



USER MANUAL

MODEL:

VS-611DT

UHD 6x1:2 Auto Switcher



Contents

Introduction	1
Getting Started	1
Overview	2
Typical Applications	3
About Fast Switching	4
Defining VS-611DT UHD 6x1:2 Auto Switcher	5
Mounting VS-611DT	7
Connecting VS-611DT	8
Connecting a Serial Controller to VS-611DT via RS-232	9
Operating VS-611DT	9
Using the Web Pages	14
Technical Specifications	20
Supported Resolutions	21
Default Settings	22
Default EDID	23
Protocol 3000	25
Understanding Protocol 3000	26
Kramer Protocol 3000 Syntax	27
Protocol 3000 Commands	28

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!

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/VS-611DT to check for up-to-date user manuals, application programs, and to check if firmware upgrades are available (where appropriate).

Achieving 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 VS-611DT 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 GPI/O 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 is 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 <https://www.kramerav.com/social-responsibility/environment/>.

Overview

Congratulations on purchasing your Kramer **VS-611DT UHD 6x1:2** Auto Switcher.

VS-611DT is a high-performance automatic switcher for HDMI video signals with resolution up to 4K@60Hz (4:2:0). With six HDMI inputs, the unit can automatically or manually switch to a predefined or last connected input whenever the currently active video signal is interrupted or whenever a higher-priority video signal is introduced. The HDBaseT output signal is mirrored on the HDMI output.

VS-611DT provides exceptional quality, advanced and user-friendly operation, and flexible control.

Advanced Features

- A maximum data rate of up to 8.91Gbps (2.97Gbps per graphic channel)
- Extended Range (100m) of HDBaseT 4K@60Hz (4:2:0)
- HDTV compatible
- HDCP and HDMI compliant
- Six HDMI inputs and HDBT and HDMI outputs (DA).
- HDMI support for Deep Color, Ethernet, ARC, up to 7.1 audio channels
- Customized Audio Output — De-embed the audio from the HDMI input and route it to the balanced stereo audio line out, or de-embed HDMI ARC from the output and route it to the balanced stereo audio line out.

- Features Kramer reKlocking™ Technology — Rebuilds the digital signal to travel longer distances.
- Step-in Master Support.
- Automatic input detection and selection.
- Auto-power off when no HDMI input for 30 seconds (selectable).
- HDCP on/off switching.
- EDID configuration options.
- Selectable switching – Manual or fast auto switching according to last connected or preset priority.
- Full HDBaseT Certification — Including bidirectional RS–232, Ethernet, IR and POE.
- HDBaseT Extended Reach — Up to 100m at 4K@60Hz (4:2:0).
- POE source for HDBaseT receiver (that is PoE compliant).
- Contact closure for remote manual switching override.
- Firmware upgrade over mini-USB, RS-232, RJ-45.
- Varied Control Options — Front panel keyboard, HDBaseT Ethernet, RS–232 local and over HDBaseT, IR.
- Built-in Web server.
- Software Support — For Protocol 3000, K–Router Plus, EDID Designer, K–Upload.

Typical Applications

VS-611DT is ideal for the following typical applications:

- Education
- Corporate
- Any other AV installation that requires selecting and switching between several HDMI sources automatically.

About Fast Switching

Older display devices required a longer time between the loss of one digital signal and the introduction of another, as well as a physical disconnection of the interconnecting cable in order to be able to detect and adjust to the new video attributes and parameters. Normal switching, therefore, introduced a 5V signal disconnection along with a delay in switching. Many newer display devices, however, are now capable of “on-the-fly” switching.

Depending on the display device in use, the **VS-611DT** allows for fast switching (minor reset and the connection kept alive) and extra fast switching (no reset and the connection kept alive). Using the fast-switching mode allows for fraction-of-a-second switching times when using high performance display devices or when using a scaler on the video output.

Defining VS-611DT UHD 6x1:2 Auto Switcher

This section defines VS-611DT.

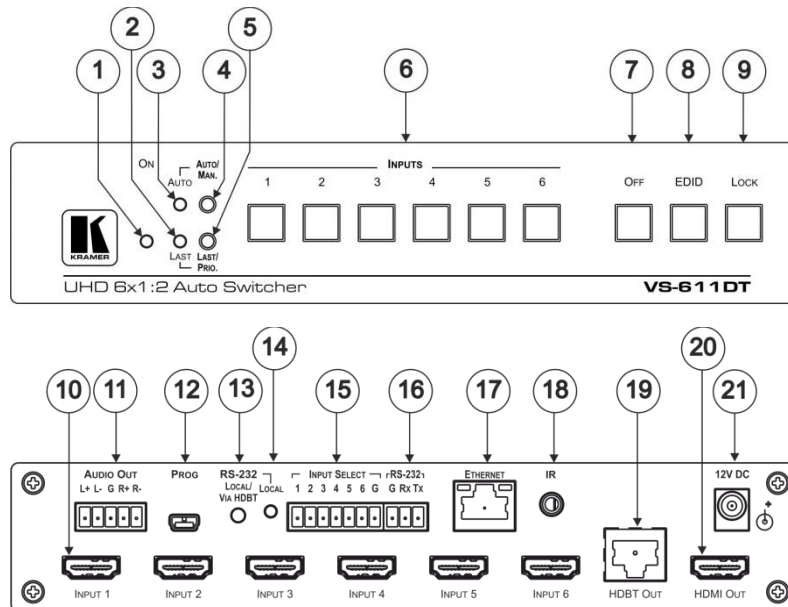


Figure 1: VS-611DT UHD 6x1:2 Auto Switcher

#	Feature	Function
①	ON LED	Lights when the unit is powered on.
②	LAST LED	Lights when in Last Connected mode.
③	AUTO LED	Lights when in Auto Switching mode.
④	AUTO/MAN. Button	Press to select between auto-switching or manual switching mode (see Switching – Manual and Auto on page 9).
⑤	LAST/PRIO. Button	Press to select between last connected mode or priority switching mode (see Switching – Manual and Auto on page 9).
⑥	INPUT Buttons (1-6)	Press to select an HDMI source to route to the output. The LEDs indicate: Lit: the input is selected. Dim: the input signal is active but not selected. Off: the input signal is not active and not selected.
⑦	OFF Button	Press to disconnect the output mode (see Turning the Output Off on page 10).
⑧	EDID Button	Press to capture the EDID (see Copying the EDID on page 11).
⑨	LOCK Button	Press and hold to toggle locking and unlocking the front panel buttons (see Locking the Front Panel Buttons on page 10).
⑩	INPUT HDMI Connectors (1-6)	Connect to up to 6 HDMI sources.
⑪	AUDIO OUT Terminal Block	Connects to a balanced stereo audio acceptor.

