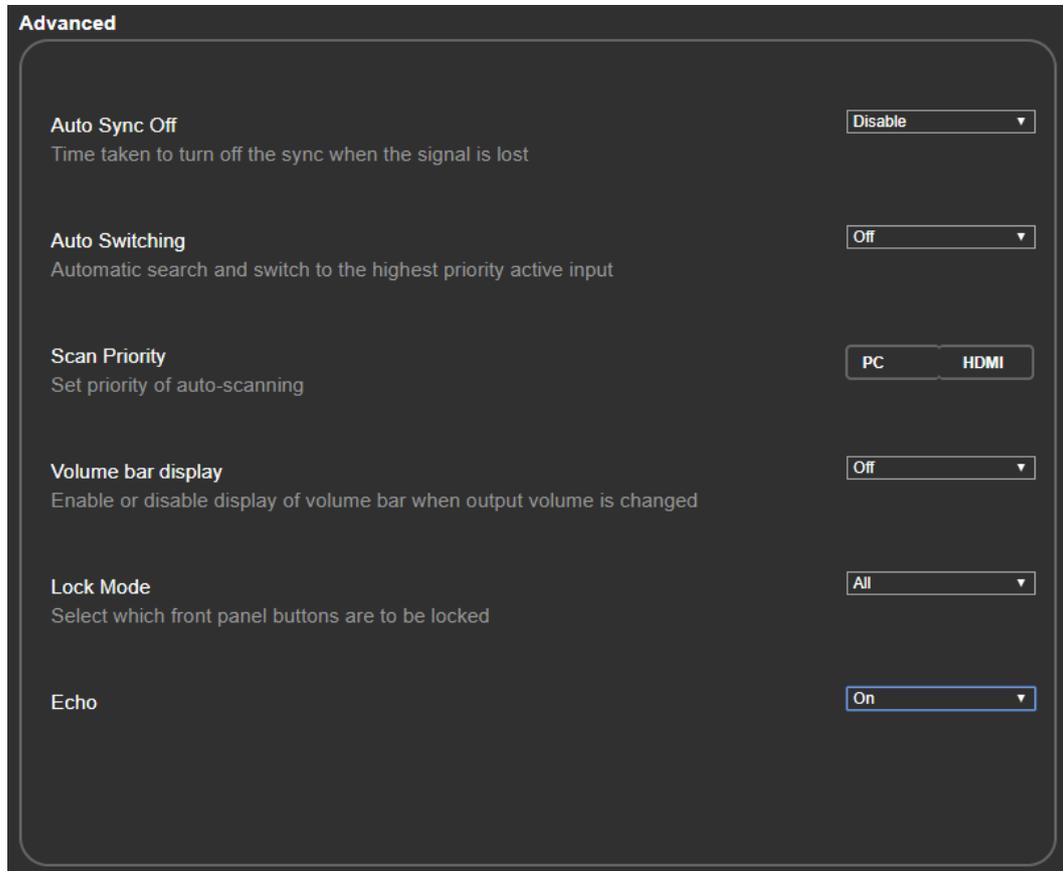


Figure 28: The Advanced Page

2. Define Auto Sync Off:
  - Disable – disable the Auto Sync Off feature.
  - Fast – shuts down after about 10 seconds.
  - Slow – shuts down after about 2 minutes.
3. Define Auto Switching:
  - Off – Disable auto switching.
  - Auto Scan– Set auto-scanning and select from Scan Priority (below) which input to begin the scanning.
  - Last connected – When detecting that a source is connected to an input (which previously had no signal), automatically switch to that input.
4. Set Scan Priority to PC or HDMI (once the auto scan is enabled).
5. Set Volume bar display – enable or disable display of volume bar when output is changed.

---

## Defining Panel Lock Button

Define which buttons are disabled when you click the PANEL LOCK button on the front panel.

To define the Panel Lock button:

1. Click **Advanced** on the Navigation List.  
The Advanced page appears.
2. Define Lock Mode:
  - All
  - Menu Only
  - All & Save
  - Menu Only & Save

---

## Viewing About Page

The VP-444 About page lets you view the Web page version and Kramer Electronics Ltd details.



Figure 29: The About Page

# Technical Specifications

Inputs:	10 HDMI connectors (HDMI, HDCP version 1.4) 2 VGA on a 15-pin HD connector Unbalanced stereo audio on 12 3-pin terminal block connectors 2 Mic on 6mm jack connectors (with selectable 48V phantom power)
Outputs:	2 HDMI connectors (HDMI, HDCP version 1.4) 1 S/PDIF on an RCA connector Unbalanced stereo audio on a 5-pin terminal block connector
Bandwidth:	Up to 1080p, UXGA
Switching time between Inputs:	2 to 3 seconds
Video Latency:	Less than 2 frames
Output Resolutions:	Native, 640x480 @60Hz, 800x600 @60Hz, 1024x768 @60Hz, 1280x768 @60Hz, 1360x768 @60Hz, 1280x720 @60Hz, 1280x800 @60Hz, 1280x1024 @60Hz, 1440x900 @60Hz, 1400x1050 @60Hz, 1680x1050 @60Hz, 1600x1200 @60Hz, 1920x1080 @60Hz, 1920x1200 @60Hz, 480p @60Hz, 720p @60Hz, 1080i @60Hz, 1080p @60Hz, 576p @50Hz, 720p @50Hz, 1080i @50Hz, 1080p @50Hz
Controls:	HDMI 1 to HDMI 10 and PC 1 to PC 2 input selector buttons; Freeze, mute buttons; Menu and navigation buttons, Reset to XGA/720p and lock buttons, RS-232, IR, Ethernet (OSD and Web pages) USB for firmware upgrading
Power Consumption:	100-240V AC, 22VA max.
Operating Temperature:	0° to +40°C (32° to 104°F)
Storage Temperature:	-40° to +70°C (-40° to 158°F)
Humidity:	10% to 90%, RHL non-condensing
Dimensions:	19" x 7" x 1U (W, D, H) rack mountable
Shipping Dimensions:	55cm x 27.6cm x 10.7cm (21.6 x 10.9 x 4.2") W, D, H
Weight:	1.8 kg (4lbs) approx.
Shipping Weight:	2.5kg (5.5lbs) approx.
Included Accessories:	Power cord, rack ears, IR remote control
Specifications are subject to change without notice at <a href="http://www.kramerav.com">www.kramerav.com</a>	

## Default Communication Parameters

RS-232	
Baud Rate:	9,600
Data Bits:	8
Stop Bits:	1
Parity:	None
Ethernet	
To reset the IP settings to the factory reset values go to: Menu-> Factory-> RESET->Change the option to YES and press Enter	
IP Address:	192.168.1.39

Subnet mask:	255.255.255.0
Default gateway:	192.168.1.254
TCP Port #:	Not supported
Default UDP Port #:	50000
Maximum UDP Ports:	4
<b>Full Factory Reset</b>	
OSD	Go to: Menu-> Factory-> RESET->Change the option to YES and press Enter
<b>RS-232/Ethernet (UDP) Command Protocol</b>	
Command Format:	ASCII protocol 3000
Example (Route the video HDMI3 input to the output ports):	#ROUTE 12,1,2<cr>

## Input Resolutions

Resolution/Refresh Rate	PC 1/PC 2	HDMI 1-10
640x480 (60/72/75/85Hz)	Yes	Yes
800x600 (56/60/72/75/85Hz)	Yes	Yes
1024x768 (60/70/75/85Hz)	Yes	Yes
1280x720 60Hz	Yes	Yes
1280x800 60Hz	Yes	Yes
1280x1024 (60/75/85Hz)	Yes	Yes
1366x768 60Hz	Yes	Yes
1400x1050 60Hz	Yes	Yes
1440x900 60Hz	Yes	Yes
1600x1200 60Hz	Yes	Yes
1600x900 RB 60Hz	Yes	Yes
1680x1050 RB 60Hz	Yes	Yes
1920x1080 60Hz	Yes	Yes
1920x1200 RB 60Hz	Yes	Yes
480I/576I	No	Yes
480P/576P	No	Yes
720P(50/60Hz)	No	Yes
1080I(50/60Hz)	No	Yes
1080P(24/25/30Hz)	No	Yes
1080P(50/60Hz)	No	Yes

# RS-232/Ethernet (UDP)

## Communication Protocol

The **VP-444** can be operated using serial commands from a PC, remote controller, or touch screen. The unit communicates using the default Kramer Protocol 3000.

- Kramer Protocol 3000 syntax (see [Kramer Protocol 3000 Syntax](#) on page [34](#))
- Kramer Protocol 3000 commands (see [Kramer Protocol 3000 – Command List](#) on page [36](#))
- Kramer Protocol 3000 detailed commands (See [Kramer Protocol 3000 – Detailed Commands](#) on page [37](#))

---

## Kramer Protocol 3000 Syntax

Protocol 3000 communicates at a data rate of 9,600 baud, no parity, 8 data bits and 1 stop bit.

### Host Message Format

Start	Address (optional)	Body	Delimiter
#	<i>Destination_id@</i>	Message	CR

#### Simple Command

Command string with only one command without addressing:

Start	Body	Delimiter
#	Command SP <i>Parameter_1,Parameter_2,...</i>	CR

#### Command String

Formal syntax with commands concatenation and addressing:

Start	Address	Body	Delimiter
#	<i>Destination_id@</i>	Command_1 <i>Parameter1_1,Parameter1_2,...</i> Command_2 <i>Parameter2_1,Parameter2_2,...</i> Command_3 <i>Parameter3_1,Parameter3_2,...</i> ...	CR

### Device Message Format

Start	Address (optional)	Body	delimiter
~	<i>Sender_id@</i>	Message	CR LF

#### Device Long Response

Echoing command:

Start	Address (optional)	Body	Delimiter
~	<i>Sender_id@</i>	Command SP [ <i>Param1 ,Param2 ...</i> ] result	CR LF

**CR** = Carriage return (ASCII 13 = 0x0D); **LF** = Line feed (ASCII 10 = 0x0A);

**SP** = Space (ASCII 32 = 0x20)

## Command Terms

### Command

A sequence of ASCII letters ('A'-'Z', 'a'-'z' and '-').

Command and parameters must be separated by at least one space.

### Parameters

A sequence of alphanumeric ASCII characters ('0'-'9', 'A'-'Z', 'a'-'z' and some special characters for specific commands). Parameters are separated by commas.

### Message string

Every command entered as part of a message string begins with a **message starting character** and ends with a **message closing character**.

**Note:** A string can contain more than one command. Commands are separated by a pipe ( '|') character.

### Message starting character

'#' – For host command/query

'~' – For machine response

### Device address (Optional, for K-NET)

K-NET Device ID followed by '@'

### Query sign

'?' follows some commands to define a query request.

### Message closing character

**CR** – For host messages; carriage return (ASCII 13)

**CRLF** – For machine messages; carriage return (ASCII 13) + line-feed (ASCII 10)

### Command chain separator character

When a message string contains more than one command, a pipe ( '|') character separates each command.

Spaces between parameters or command terms are ignored.

## Entering Commands

You can directly enter all commands using a terminal with ASCII communications software, such as HyperTerminal, Hercules, etc. Connect the terminal to the serial or Ethernet port on the Kramer device. To enter **CR** press the Enter key.

(**LF** is also sent but is ignored by command parser).

For commands sent from some non-Kramer controllers like Crestron, some characters require special coding (such as, /X##). Refer to the controller manual.

## Command Forms

Some commands have short name syntax in addition to long name syntax to allow faster typing. The response is always in long syntax.

## Command Chaining

Multiple commands can be chained in the same string. Each command is delimited by a pipe character ( '|' ). When chaining commands, enter the **message starting character** and the **message closing character** only once, at the beginning of the string and at the end.

Commands in the string do not execute until the closing character is entered.