#	Feature	Function
⑫	<i>PROG</i> USB Mini-B Connector	Used for upgrading firmware (see Using VCOM on USB on page 13).
⑬	<i>RS-232 LOCAL/VIA HDBT</i> Button	Press to select between a local RS-232 source, or RS-232 over HDBT.
⑭	<i>RS-232 LOCAL</i> LED	Lights when local RS-232 is active.
⑮	<i>INPUT SELECT</i> Contact Closure Terminal Block	Connects to external contact closure input switches (see Controlling the VS-611DT via the Terminal Block Connector on page 13).
⑯	<i>RS-232</i> Terminal Block	Connects to a local RS-232 source (see Connecting a Serial Controller to VS-611DT via RS-232 on page 9).
⑰	<i>ETHERNET</i> RJ-45 Connector	Connects to a network for control.
⑱	<i>IR</i> 3.5mm Mini Jack	Connects to an HDBT IR transmitter.
⑲	<i>HDBT OUT</i> RJ-45 Connector	Connects to an HDBT TP line.
⑳	<i>HDMI OUT</i> Connector	Connects to an HDMI acceptor.
㉑	<i>12V DC</i> Connector	Connects to a power supply for the unit.

Mounting VS-611DT

This section provides instructions for mounting **VS-611DT**. 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.

**Caution:**

- Mount **VS-611DT** 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.
- Maximum mounting height for the device in 2 meters.

Mount VS-611DT in a rack:

- Use the recommended rack adapter
(see www.kramerav.com/product/VS-611DT).

Mount VS-611DT on a surface using one of the following methods:

- Attach the rubber feet and place the unit on a flat surface.
- Mount the unit in a rack using the recommended rack adapter
www.kramerav.com/downloads/VS-611DT.

Connecting VS-611DT



Always switch off the power to each device before connecting it to your VS-611DT. After connecting your VS-611DT, connect its power and then switch on the power to each device.

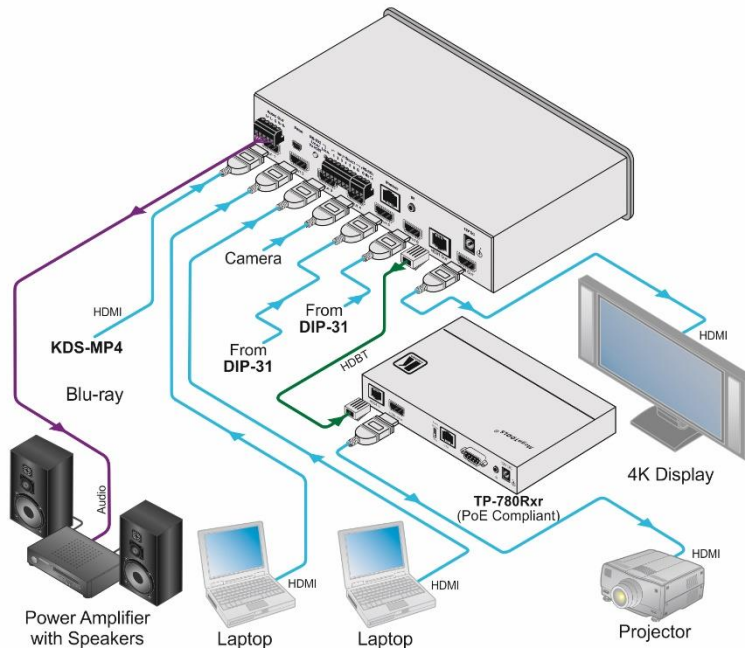


Figure 2: Connecting the VS-611DT UHD 6x1:2 Auto Switcher

To connect VS-611DT as illustrated in the example in Error! Reference source not found.:

- Connect up to six HDMI sources (for example, KDS-MP4(s), laptop(s), DIP-31(s)) to INPUTs 1-6 using HDMI cables.
- Connect the HDBT OUT RJ-45 connector to an HDBaseT acceptor (for example, a TP-780Rxr HDBaseT receiver or an HDBaseT projector) using an HDBT twisted pair cable.
- Connect the HDMI OUT connector to an HDMI acceptor (for example, a 4K display) using an HDMI cable.
- Connect the AUDIO OUT terminal block (line out) to a balanced audio acceptor (for example, a power amplifier with speakers) using an audio cable.
- If needed for control, connect the ETHERNET RJ-45 and/or the RS-232 terminal block ports to a network or a serial control device.
- If needed, connect the INPUT SELECT terminal block to up to six contact closure switches.
- If needed, connect an HDBT IR transmitter to the IR 3.5mm mini jack.



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

Connecting a Serial Controller to VS-611DT via RS-232

The **VS-611DT** operates at 9600 baud rate (see all communication parameters in (see [Default Settings](#) on page 22).

To connect a serial controller to the VS-611DT:

- From the RS-232 9-pin D-sub serial port on the serial controller connect:
 - Pin 2 to the TX pin on the **VS-611DT** RS-232 terminal block.
 - Pin 3 to the RX pin on the **VS-611DT** RS-232 terminal block.
 - Pin 5 to the GND pin on the **VS-611DT** RS-232 terminal block.

Operating VS-611DT

This section describes how to operate the **VS-611DT**.

Switching – Manual and Auto

Switching can be performed automatically or manually using the device's keypad, Web pages (see [Routing Inputs to Outputs on page 14](#)), or control commands (see [Switching/Routing Commands on page 36](#)). This section describes using the keypad buttons to select Auto or Manual switch modes.

Manual Switch Mode

In Manual switch mode, the **VS-611DT** does not automatically switch to another channel even if an input signal is not detected on the manual input.

To select the manual switch mode:

1. Press the Auto/Man. button to turn the Auto/Man. LED off.
2. Press any of the Input 1-6 buttons to switch the input.
The keys respond as follows:
 - Input LED bright: input active and selected
 - Input LED dim: input active and not selected
 - Input LED off: input is not active and not selected

Auto Switch Mode

In Auto switch mode, the **VS-611DT** automatically switches one of six HDMI inputs to a predefined or the last connected input whenever the currently active video signal is interrupted or whenever a higher-priority video signal is detected.