A separate response is sent for every command in the chain. torture

## Maximum String Length

64 characters

---

## Kramer Protocol 3000 – Command List

Command	Short Form	Description
#		Protocol handshaking
#HELP		List of commands
#BUILD-DATE?		Read device build date
#FACTORY		Reset to factory default configuration
#MODEL?		Read device model
#PROT-VER?		Read device protocol version
#RESET		Reset device
#VERSION?		Read device firmware version
#SN?		Get serial number
#MENU-CMD		Switch audio and video
#NET-MAC?	NTMC?	Get MAC address
#NET-IP	NTIP	Set device IP address
#NET-IP?	NTIP?	Get device IP address
#NET-GATE	NTGT	Set Gateway IP
#NET-GATE?	NTGT?	Get Gateway IP
#NET-MASK	NTMSK	Set device subnet mask
#NET-MASK?	NTMSK?	Get device subnet mask
#NET-DHCP	NTDH	Set DHCP mode
#NET-DHCP?	NTDH?	Get DHCP mode
#ROUTE		Set layer routing
#ROUTE?		Get layer routing
#DISPLAY?		Get output HPD status
#LOCK-FP	LCK	Lock front panel
#LOCK-FP?	LCK?	GET Lock front panel
#HDCP-MOD		Set HDCP mode
#HDCP-MOD?		Get HDCP mode

Command	Short Form	Description
#VID-RES		Set input/output resolution
#VID-RES?		Get input/output resolution
#VMUTE		Set enable/disable video on output
#VMUTE?		Get video on output status
#VFRZ		Set freeze video on output
#VFRZ?		Get freeze on output status
#AUD-LVL		Set audio level
#AUD-LVL?		Get audio level
#MUTE		Mute the selected output
#MUTE?		Mute the selected output
#AUD-EMB		Set audio in video embedding status
#AUD-EMB?		Get audio in video embedding status
#SCLR-AS		Set the auto sync off timer
#SCLR-AS?		Get the auto sync off timer definition
#IMAGE-PROP		Chrome version 35
#IMAGE-PROP?		Chrome version 35
#SCLR-PCAUTO		Set PC auto sync of scaler
#SCLR-AUDIO-DELAY		Set the scaler audio delay
#SCLR-AUDIO-DELAY?		Get the scaler audio delay
#MIC-GAIN		Set the microphone gain
#MIC-GAIN?		Get the microphone gain
#TLK		Set audio talkover mode status
#TLK?		Get audio talkover mode status
#MIC-TLK		Set microphone talkover parameters
#MIC-TLK?		Get microphone talkover parameters
#STANDBY		Set Standby mode
#STANDBY?		Get Standby mode status
#MIC-SELECT		Select the microphone
#MIC-SELECT?		Get the microphone

---

## Kramer Protocol 3000 – Detailed Commands

This section describes the detailed commands list (see [Protocol 3000 Commands](#) on page 39) as well as the Port number key (see [Port Number Key](#) on page 37) and the video resolutions key (see [Input Resolutions key](#) on page 38).

### Port Number Key

Video	#	Audio input	#	Video Output	#
HDMI 1	0	HDMI 1	0	HDMI 1	0
HDMI 2	1	HDMI 2	1	HDMI 2	1
HDMI 3	2	HDMI 3	2		
HDMI 4	3	HDMI 4	3		
HDMI 5	4	HDMI 5	4		
HDMI 6	5	HDMI 6	5		
HDMI 7	6	HDMI 7	6		
HDMI 8	7	HDMI 8	7		
HDMI 9	8	HDMI 9	8		

HDMI 10	9	HDMI 10	9
PC 1	10	PC 1	10
PC 2	11	PC 2	11

## Input Resolutions key

#	Resolution	#	Resolution	#	Resolution
6	640x480 @60	36	1280x1024 @60	60	576I
8	640x480 @72	37	1280x1024 @75	61	576P
9	640x480 @75	38	1280x1024 @85	62	720P@50Hz
10	640x480 @85	41	1366x768 @60	63	720P@60Hz
11	800x600 @56	42	1400x1050 @60	64	1080I@50Hz
12	800x600 @60	44	1440x900 @60	65	1080I@60Hz
14	800x600 @72	46	1600x900 RB @60	66	1080P@24Hz
15	800x600 @75	47	1600x1200 @60	67	1080P@25Hz
16	800x600 @85	51	1680x1050 RB @60	68	1080P@50Hz
19	1024x768 @60	54	1920x1200 RB @60	69	1080P@60Hz
20	1024x768 @70	56	1280x800 @60	71	1080P@30Hz
22	1024x768 @75	58	480I	72	No signal
23	1024x768 @85	59	480P	255	UNSUPPORTED

## Output Resolutions Key

Number	Resolution	Number	Resolution
200	640x480 @60Hz	212	1920x1080 @60Hz
201	800x600 @60Hz	213	1920x1200 @60Hz
202	1024x768 @60Hz	214	480p @60Hz
203	1280x768 @60Hz	215	720p @60Hz
204	1360x768 @60Hz	216	1080i @60Hz
205	1280x720 @60Hz	217	1080p @60Hz
206	1280x800 @60Hz	218	576p @50Hz
207	1280x1024 @60Hz	219	720p @50Hz
208	1440x900 @60Hz	220	1080i @50Hz
209	1400x1050 @60Hz	221	1080p @50Hz
210	1680x1050 @60Hz	222	NATIVE OUT1
211	1600x1200 @60Hz	223	NATIVE OUT2

## Protocol 3000 Commands

#

Set: # End User Public  
 Get: - - -

Description	Syntax
-------------	--------

Set: Protocol handshaking	# <input type="text"/>
---------------------------	------------------------

Get: -	-
--------	---

Response
----------

~ <input type="text"/> @ <input type="text"/> OK <input type="text"/>
---

Parameters
------------

Response Triggers
-------------------

Notes
-------

Validates the Protocol 3000 connection and gets the machine number  
 Step-in master products use this command to identify the availability of a device

### HELP

Function	Permission	Transparency
Set: -	-	-
Get: <b>HELP</b>	End User	-
Description	Syntax	
Set: -	-	
Get: Get command list or help for specific command	2 options: 1. # <b>HELP</b> <input type="text"/> 2. # <b>HELP</b> <input type="text"/> command_name <input type="text"/>	

### BUILD-DATE

Function	Permission	Transparency
Set: <b>BUILD-DATE</b>	End User	-
Get: -	-	-
Description	Syntax	
Set: Read device build date	# <b>BUILD-DATE?</b> <input type="text"/>	
Get: -	-	
Response		
~ <input type="text"/> @ <b>BUILD-DATE</b> <input type="text"/> date <input type="text"/> time <input type="text"/>		
Parameters		
<i>date</i> – Format: YYYY/MM/DD where YYYY = Year, MM = Month, DD = Day		
<i>time</i> – Format: hh:mm:ss where hh = hours, mm = minutes, ss = seconds		

**FACTORY**

Function		Permission	Transparency
Set:	<b>FACTORY</b>	End User	-
Get:	-	-	-
Description		Syntax	
Set:	Reset device to factory defaults configuration	# <b>FACTORY</b> <sub>CR</sub>	
Get:	-	-	
Response			
~ <sub>nn</sub> @ <b>FACTORY</b> <sub>SP</sub> OK <sub>CR LF</sub>			
Notes			
This command deletes all user data from the device. The deletion can take some time.			

**MODEL?**

Function		Permission	Transparency
Set:	-	-	-
Get:	<b>MODEL?</b>	End User	-
Description		Syntax	
Set:	-	-	
Get:	Get device model	# <b>MODEL?</b> <sub>CR</sub>	
Response			
~ <sub>nn</sub> @ <b>MODEL?</b> <sub>SP</sub> model_name <sub>CR LF</sub>			
Parameters			
model_name – String of up to 19 printable ASCII chars			

**PROT-VER?**

Function		Permission	Transparency
Set:	-	-	-
Get:	<b>PROT-VER?</b>	End User	-
Description		Syntax	
Set:	-	-	
Get:	Get protocol version	# <b>PROT-VER?</b> <sub>CR</sub>	
Response			
~ <sub>nn</sub> @ <b>PROT-VER?</b> <sub>SP</sub> 3000:version <sub>CR LF</sub>			
Parameters			
Version – Format: XX.XX where X is a decimal digit			

**RESET**

Function		Permission	Transparency
Set:	<b>RESET</b>	Administrator	Public
Get:	-	-	-
Description		Syntax	
Set:	Reset device	#RESET <sub>CR</sub>	
Get:	-	-	
Response			
~nn@RESET <sub>SP</sub> OK <sub>CR LF</sub>			
Notes			
To avoid locking the port due to a USB bug in Windows, disconnect USB connections immediately after running this command. If the port was locked, disconnect and reconnect the cable to reopen the port.			

**VERSION?**

Function		Permission	Transparency
Set:	-	-	-
Get:	<b>VERSION?</b>	End User	-
Description		Syntax	
Set:	-	-	
Get:	Get version number	#VERSION? <sub>CR</sub>	
Response			
~nn@VERSION <sub>SP</sub> firmware_version <sub>CR LF</sub>			
Parameters			
<i>firmware_version</i> – Format: XX.XX.XXXX where the digits group are: major.minor.build version			

**SN?**

Function		Permission	Transparency
Set:	-	-	-
Get:	<b>SN?</b>	End User	Public
Description		Syntax	
Set:	-	-	
Get:	Get device serial number	#SN? <sub>CR</sub>	
Response			
~nn@SN <sub>SP</sub> serial_number <sub>CR LF</sub>			
Parameters			
<i>serial_number</i> - 14 decimal digits, factory assigned			

**MENU-CMD**

Function		Permission	Transparency
Set:	<b>MENU-CMD</b>	End User	Public
Get:	-	-	-
Description		Syntax	
Set:	Switch audio and video	# <b>MENU-CMD</b> <input type="checkbox"/> <i>param</i> <input type="checkbox"/>	
Get:	-	-	
Response			
~ <input type="checkbox"/> <input type="checkbox"/> @ <b>MENU-CMD</b> <input type="checkbox"/> <i>param</i> <input type="checkbox"/>			
Parameters			
<i>param</i> – Menu=1, Enter=2, Up=4, Down=5, Right=6, Left=7			
Notes			
This command emulates menu navigation			

**NET-MAC?**

Function		Permission	Transparency
Set:	-	-	-
Get:	<b>NET-MAC?</b>	End User	-
Description		Syntax	
Set:			
Get:	Get MAC address	# <b>NET-MAC?</b> <input type="checkbox"/>	
Response			
~ <input type="checkbox"/> <input type="checkbox"/> @ <b>NET-MAC</b> <input type="checkbox"/> <i>mac_address</i> <input type="checkbox"/>			
Parameters			
<i>mac_address</i> – Unique MAC address. Format: XX-XX-XX-XX-XX-XX where X is hex digit.			

**NET-IP**

Function		Permission	Transparency
Set:	<b>NET-IP</b>	Administrator	-
Get:	<b>NET-IP?</b>	End User	-
Description		Syntax	
Set:	Set device IP address	# <b>NET-IP</b> <input type="checkbox"/> <i>P1</i> <input type="checkbox"/>	
Get:	Get device IP address	# <b>NET-IP?</b> <input type="checkbox"/>	
Response			
Set: ~ <input type="checkbox"/> <input type="checkbox"/> @ <b>NET-IP</b> <input type="checkbox"/> <i>ip_address</i> <input type="checkbox"/> <b>OK</b> <input type="checkbox"/>			
Get: ~ <input type="checkbox"/> <input type="checkbox"/> @ <b>NET-IP</b> <input type="checkbox"/> <i>ip_address</i> <input type="checkbox"/>			
Parameters			
<i>P1 (valid IP address)</i> = xxx.xxx.xxx.xxx			
Notes			
For proper settings consult your network administrator.			

**NET-GATE**

Function		Permission	Transparency
Set:	<b>NET-GATE</b>	Administrator	-
Get:	<b>NET-GATE?</b>	End User	-
Description		Syntax	
Set:	Set Gateway IP	#NET-GATE <sub>SP</sub> P1 <sub>CR</sub>	
Get:	Get Gateway IP	#NET-GATE? <sub>CR</sub>	
Response			
Set: ~nn@NET-GATE <sub>SP</sub> P1 <sub>SP</sub> OK <sub>CR LF</sub>			
Get: ~nn@NET-GATE <sub>SP</sub> ip_address <sub>CR LF</sub>			
Parameters			
P1 (valid IP address)=xxx.xxx.xxx.xxx			
Notes			
A network gateway connects the device via another network and maybe over the Internet. Be careful of security problems. For proper settings consult your network administrator			

**NET-MASK**

Function		Permission	Transparency
Set:	<b>NET-MASK</b>	Administrator	-
Get:	<b>NET-MASK?</b>	End User	-
Description		Syntax	
Set:	Set device subnet mask	#NET-MASK <sub>SP</sub> net_mask <sub>CR</sub>	
Get:	Get device subnet mask	#NET-MASK? <sub>CR</sub>	
Response			
Set: ~nn@NET-MASK <sub>SP</sub> P1 <sub>SP</sub> OK <sub>CR LF</sub>			
Get: ~nn@NET-MASK <sub>SP</sub> net_mask <sub>CR LF</sub>			
Parameters			
P1 (valid IP address)=xxx.xxx.xxx.xxx			
Response triggers			
The subnet mask limits the Ethernet connection within the local network. For proper settings consult your network administrator.			