To select the auto switch mode:

1. Press the Auto/Man button to turn the Auto LED on.
2. Press the Last/Prio button to select an auto switch mode:
 - Last connected (Last LED on) – The device always switches to a newly detected active video source. When the device is powered on, the output switches to the highest priority input.
 - Priority (Last LED off) – The device always switches to the highest priority input source. The default priority is Input 1 then Input 2.

Manual Override Mode

Auto switch mode can be overridden by a manual command, such as pressing an input button or sending a control command. In such a case, the system switches to the manually selected source. If this manually selected source is not active, the system waits a set amount of time (10 seconds, default, adjustable on the Web page) and then switches back to Auto mode. Manual override selection is not stored in non-volatile memory.



A step-in command is considered a manual switching command.

Performing a Factory Reset

Factory reset returns all the parameters of the device to their factory default settings.

To perform a factory reset:

1. Disconnect device power.
2. Press and hold Input 1 while reconnecting device power.
All indicators flash while resetting to the factory default parameters. When all the lights turn off the reset is complete.

Locking the Front Panel Buttons

Lock the front panel buttons to prevent tampering.

- Press and hold Lock until the button lights.
The front panel buttons are locked.
- Press and hold Lock until the button goes off.
The front panel buttons are unlocked.

Turning the Output Off

- Press the Off button to turn off the outputs.
Both HDMI and HDBaseT outputs turn off.

Copying the EDID

The EDID is a data structure transmitted by the display that enables the **VS-611DT** to recognize the display connected to the output. The **VS-611DT** acquires and stores the EDID to make reconnection to the display effortless.

You can acquire the EDID from the:

- HDMI output to the selected inputs.
- HDBaseT output to the selected inputs.
- Default EDID to the selected inputs (for the default EDID, see [Default EDID](#) on page [23](#)).

Pressing the front panel EDID button captures the EDID either from the HDMI output port or from the HDBaseT output port to all inputs according to the following scenario:

To copy the EDID from the HDMI output:

1. Press the EDID button to cycle through the EDID sources until all front panel LEDs flash once, indicating that the EDID is copied from HDMI.
2. Press the button of the input that receives the EDID.
3. Press and hold EDID for 5 seconds to copy.

To copy the EDID from the HDBT output:

1. Press the EDID button to cycle through the EDID sources until all front panel LEDs flash twice, indicating that the EDID is copied from HDBT.
2. Press the button of the input that receives the EDID.
3. Press and hold EDID for 5 seconds to copy.

To copy the default EDID:

1. Press the EDID button to cycle through the EDID sources until all front panel LEDs flash three times, indicating that the default EDID is copied
2. Press the button of the input that receives the EDID.
3. Press EDID and hold for 5 sec to copy.

Setting the 5V Output Time Delay

When there is no signal clock or 5V input on all inputs for 15 minutes, the device shuts down the 5V output. This enables output devices such as projectors or displays to go to sleep. The 15 minute default time delay can be changed to 5 minutes or 10 minutes using the Auto Sync Off feature on the Device Settings Web page (see [Setting Device ID Parameters](#) on page [18](#)).

Setting HDCP Capability

Each input can be individually set to HDCP support on or off.

To set HDCP support:

1. Disconnect device power.
2. Press and hold the Lock button while reconnecting device power.
The Lock LED flashes indicating HDCP setup mode.
3. Press the Input 1-6 button(s) to set HDCP.
4. If the LED is on, HDCP passes to the port.
If flashing, HDCP does not.
5. Press the Lock button to confirm the choice or the Off button to quit.
If no button is pressed, the mode quits after 10 seconds.

Setting the Audio Output

The audio output can be set to ARC or de-embedded audio output.

To set the audio output:

1. Press and hold the Off + Input 3 buttons. The Lock and Input 3 LEDs flash.
2. Press the Input 3 button to set ARC/de-embedding audio:
 - ARC audio out – Flashing LED 3
 - De-embedding audio out – Solid LED 3



When inputting ARC or HDMI multi-channel LPCM audio, the analog outputs the front right and front left components. If the device is in ARC mode and compressed audio is input, speakers connected to the analog output produce noise.

Setting the Switching Speed

The **VS-611DT** supports setting normal and fast (default) switching speeds.

To set switching speed modes:

1. Disconnect device power.
2. Press and hold one of the following buttons together with the OFF button:
 - IN 1 button – for setting fast switching speed mode.
 - IN 2 button – for setting normal switching speed mode.
3. Power the device on.
The device switching speed is modified.

Switching speed can also be set using the Routing Web page (see [Routing Inputs to Outputs on page 14](#)).

Using VCOM on USB

The device's USB port can work as a virtual COM (VCOM) port. Verify that the USB port on the PC that connects to the **VS-611DT** is configured as a VCOM port. You may need to install a driver to do this. Use a tool such as Hercules or K-Config to use P3K over USB. For more information on using the commands (see [Protocol 3000](#) on page [25](#)).

Upgrading the Firmware

The **VS-611DT** can be upgraded via USB or RS-232.

For instructions on upgrading the firmware, see “*K-Upload Software User Guide*” (https://www1.kramerav.com/gc/product/VS-611DT?#Tab_Resources).

Step-In Support

The **VS-611DT** supports programmable step-in functionality when used in conjunction with compatible step-in devices, such as the **SID-X3N** and **DIP-31** (using an HDMI cable that supports HEC, the HDMI Ethernet Channel).

When ARC mode is enabled, Input 1 step-in mode is disabled. If you require step-in mode on Input 1, set the audio output to the device inputs (see [Routing Inputs to Outputs on page 14](#)).

Controlling the VS-611DT via the Terminal Block Connector

The INPUT SELECT terminal block connector includes six input pins and a G pin for selecting an input.

The contact closure remote control pins operate in a similar way to the input buttons (see [Manual Switch Mode on page 9](#)). Using the contact closure remote control (also known as push-to-make momentary contact) you can select any of the inputs. To do so, momentarily connect the required input pin (1 to 6) to the G (ground) pin of the INPUT SELECT terminal block connector, as **Error! Reference source not found.** illustrates.



Do not connect more than one input pin to the G pin at the same time.

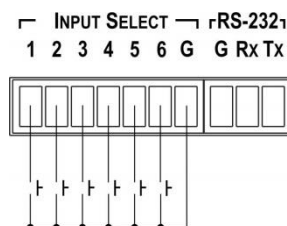


Figure 3: Connecting the Contact Closure Remote Control Pins

Using the Web Pages

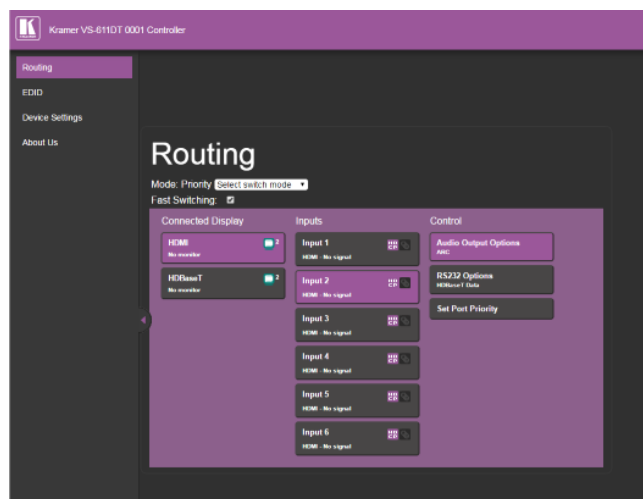
Use the Web page to control the device: switch the input, set the switch mode, set the ARC link, import HDCP and more.

To access the Web page:

- Enter the IP address (192.168.1.39) in the browser.
The Router window opens.

Routing Inputs to Outputs

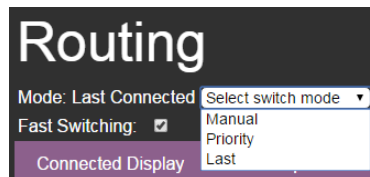
- On the left side, click the Routing tab.
The Routing window opens:



Feature	Function
<i>Mode Dropdown</i>	Click to select <i>Manual</i> , <i>Priority</i> or <i>Last</i>
<i>Fast Switching Checkbox</i>	Click to select/de-select fast switching
<i>Connected Display</i>	Click to select <i>HDMI</i> or <i>HDBaseT</i> Click small insert box to mute/un-mute video
<i>Inputs (1 through 6)</i>	Click to select <i>Input 1</i> through <i>Input 6</i> Click HDCP insert box to select/de-select HDCP Click Remote insert box to set remote device settings
<i>Control – Audio Output Options</i>	Click to select <i>Input HDMI Audio</i> or <i>ARC</i>
<i>Control – RS-232 Options</i>	Click to select <i>Local RS-232</i> or <i>HDBaseT Data</i>
<i>Set Port Priority</i>	Click to open the priority selector. Click the <i>Set</i> dropdown and choose a numerical priority for the port (1 to 6)

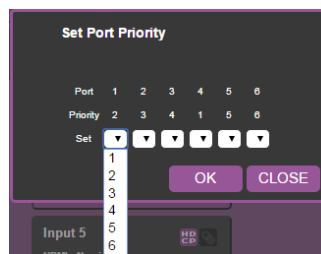
To select a switching mode:

1. Click the Select switching mode dropdown.
2. Choose from Manual, Priority and Last.



To set port priority:

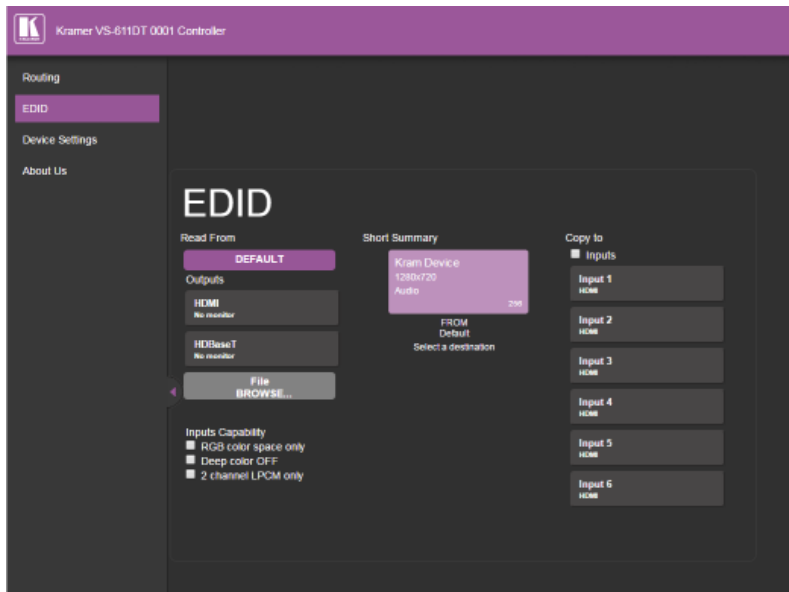
1. Click **Set Port Priority**.
The Set Port Priority window opens.



2. Click the **Set** dropdown for the desired port.
3. Set a priority from 1 to 6.
4. Click **OK** to set.

Using EDID Settings

- On the left side, click the EDID tab.
The EDID window opens:



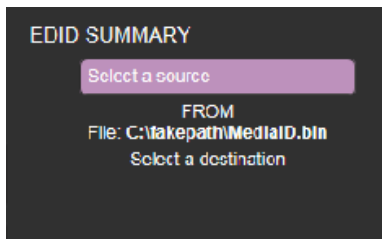
Feature	Function
<i>Read From</i>	Click to select the <i>Default EDID</i> , or the <i>Outputs (HDMI monitor or HDBaseT monitor)</i>
<i>File Browse</i>	Click to open a window that allows you to browse and select an EDID saved to the computer disk
<i>Inputs Capability</i>	Click to select/deselect: <i>RGB color space only</i> <i>Deep color Off</i> <i>2-Channel LPCM only</i>
<i>Short Summary</i>	Describes the characteristics of the EDID source device
<i>Copy To</i>	Click the <i>Inputs</i> checkbox to select/deselect all input devices Click each input to which to copy the chosen EDID

To copy EDID data from an output or an EDID file to inputs:

1. Click the source button (output) from which to copy the EDID. The button changes color and the EDID summary shows the EDID data.
2. To copy an EDID file, click the source Browse button. The Windows Browser opens.
3. Browse to the required file.
4. Select the required file and click Open.
5. Click the input capability checkbox.
6. When Set Color Space selected, the EDID color space is set to RGB only when copying the EDID.
7. When Set Deep Color selected, the EDID deep color is set to 24-bits only when copying the EDID.
8. Click one or more destination inputs, or select all inputs by checking the Inputs checkbox. All selected input buttons change color and the EDID summary information reflects the input selection(s).
9. Click the Copy button. The “EDID was copied” success message is displayed and EDID data is copied to the selected input(s).
10. Click OK.