**NET-DHCP**

Function		Permission	Transparency
Set:	<b>NET-DHCP</b>	Administrator	-
Get:	<b>NET-DHCP?</b>	End User	-
Description		Syntax	
Set:	Set DHCP mode	#NET-DHCP <sub>SP</sub> P1 <sub>CR</sub>	
Get:	Get DHCP mode	#NET-DHCP? <sub>CR</sub>	
Response			
Set:	~nn@NET-DHCP <sub>SP</sub> P1 <sub>SP</sub> OK <sub>CR LF</sub>		
Get:	~nn@NET-DHCP <sub>SP</sub> mode <sub>CR LF</sub>		
Parameters			
P1 – 0=Static IP; 1=DHCP 0 – Use static IP. 1 – Use DHCP. If unavailable, use IP as above.			
Notes			
Connecting Ethernet to devices with DHCP may take more time in some networks. To connect with a randomly assigned IP by DHCP, specify the device DNS name (if available) using the command "NAME". You can also get an assigned IP by direct connection to USB or RS-232 protocol port if available. For proper settings consult your network administrator.			

**ROUTE**

Function		Permission	Transparency
Set:	<b>ROUTE</b>	End User	-
Get:	<b>ROUTE?</b>	End User	-
Description		Syntax	
Set:	Set layer routing	#ROUTE <sub>SP</sub> P1,P2,P3 <sub>CR</sub>	
Get:	Get layer routing	#ROUTE? <sub>SP</sub> P1,P2 <sub>CR</sub>	
Response			
~nn@ROUTE <sub>SP</sub> P1,P2,P3 <sub>CR LF</sub>			
Parameters			
P1 (Layer number) –12=Video+Audio P2 – 1=Scaler P3 (Route from, valid values are in accordance to the selected layer and Route to selected according to P1 and P2) – video inputs = (0~11); see <a href="#">Port Number Key</a> on page 37			
Notes			
This command replaces all other routing commands.			

**DISPLAY?**

Function		Permission	Transparency
Set:	-	-	-
Get	<b>DISPLAY?</b>	End User	Public
Description		Syntax	
Set:	-	-	
Get:	Get output HPD status	# <b>DISPLAY?</b> <sub>SP</sub> P1 <sub>CR</sub>	
Response			
~ <sub>nn</sub> @ <b>DISPLAY</b> <sub>SP</sub> P1 <sub>CR LF</sub>			
Parameters			
P1 (Output number) – 0=HDMI1; 1=HDMI2			
Response triggers			
<p>After execution, response is sent to the com port from which the Get was received</p> <p>Response is sent after every change in output HPD status ON to OFF</p> <p>Response is sent after every change in output HPD status OFF to ON and ALL parameters (new EDID, etc.) are stable and valid</p>			

**LOCK-FP**

Function		Permission	Transparency
Set:	<b>LOCK-FP</b>	End User	-
Get:	<b>LOCK-FP?</b>	End User	-
Description		Syntax	
Set:	Lock front panel	# <b>LOCK-FP</b> <sub>SP</sub> P1 <sub>CR</sub>	
Get:	Get front panel lock state	# <b>LOCK-FP?</b> <sub>CR</sub>	
Response			
~ <sub>nn</sub> @ <b>LOCK-FP</b> <sub>SP</sub> P1 <sub>SP</sub> <b>OK</b> <sub>CR LF</sub>			
Parameters			
P1– 0=No; 1=Yes			

## HDCEP-MOD

Function		Permission	Transparency
Set:	HDCEP-MOD	Administrator	Public
Get:	HDCEP-MOD?	End User	Public
Description		Syntax	
Set:	Set HDCEP mode	#HDCEP-MOD <sub>SP</sub> P1,P2,P3 <sub>CR</sub>	
Get:	Get HDCEP mode	#HDCEP-MOD? <sub>SP</sub> P1,P2 <sub>CR</sub>	
Response			
Set / Get: ~nn@HDCEP-MOD <sub>SP</sub> P1,P2,P3 <sub>CR LF</sub>			
Parameters			
P1 (Input/Output) – 0=Input; 1=Output P2 (Scaler number) – Input 0-9=HDMI 1 – HDMI 10; Output 0-1=HDMI 1, HDMI 2 P3 (Status) – Input: 0=Off; 1=On; Output: 2=Follow In, 3=Follow Out			
Response triggers			
Response is sent to the com port from which the Set (before execution) / Get command was received Response is sent to all com ports after execution if HDCEP-MOD was set any other external control device (button press, device menu and similar) or genlock status changed			
Notes			
Set HDCEP working mode <b>on device input</b> : HDCEP supported – HDCEP_ON [default] HDCEP not supported – HDCEP OFF HDCEP support changes following detected sink – MIRROR OUTPUT			

## VID-RES

Function		Permission	Transparency
Set:	VID-RES	End User	Public
Get	VID-RES?	End User	Public
Description		Syntax	
Set:	Set video resolution	#VID-RES <sub>SP</sub> P1,P2,P3,P4 <sub>CR</sub>	
Get:	Get video resolution	#VID-RES? <sub>SP</sub> P1,P2,P3 <sub>CR</sub>	
Response			
~nn@VID-RES <sub>SP</sub> P1,P2,P3,P4 <sub>CR LF</sub>			
Parameters			
P1 – 1=Output P2 – 1=Scaler P3 – 0=Off P4 - video resolutions – 200~223, see <a href="#">Input Resolutions key</a> on page 38			
Response triggers			
After execution, response is sent to the com port from which the Set /Get was received After execution, response is sent to all com ports if VID-RES was set by any other external control device (button press, device menu and similar)			
Notes			
“Set” command is only applicable for <b>stage=Output</b> “Set” command with <i>is_native</i> =ON sets native resolution on selected output (resolution index sent = 0). Device sends as answer actual VIC ID of native resolution “Get” command with <i>is_native</i> =ON returns native resolution VIC, with <i>is_native</i> =OFF returns current resolution To use “custom resolutions” (entries 100-105), define them using command DEF-RES			

**VMUTE**

Function		Permission	Transparency
Set:	<b>VMUTE</b>	End User	Public
Get:	<b>VMUTE?</b>	End User	Public
Description		Syntax	
Set:	Set enable/disable video on output	#VMUTE <sub>SP</sub> P1, P2 <sub>CR</sub>	
Get:	Get video on output status	#VMUTE? <sub>SP</sub> P1 <sub>SP CR</sub>	
Response			
Set / Get: ~nn@VMUTE <sub>SP</sub> P1,P2 <sub>CR LF</sub>			
Parameters			
P1 (Scaler number) – 1=Scaler P2 (Off/On) – 0=Off; 1=On			

**VFRZ**

Function		Permission	Transparency
Set:	<b>VFRZ</b>	End User	-
Get:	<b>VFRZ?</b>	End User	-
Description		Syntax	
Set:	Set freeze video on output	#VFRZ <sub>SP</sub> P1,P2 <sub>CR</sub>	
Get:	Get freeze on output status	#VFRZ? <sub>SP</sub> P1 <sub>CR</sub>	
Response			
Set / Get: ~nn@VFRZ <sub>SP</sub> P1,P2 <sub>CR LF</sub>			
Parameters			
P1 (Scaler number) – 1=Scaler P2 (Off/On) – 0=Off; 1=On			

**AUD-LVL**

Function		Permission	Transparency
Set:	<b>AUD-LVL</b>	End User	Public
Get:	<b>AUD-LVL?</b>	End User	Public
Description		Syntax	
Set:	Set audio level in specific amplifier stage	#AUD-LVL <sub>SP</sub> stage, channel, volume <sub>CR</sub>	
Get:	Get audio level in specific amplifier stage	#AUD-LVL? <sub>SP</sub> stage, channel <sub>CR</sub>	
Response			
~nn@AUD-LVL <sub>SP</sub> stage, channel, volume <sub>CR LF</sub>			
Parameters			
stage (Input/Output)– 0=Input; 1=Output channel (Input/Output number valid according to the selected Input/Output according to P1) – audio inputs=0~11; Audio outputs=0; (see <a href="#">Port Number Key</a> on page 37) volume – 0~100 Audio parameter in Kramer units, minus sign precedes negative values. ++ increase current value, -- decrease current value			

**MUTE**

Function		Permission	Transparency
Set:	<b>MUTE</b>	End User	Public
Get:	<b>MUTE?</b>	End User	Public
Description		Syntax	
Set:	Mute the selected output	# <b>MUTE</b> <sub>SP</sub> P1,P2 <sub>CR</sub>	
Get:	Mute the selected output	# <b>MUTE?</b> <sub>SP</sub> P1 <sub>CR</sub>	
Response			
Set / Get: ~ <b>nn</b> @ <b>MUTE</b> <sub>SP</sub> P1,P2. <sub>CR LF</sub>			
Parameters			
P1 (Scaler number) – 1=Scaler P2 (Off/On) – 0=Off; 1=On			
Response triggers			
Response is sent to the com port from which the <b>Set</b> (before execution) / <b>Get</b> command was received After execution, response is sent to all com ports if CMD-NAME was set any other external control device (button press, device menu and similar) or genlock status was changed			
Notes			
Mutes the selected audio output			

**AUD-EMB**

Function		Permission	Transparency
Set:	<b>AUD-EMB</b>	End User	Public
Get:	<b>AUD-EMB?</b>	End User	Public
Description		Syntax	
Set:	Set audio in video embedding status	# <b>AUD-EMB</b> <sub>SP</sub> in,out,status <sub>CR</sub>	
Get:	Get audio in video embedding status	# <b>AUD-EMB?</b> <sub>SP</sub> in,out <sub>CR</sub>	
Response			
Set/Get: ~ <b>nn</b> @ <b>AUD-EMB</b> <sub>SP</sub> in,out,status <sub>CR LF</sub>			
Parameters			
in – audio input to be embedded number): HDMI 1=0, HDMI 2=1, HDMI 3=2, HDMI 4=3 out – Output=0 status – embedding status: Analog=0, Embedded=1, Auto=2			
Response Triggers			
Response is sent to the com port from which the Set (before execution)/Get command was received After execution, response is sent to all com ports if AUD-EMB was set by any other external control device (button press, device menu and similar)			

**SCLR-AS**

Function		Permission	Transparency
Set:	<b>SCLR-AS</b>	End User	Public
Get:	<b>SCLR-AS?</b>	End User	Public
Description		Syntax	
Set:	Set the auto sync off timer	# <b>SCLR-AS</b> <sub>SP</sub> P1,P2 <sub>CR</sub>	
Get:	Get the auto sync off timer definition	# <b>SCLR-AS?</b> <sub>SP</sub> P1 <sub>CR</sub>	
Response			
Set / Get: ~ <b>nn</b> @ <b>SCLR-AS</b> <sub>SP</sub> P1,P2... <sub>CR LF</sub>			
Parameters			
P1 (Scaler Number) – 1=Scaler P2 (Off/On) – 0=Off; 1=Fast; 2=Slow			
Response triggers			
Response is sent to the com port from which the <b>Set</b> (before execution) / <b>Get</b> command was received After execution, response is sent to all com ports if CMD-NAME was set any other external control device (button press, device menu and similar) or genlock status was changed			
Notes			
Sets the Auto Sync features for the selected Scaler			

**IMAGE-PROP**

Function		Permission	Transparency
Set:	<b>IMAGE-PROP</b>	End User	Public
Get:	<b>IMAGE-PROP?</b>	End User	Public
Description		Syntax	
Set:	Set the image size	# <b>IMAGE-PROP</b> <sub>SP</sub> P1 <sub>CR</sub>	
Get:	Get the image size	# <b>IMAGE-PROP?</b> <sub>SP</sub> P1,...,P6 <sub>CR</sub>	
Response			
Set / Get: ~ <b>nn</b> @ <b>IMAGE-PROP</b> <sub>SP</sub> P1,P2... <sub>CR LF</sub>			
Parameters			
P1 (Scaler number) – 1=Scaler P2 (Status) – 0=Over Scan; 1=Full; 2=Best Fit; 3=PanScan; 3=Letter Box; 5=Under 2; 6=Under 1			
Response triggers			
Response is sent to the com port from which the <b>Set</b> (before execution) / <b>Get</b> command was received After execution, response is sent to all com ports if CMD-NAME was set any other external control device (button press, device menu and similar) or genlock status was changed			
Notes			
Sets the image properties of the selected scaler			