When selecting the EDID file, if the path indicates \fakepath\ as shown in the following illustration, allow the browser to upload the file in the browse Tool/Internet. Safari does not support file upload.



Setting Device ID Parameters

The Device Settings page enables you modify some communication parameters and view others.

Kramer VS-611DT Controller

Routing
EDID
Device Settings
About Us

Settings

Information

Model: VS-611DT

DNS Name: KRAMER_0023

Firmware Version: 02.01.0003

Serial Number: 05180107000023

Active Input Loss Settings

Display Standby Enable: ON OFF

Delay Output Standby (sec): SET

Exit Manual Override (sec): SET

Ethernet Settings

DHCP: Enable Disable

IP Address: SET

TCP Port: SET

UDP Port: SET

Subnet Mask: SET

Gateway: SET

MAC Address: 00-1D-56-05-35-49

Factory Reset

Firmware Upgrade

Choose a file

BROWSE

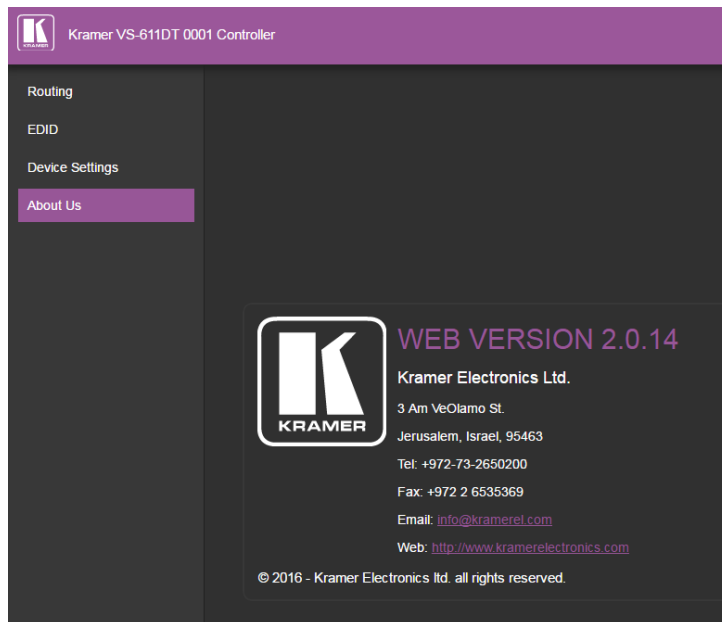
START UPGRADE IDLE

To modify serial or Ethernet communication parameters:

1. Adjust the parameters as required, either by entering the parameters directly or by using the drop-down list.
2. Click **Set**. The changes are saved.
3. Re-power the device.

Contacting Kramer

The About Us screen displays the version of the Web software, Kramer's address, phone, email and Web site.



Technical Specifications

INPUTS:	6 HDMI connectors, 1 IR on a 3.5mm mini-jack
OUTPUTS:	1 HDMI connector, 1 HDBaseT on an RJ-45 connector, 1 balanced stereo audio on a 5-pin terminal block
PORTS:	1 Ethernet on an RJ-45 connector, 1 RS-232 connector on a 3-pin terminal block, 6 contact closures on a 7-pin terminal block, 1 USB mini-B connector for firmware upgrading
MAX. DATA RATE:	9Gbps (3Gbps per graphic channel) with 4K support
COMPLIANCE WITH HDMI STANDARD:	Deep Color, Ethernet, ARC, up to 7.1 Audio Channels, CEC
OUTPUT RESOLUTIONS:	Up to UXGA, 4K x 2K, 4K@60Hz (4:2:0)
CONTROLS:	Front panel keyboard, HDBaseT Ethernet, RS-232, IR, contact closure
SOFTWARE SUPPORT:	Protocol 3000, K-Router Plus, EDID Designer, K-Upload
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
POWER CONSUMPTION:	12V DC, 2.8A
DIMENSIONS:	21.5cm x 16.3cm x 4.4cm (8.5" x 6.4" x 1.7") W, D, H (1/2 19" 1U)
WEIGHT:	0.95kg (2.1lbs) approx.
SHIPPING DIMENSIONS:	35.1cm x 21.2cm x 7.2cm (13.8" x 8.4" x 2.8") W, D, H
SHIPPING WEIGHT:	1.58kg (3.5lbs)
INCLUDED ACCESSORIES:	Power cord
<p>Specifications are subject to change without notice For the most updated resolution list, go to our Web site at www.kramerav.com</p>	

Supported Resolutions

VIC Number	Resolution
0	No Signal (for input) / Native – EDID (for output)
1	640x480p @59.94Hz/60Hz
2	720x480p @59.94Hz/60Hz
3	720x480p @59.94Hz/60Hz
4	1280x720p @59.94Hz/60Hz
5	1920x1080i @59.94Hz/60Hz
6	720(1440)x480i @59.94Hz/60Hz
7	720(1440)x480i @59.94Hz/60Hz
8	720(1440)x240p @59.94Hz/60Hz
9	720(1440)x240p @59.94Hz/60Hz
10	2880x480i @59.94Hz/60Hz
11	2880x480i @59.94Hz/60Hz
12	2880x240p @59.94Hz/60Hz
13	2880x240p @59.94Hz/60Hz
14	1440x480p @59.94Hz/60Hz
15	1440x480p @59.94Hz/60Hz
16	1920x1080p @59.94Hz/60Hz
17	720x576p @50Hz
18	720x576p @50Hz
19	1280x720p @50Hz
20	1920x1080i @50Hz
21	720(1440)x576i @50Hz
22	720(1440)x576i @50Hz
23	720(1440)x288p @50Hz
24	720(1440)x288p @50Hz
25	2880x576i @50Hz
26	2880x576i @50Hz
27	2880x288p @50Hz
28	2880x288p @50Hz
29	1440x576p @50Hz
30	1440x576p @50Hz
31	1920x1080p @50Hz
32	1920x1080p @23.97Hz/24Hz
33	1920x1080p @25Hz
34	1920x1080p @29.97Hz/30Hz
35	2880x480p @59.94Hz/60Hz
36	2880x480p @59.94Hz/60Hz
37	2880x576p @50Hz
38	2880x576p @50Hz
39	1920x1080i @50Hz
40	1920x1080i @100Hz
41	1280x720p @100Hz
42	720x576p @100Hz

VIC Number	Resolution
43	720x576p @100Hz
44	720(1440)x576i @100Hz
45	720(1440)x576i @100Hz
46	1920x1080i @119.88/120Hz
47	1280x720p @119.88/120Hz
48	720x480p @119.88/120Hz
49	720x480p @119.88/120Hz
50	720(1440)x480i @119.88/120Hz
51	720(1440)x480i @119.88/120Hz
52	720x576p @200Hz
53	720x576p @200Hz
54	720(1440)x576i @200Hz
55	720(1440)x576i @200Hz
56	720x480p @239.76/240Hz
57	720x480p @239.76/240Hz
58	720(1440)x480i @239.76/240Hz
59	720(1440)x480i @239.76/240Hz
60	1280x720p @23.97Hz/24Hz
61	1280x720p @25Hz
62	1280x720p @29.97Hz/30Hz
63	1920x1080p @119.88/120Hz
64	1920x1080p @100Hz

Default Settings

The **VS-611DT** has the following default settings for communication, first power on and EDID.

Default Communication Settings

RS-232	
Protocol 3000 (Default)	
Baud Rate	9600
Data Bits	8
Stop Bits	1
Parity	None
Command Format	ASCII

First Power On Default Settings

Parameter	Value
Out HDCP mode	Follow
Communication Format	KMR3000 (KMR device)
Close Output 5v Time	30sec
Current Input Source Port	Input port 1
Manual/Auto Switch Mode	Auto mode
Pr/Lc Switch Mode	Priority mode

Parameter	Value
ARC/De-embed Audio Out	De-embed audio out
RS-232 Connection	CPU
Input Port HDCP	All ON
Kramer 3000 Model Name	'V', 'S', '-', '6', '1', '1', 'D', 'T'
EDID	Default
USB for Virtual Com	Virtual Com
IP Address	192.168.1.39
Mask Number	255.255.0.0
Gateway Number	192.168.0.254
DHCP	Disabled (OFF)

Default EDID

```

Model name..... VS-611DT
Manufacturer..... KMR
Plug and Play ID..... KMR03ED
Serial number..... 1
Manufacture date..... 2014, ISO week 15
Filter driver..... None
-----
EDID revision..... 1.3
Input signal type..... Digital (HDMI-a)
Color bit depth..... Undefined
Display type..... RGB color
Screen size..... 700 x 390 mm (31.5 in)
Power management..... Not supported
Extension blocs..... 1 (CEA-EXT)
-----
DDC/CI..... Not supported

Color characteristics
Default color space..... Non-sRGB
Display gamma..... 2.20
Red chromaticity..... Rx 0.640 - Ry 0.341
Green chromaticity..... Gx 0.286 - Gy 0.610
Blue chromaticity..... Bx 0.146 - By 0.069
White point (default).... Wx 0.284 - Wy 0.293
Additional descriptors... None

Timing characteristics
Horizontal scan range.... 31-94kHz
Vertical scan range..... 50-85Hz
Video bandwidth..... 170MHz
CVT standard..... Not supported
GTF standard..... Not supported
Additional descriptors... None
Preferred timing..... Yes
Native/preferred timing.. 1280x720p at 60Hz
Modeline..... "1280x720" 74.250 1280 1390 1430 1650 720 725 730 750 +hsync +vsync
Detailed timing #1..... 1920x1080p at 60Hz (16:9)
Modeline..... "1920x1080" 148.500 1920 2008 2052 2200 1080 1084 1089 1125 +hsync +vsync

Standard timings supported
720 x 400p at 70Hz - IBM VGA
720 x 400p at 88Hz - IBM XGA2
640 x 480p at 60Hz - IBM VGA
640 x 480p at 67Hz - Apple Mac II
640 x 480p at 72Hz - VESA
640 x 480p at 75Hz - VESA
800 x 600p at 56Hz - VESA
800 x 600p at 60Hz - VESA
800 x 600p at 72Hz - VESA
800 x 600p at 75Hz - VESA
832 x 624p at 75Hz - Apple Mac II
1024 x 768i at 87Hz - IBM
1024 x 768p at 60Hz - VESA
1024 x 768p at 70Hz - VESA
1024 x 768p at 75Hz - VESA
1280 x 1024p at 75Hz - VESA
1152 x 870p at 75Hz - Apple Mac II
1280 x 720p at 60Hz - VESA STD
1280 x 800p at 60Hz - VESA STD
1440 x 900p at 60Hz - VESA STD
1280 x 960p at 60Hz - VESA STD

```

1280 x 1024p at 60Hz - VESA STD
 1400 x 1050p at 60Hz - VESA STD
 1680 x 1050p at 60Hz - VESA STD
 1600 x 1200p at 60Hz - VESA STD

EIA/CEA-861 Information

Revision number..... 3
 IT underscan..... Not supported
 Basic audio..... Supported
 YCbCr 4:4:4..... Not supported
 YCbCr 4:2:2..... Not supported
 Native formats..... 1
 Detailed timing #1..... 720x480p at 60Hz (4:3)
 Modeline..... "720x480" 27.000 720 736 798 858 480 489 495 525 -hsync -vsync
 Detailed timing #2..... 1920x1080i at 60Hz (16:9)
 Modeline..... "1920x1080i" 74.250 1920 2008 2052 2200 1080 1084 1094 1124 interface +hsync +vsync
 Detailed timing #3..... 1920x1080i at 50Hz (16:9)
 Modeline..... "1920x1080i" 74.250 1920 2448 2492 2640 1080 1084 1094 1124 interface +hsync +vsync
 Detailed timing #4..... 1280x720p at 60Hz (16:9)
 Modeline..... "1280x720" 74.250 1280 1390 1430 1650 720 725 730 750 +hsync +vsync
 Detailed timing #5..... 1280x720p at 50Hz (16:9)
 Modeline..... "1280x720" 74.250 1280 1720 1760 1980 720 725 730 750 +hsync +vsync