**SCLR-PCAUTO**

Function		Permission	Transparency
Set:	<b>SCLR-PCAUTO</b>	End User	Public
Get:	-	-	-
Description		Syntax	
Set:	Set PC auto sync of scaler	# <b>SCLR-PCAUTO</b> <sub>SP</sub> <b>P1,P2</b> <sub>CR</sub>	
Get:	-	-	
Response			
~ <b>nn</b> @ <b>SCLR-PCAUTO</b> <sub>SP</sub> <b>P1,P2...</b> <sub>CR LF</sub>			
Parameters			
P1 (Scaler number) -1=Scaler P2 (Off/On) -1=Yes			
Response Triggers			
The auto adjust feature is implemented every time P2 is set to "Yes"			
Notes			
Trigger the Auto Adjust feature of PC input			

**SCLR-AUDIO-DELAY**

Function		Permission	Transparency
Set:	<b>SCLR-AUDIO-DELAY</b>	End User	Public
Get:	<b>SCLR-AUDIO-DELAY?</b>	End User	Public
Description		Syntax	
Set:	Set the scaler audio delay	# <b>SCLR-AUDIO-DELAY</b> <sub>SP</sub> <b>P1,P2</b> <sub>CR</sub>	
Get:	Get the scaler audio delay	# <b>SCLR-AUDIO-DELAY?</b> <sub>SP</sub> <b>P1</b> <sub>CR</sub>	
Response			
Set / Get: ~ <b>nn</b> @ <b>SCLR-AUDIO-DELAY</b> <sub>SP</sub> <b>P1,P2</b> <sub>CR LF</sub>			
Parameters			
P1 (Audio output number) -1=Scaler P2 (Level selection) - 0=Off; 1=40ms; 2=110ms; 3=150ms			
Response triggers			
Response is sent to the com port from which the Set (before execution) / Get command was received After execution, response is sent to all com ports if CMD-NAME was set any other external control device (button press, device menu and similar) or genlock status was changed			
Notes			
Sets the audio delay for the selected audio output			

**MIC-GAIN**

Function		Permission	Transparency
Set:	<b>MIC-GAIN</b>	End User	Public
Get:	<b>MIC-GAIN?</b>	End User	Public
Description		Syntax	
Set:	Set the microphone gain	# <b>MIC-GAIN</b> <sub>SP</sub> P1,P2,P3 <sub>CR</sub>	
Get:	Get the microphone gain	# <b>MIC-GAIN?</b> <sub>SP</sub> P1,P2 <sub>CR</sub>	
Response			
Set / Get: ~ <b>nn</b> @ <b>MIC-GAIN</b> <sub>SP</sub> P1,P2, <sub>CR LF</sub>			
Parameters			
P1 (always 0) – 0 P2 – 0=Mic 1; 1=Mic 2 P3 (level) – 0 to 100 Level – 0~100 Audio parameter in Kramer units, minus sign precedes negative values. ++ increase current value, -- decrease current value			
Response Triggers			
Response is sent to the com port from which the Set (before execution) / Get command was received After execution, response is sent to all com ports if CMD-NAME was set any other external control device (button press, device menu and similar) or genlock status was changed			
Notes			
Sets the Microphone input audio gain			

**TLK**

Function		Permission	Transparency
Set:	<b>TLK</b>	End User	Public
Get:	<b>TLK?</b>	End User	Public
Description		Syntax	
Set:	Set audio talkover mode status	# <b>TLK</b> <sub>SP</sub> channel,talkover_mode <sub>CR</sub>	
Get:	Get audio talkover mode status	# <b>TLK?</b> channel, <sub>CR</sub>	
Response			
~ <b>nn</b> @ <b>TLK</b> <sub>SP</sub> channel,talkover_mode <sub>CR LF</sub>			
Parameters			
channel – 1=Scaler talkover_mode – 0=Off; 1=Mixer; 2=Talkover; 3=Mic only			

**MIC-TLK**

Function		Permission	Transparency
Set:	<b>MIC-TLK</b>	End User	Public
Get:	<b>MIC-TLK?</b>	End User	Public
Description		Syntax	
Set:	Set mic talkover parameters	#MIC-TLK <sub>SP</sub> channel,P1,value <sub>CR</sub>	
Get:	Get mic talkover parameters	#MIC-TLK? <sub>SP</sub> channel,P1 <sub>CR</sub>	
Response			
~nn@MIC-TLK <sub>SP</sub> channel,P1,value <sub>CR LF</sub>			
Parameters			
P1 (channel) – 0			
P2 (parameter setting) – 0=Depth, 1=Trigger, 2=Attack time, 3=Hold time, 4=Release time			
P3 (value) – P1 value (in corresponding to P1 units): Depth: 0~100 [%], Trigger: 0~100 (-60dB~40dB), Attack/Hold/Release time: 0~200 (0~2 sec)			

**STANDBY**

Function		Permission	Transparency
Set:	<b>STANDBY</b>	End User	Public
Get:	<b>STANDBY?</b>	End User	Public
Description		Syntax	
Set:	Set Standby mode	#STANDBY <sub>SP</sub> on_off <sub>CR</sub>	
Get:	Get Standby mode status	#STANDBY? <sub>CR</sub>	
Response			
~nn@STANDBY <sub>SP</sub> value <sub>CR LF</sub>			
Parameters			
on_off – 0=Off; 1=On			

**MIC-SELECT**

Function		Permission	Transparency
Set:	<b>MIC-SELECT</b>	End User	Public
Get:	<b>MIC-SELECT?</b>	End User	Public
Description		Syntax	
Set:	Select the microphone	#MIC-SELECT <sub>SP</sub> P1,P2 <sub>CR</sub>	
Get:	Get the microphone	#MIC-SELECT? <sub>SP</sub> P1 <sub>CR</sub>	
Response			
Set / Get: ~nn@MIC-SELECT <sub>SP</sub> P1,P2, <sub>CR LF</sub>			
Parameters			
P1 – Scaler=1			
P2 – Mic mode OFF=[], MIC1=1, MIC2=2, Both=[1,2], [2,1]			

The warranty obligations of Kramer Electronics Inc. ("Kramer Electronics") for this product are limited to the terms set forth below:

#### **What is Covered**

This limited warranty covers defects in materials and workmanship in this product.

#### **What is Not Covered**

This limited warranty does not cover any damage, deterioration or malfunction resulting from any alteration, modification, improper or unreasonable use or maintenance, misuse, abuse, accident, neglect, exposure to excess moisture, fire, improper packing and shipping (such claims must be presented to the carrier), lightning, power surges, or other acts of nature. This limited warranty does not cover any damage, deterioration or malfunction resulting from the installation or removal of this product from any installation, any unauthorized tampering with this product, any repairs attempted by anyone unauthorized by Kramer Electronics to make such repairs, or any other cause which does not relate directly to a defect in materials and/or workmanship of this product. This limited warranty does not cover cartons, equipment enclosures, cables or accessories used in conjunction with this product.

Without limiting any other exclusion herein, Kramer Electronics does not warrant that the product covered hereby, including, without limitation, the technology and/or integrated circuit(s) included in the product, will not become obsolete or that such items are or will remain compatible with any other product or technology with which the product may be used.

#### **How Long this Coverage Lasts**

The standard limited warranty for Kramer products is seven (7) years from the date of original purchase, with the following exceptions:

1. All Kramer VIA hardware products are covered by a standard three (3) year warranty for the VIA hardware and a standard three (3) year warranty for firmware and software updates; all Kramer VIA accessories, adapters, tags, and dongles are covered by a standard one (1) year warranty.
2. All Kramer fiber optic cables, adapter-size fiber optic extenders, pluggable optical modules, active cables, cable retractors, all ring mounted adapters, all Kramer speakers and Kramer touch panels are covered by a standard one (1) year warranty.
3. All Kramer Cobra products, all Kramer Calibre products, all Kramer Minicom digital signage products, all HighSecLabs products, all streaming, and all wireless products are covered by a standard three (3) year warranty.
4. All Sierra Video MultiViewers are covered by a standard five (5) year warranty.
5. Sierra switchers & control panels are covered by a standard seven (7) year warranty (excluding power supplies and fans that are covered for three (3) years).
6. K-Touch software is covered by a standard one (1) year warranty for software updates.
7. All Kramer passive cables are covered by a ten (10) year warranty.

#### **Who is Covered**

Only the original purchaser of this product is covered under this limited warranty. This limited warranty is not transferable to subsequent purchasers or owners of this product.

#### **What Kramer Electronics Will Do**

Kramer Electronics will, at its sole option, provide one of the following three remedies to whatever extent it shall deem necessary to satisfy a proper claim under this limited warranty:

1. Elect to repair or facilitate the repair of any defective parts within a reasonable period of time, free of any charge for the necessary parts and labor to complete the repair and restore this product to its proper operating condition. Kramer Electronics will also pay the shipping costs necessary to return this product once the repair is complete.
2. Replace this product with a direct replacement or with a similar product deemed by Kramer Electronics to perform substantially the same function as the original product.
3. Issue a refund of the original purchase price less depreciation to be determined based on the age of the product at the time remedy is sought under this limited warranty.

#### **What Kramer Electronics Will Not Do Under This Limited Warranty**

If this product is returned to Kramer Electronics or the authorized dealer from which it was purchased or any other party authorized to repair Kramer Electronics products, this product must be insured during shipment, with the insurance and shipping charges prepaid by you. If this product is returned uninsured, you assume all risks of loss or damage during shipment. Kramer Electronics will not be responsible for any costs related to the removal or re-installation of this product from or into any installation. Kramer Electronics will not be responsible for any costs related to any setting up this product, any adjustment of user controls or any programming required for a specific installation of this product.

#### **How to Obtain a Remedy Under This Limited Warranty**

To obtain a remedy under this limited warranty, you must contact either the authorized Kramer Electronics reseller from whom you purchased this product or the Kramer Electronics office nearest you. For a list of authorized Kramer Electronics resellers and/or Kramer Electronics authorized service providers, visit our web site at [www.kramerav.com](http://www.kramerav.com) or contact the Kramer Electronics office nearest you.

In order to pursue any remedy under this limited warranty, you must possess an original, dated receipt as proof of purchase from an authorized Kramer Electronics reseller. If this product is returned under this limited warranty, a return authorization number, obtained from Kramer Electronics, will be required (RMA number). You may also be directed to an authorized reseller or a person authorized by Kramer Electronics to repair the product.

If it is decided that this product should be returned directly to Kramer Electronics, this product should be properly packed, preferably in the original carton, for shipping. Cartons not bearing a return authorization number will be refused.

#### **Limitation of Liability**

THE MAXIMUM LIABILITY OF KRAMER ELECTRONICS UNDER THIS LIMITED WARRANTY SHALL NOT EXCEED THE ACTUAL PURCHASE PRICE PAID FOR THE PRODUCT. TO THE MAXIMUM EXTENT PERMITTED BY LAW, KRAMER ELECTRONICS IS NOT RESPONSIBLE FOR DIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM ANY BREACH OF WARRANTY OR CONDITION, OR UNDER ANY OTHER LEGAL THEORY. Some countries, districts or states do not allow the exclusion or limitation of relief, special, incidental, consequential or indirect damages, or the limitation of liability to specified amounts, so the above limitations or exclusions may not apply to you.

#### **Exclusive Remedy**

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#### **Other Conditions**

This limited warranty gives you specific legal rights, and you may have other rights which vary from country to country or state to state.

This limited warranty is void if (i) the label bearing the serial number of this product has been removed or defaced, (ii) the product is not distributed by Kramer Electronics or (iii) this product is not purchased from an authorized Kramer Electronics reseller. If you are unsure whether a reseller is an authorized Kramer Electronics reseller, visit our web site at [www.kramerav.com](http://www.kramerav.com) or contact a Kramer Electronics office from the list at the end of this document.

Your rights under this limited warranty are not diminished if you do not complete and return the product registration form or complete and submit the online product registration form. Kramer Electronics thanks you for purchasing a Kramer Electronics product. We hope it will give you years of satisfaction.



P/N:



2900-300305

Rev:



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## SAFETY WARNING

Disconnect the unit from the power supply before opening and servicing

For the latest information on our products and a list of Kramer distributors, visit our Web site where updates to this user manual may be found.

We welcome your questions, comments, and feedback.

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