CE video identifiers (VICs) - timing/formats supported

720 x 576p at 50Hz - EDTV (4:3, 16:15)
 1280 x 720p at 50Hz - HDTV (16:9, 1:1)
 1920 x 1080i at 60Hz - HDTV (16:9, 1:1)
 1920 x 1080i at 50Hz - HDTV (16:9, 1:1)
 1280 x 720p at 60Hz - HDTV (16:9, 1:1) [Native]
 1920 x 1080p at 60Hz - HDTV (16:9, 1:1)
 1920 x 1080p at 50Hz - HDTV (16:9, 1:1)
 NB: NTSC refresh rate = (Hz*1000)/1001

CE audio data (formats supported)

LPCM 2-channel, 24-bits at 44/48 kHz

CE speaker allocation data

Channel configuration.... 2.0
 Front left/right..... Yes
 Front LFE..... No
 Front center..... No
 Rear left/right..... No
 Rear center..... No
 Front left/right center.. No
 Rear left/right center... No
 Rear LFE..... No

CE vendor specific data (VSDB)

IEEE registration number. 0x000C03
 CEC physical address..... 1.0.0.0
 Maximum TMDS clock..... 165MHz

Report information

Date generated..... 03/11/2015
 Software revision..... 2.60.0.972
 Data source..... Real-time 0x0042
 Operating system..... 6.1.7601.2.Service Pack 1

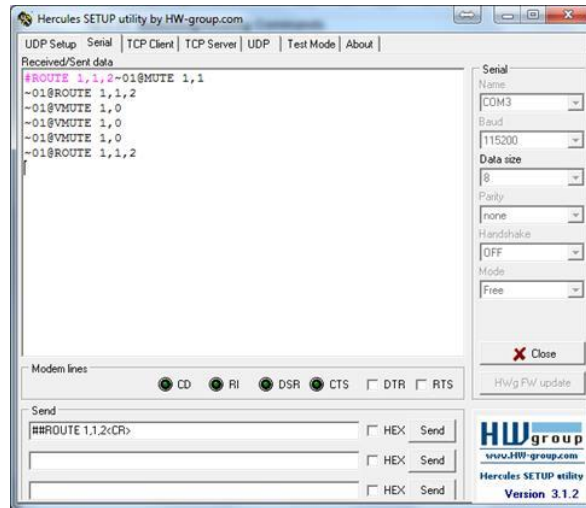
Raw data


00,FF,FF,FF,FF,FF,00,2D,B2,ED,03,01,00,00,00,0F,18,01,03,82,46,27,78,0A,D5,7C,A3,57,49,9C,25,
 11,48,4B,FF,FF,80,81,C0,81,00,95,00,81,40,81,80,90,40,B3,00,A9,40,01,1D,00,72,51,D0,1E,20,6E,28,
 55,00,7E,88,42,00,00,1E,02,3A,80,18,71,38,2D,40,58,2C,45,00,C4,8E,21,00,00,1E,00,00,00,FC,00,56,
 53,2D,36,31,31,44,54,0A,20,20,20,20,00,00,00,FD,00,32,55,1F,5E,11,00,0A,20,20,20,20,20,01,B1,
 02,03,1A,41,47,11,13,05,14,84,10,1F,23,09,06,04,83,01,00,00,65,03,0C,00,10,00,8C,0A,D0,8A,20,E0,
 2D,10,10,3E,96,00,58,C2,21,00,00,18,01,1D,80,18,71,1C,16,20,58,2C,25,00,C4,8E,21,00,00,9E,01,1D,
 80,D0,72,1C,16,20,10,2C,25,80,C4,8E,21,00,00,9E,01,1D,00,72,51,D0,1E,20,6E,28,55,00,C4,8E,21,00,
 00,1E,01,1D,00,BC,52,D0,1E,20,B8,28,55,40,C4,8E,21,00,00,1E,00,00,00,00,00,00,00,00,00,00,C5

Protocol 3000

The **VS-611DT** can be operated using the Kramer Protocol 3000 serial commands. The command framing varies according to how you interface with the **VS-611DT**. In the following example, a basic video input switching command that routes a layer 1 video signal to HDBT out 1 from HDMI input 2 (ROUTE 1, 1, 2), is entered as follows:

- Terminal communication software, such as Hercules:




 The framing of the command varies according to the terminal communication software.



- K-Touch Builder (Kramer software):

'Device Code (17)' PROPERTIES	
name	Device Code (17)
data	#ROUTE 1,1,2w0D

- K-Config (Kramer configuration software):

Command Syntax Display Command as Hex Decimal ASCII

 All the examples provided in this section are based on using the K-Config software.

You can enter commands directly using terminal communication software (e.g., Hercules) by connecting a PC to the serial, Ethernet or the USB (VCOM) port on the **VS-611DT**. To enter  press the Enter key ( is also sent but is ignored by the command parser).

Commands sent from various non-Kramer controllers (e.g., Crestron) may require special coding for some characters (such as, /x##). For more information, refer to your controller's documentation.

For more information about:

- Using Protocol 3000 commands, see [Understanding Protocol 3000](#) on page 26.
- General syntax used for Protocol 3000 commands, see [Kramer Protocol 3000 Syntax](#) on page 27.
- Protocol 3000 commands available for the **VS-611DT**, see [Protocol 3000 Commands](#) on page 28.

Understanding Protocol 3000

Protocol 3000 commands are structured according to the following:

- **Command** – A sequence of ASCII letters (A-Z, a-z and -). A command and its 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.



A string can contain more than one command. Commands are separated by a pipe (|) character. The maximum string length is 64 characters.

- **Message starting character:**
 - # – For host command/query
 - ~ – For device response
- **Device address** – K-NET Device ID followed by @ (optional, K-NET only)
- **Query sign** – ? follows some commands to define a query request
- **Message closing character:**
 - CR – Carriage return for host messages (ASCII 13)
 - CR LF – Carriage return for device messages (ASCII 13) and line-feed (ASCII 10)
- **Command chain separator character** – 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 at the beginning and end of the string.



Spaces between parameters or command terms are ignored. Commands in the string do not execute until the closing character is entered. A separate response is sent for every command in the chain.

Kramer Protocol 3000 Syntax

The Kramer Protocol 3000 syntax uses the following delimiters:

- **CR** = Carriage return (ASCII 13 = 0x0D)
- **LF** = Line feed (ASCII 10 = 0x0A)
- **SP** = Space (ASCII 32 = 0x20)

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

The Protocol 3000 syntax is in the following format:

- Host Message Format:

Start	Address (optional)	Body	Delimiter
#	<i>Device_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 command concatenation and addressing:

Start	Address	Body	Delimiter
#	<i>Device_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>Device_id@</i>	Message	CR LF

- Device Long Response – Echoing command:

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

Protocol 3000 Commands

This section lists and describes all the Protocol 3000 commands supported by the **VS-611DT**.

- System Commands (see [System Commands](#) on page 28).
- Switching/Routing Commands (see [Switching/Routing Commands](#) on page 36).
- Communication Commands (see [Communication Commands](#) on page 39).
- EDID Handling Commands (see [EDID Handling Commands](#) on page 41).

System Commands

Command	Description	Type	Permission
#	Protocol handshaking	System – mandatory	End User
BUILD-DATE	Get device build date	System – mandatory	End User
FACTORY	Reset to factory default configuration	System – mandatory	End User
HELP	Get command list	System – mandatory	End User
IDV	Set visual indication from device	System	End User
INFO-IO	Get in/out count	System	End User
LOCK-FP	Set/get front panel lock	System	Administrator
MODEL	Get device model	System-mandatory	End User
NAME	Set/get machine (DNS) name	System – Ethernet	Administrator
PROT-VER	Get device protocol version	System – mandatory	End User
RESET	Reset device	System – mandatory	Administrator
SIGNAL	Get input signal lock status	System	End User
SN	Get device serial number	System – mandatory	End User
VERSION	Get device firmware version	System – mandatory	End User

#

Functions		Permission	Transparency
Set:	#	End User	Public
Get:	-	-	-
Description		Syntax	
Set:	Protocol handshaking	#CR	
Get:	-	-	
Response			
~nn@SPokCR LF			
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			
K-Config Example			
`#", 0x0D			

BUILD-DATE

Functions		Permission	Transparency
Set:	-	-	-
Get:	BUILD-DATE?	End User	Public
Description		Syntax	
Set:	-	-	
Get:	Get device build date	#BUILD-DATE?CR	
Response			
~nn@BUILD-DATESPdateSPtimeCR LF			
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			
Response Triggers			
Notes			
K-Config Example			
`#BUILD-DATE?", 0x0D			

FACTORY

Functions		Permission	Transparency
Set:	FACTORY	End User	Public
Get:	-	-	-
Description		Syntax	
Set:	Reset device to factory default configuration	# FACTORY <code>CR</code>	
Get:	-	-	
Response			
~ <code>nn</code> @ FACTORY <code>SP</code> OK <code>CR LF</code>			
Parameters			
Response Triggers			
Notes			
This command deletes all user data from the device. The deletion can take some time. Your device may require powering off and powering on for the changes to take effect.			
K-Config Example			
"#FACTORY", 0x0D			

HELP

Functions		Permission	Transparency
Set:	-	-	-
Get:	HELP	End User	Public
Description		Syntax	
Set:	-	-	
Get:	Get command list or help for specific command	1. #HELP <code>CR</code> 2. #HELP <code>SP</code> COMMAND_NAME <code>CR</code>	
Response			
1. Multi-line: ~ <code>nn</code> @Device available protocol 3000 commands: <code>CR LF</code> command, <code>SP</code> command... <code>CR LF</code>			
2. Multi-line: ~ <code>nn</code> @HELP <code>SP</code> command: <code>CR LF</code> description <code>CR</code> <code>LF</code> USAGE:usage <code>CR LF</code>			
Parameters			
COMMAND_NAME – name of a specific command			
Response Triggers			
Notes			
To get help for a specific command use: HELP <code>SP</code> COMMAND_NAME <code>CR</code> <code>LF</code>			
K-Config Example			
"#HELP", 0x0D			

IDV

Functions		Permission	Transparency
Set:	IDV	End User	Public
Get:	-	-	-
Description		Syntax	
Set:	Set visual indication from device	#IDV[CR]	
Get:	-	-	
Response			
~nn@IDV[SP]OK[CR] LF			
Parameters			
Response Triggers			
Notes			
Using this command, some devices can light a sequence of buttons or LEDs to allow identification of a specific device from similar devices			
K-Config Example			
"#IDV",0x0D			

INFO-IO

Functions		Permission	Transparency
Set:	-	-	-
Get:	INFO-IO?	End User	Public
Description		Syntax	
Set:	-	-	
Get:	Get in/out count	#INFO-IO?[CR]	
Response			
~nn@INFO-IO?[SP]IN[SP]inputs_count,OUT[SP]outputs_count[CR] LF			
Parameters			
<i>inputs_count</i> – number of inputs in the unit <i>outputs_count</i> – number of outputs in the unit			
Response Triggers			
Notes			
K-Config Example			
"#INFO-IO?",0x0D			

LOCK-FP

Functions		Permission	Transparency
Set:	LOCK-FP	End User	Public
Get:	LOCK-FP?	End User	Public
Description		Syntax	
Set:	Lock front panel	Option 1: # LOCK-FP [SP] <i>lock_mode</i> [CR]	
Get:	Get front panel lock state	Option 1: # LOCK-FP? [CR]	
Response			
Set: Option 1: ~ <i>nn</i> @ LOCK-FP [SP] <i>lock_mode</i> [SP] OK [CR LF]			
Get: Option 1: ~ <i>nn</i> @ LOCK-FP [SP] <i>lock_mode</i> [CR LF]			
Parameters			
<i>lock_mode</i> – 0 / OFF (unlocks the front panel buttons), 1 / ON (locks the front panel buttons)			
Response Triggers			
Notes			
K-Config Example			
Lock all the front panel buttons: `#LOCK-FP", 0x0D			
Lock ???: `#LOCK-FP", 0x0D			

MODEL

Functions		Permission	Transparency
Set:	-	-	-
Get:	MODEL?	End User	Public
Description		Syntax	
Set:	-	-	
Get:	Get device model	# MODEL? [CR]	
Response			
~ <i>nn</i> @ MODEL [SP] <i>model_name</i> [CR LF]			
Parameters			
<i>model_name</i> – String of up to 19 printable ASCII chars			
Response Triggers			
Notes			
This command identifies equipment connected to Step-in master products and notifies of identity changes to the connected equipment. The Matrix saves this data in memory to answer REMOTE-INFO requests			
K-Config Example			
`#MODEL?", 0x0D			

NAME

Functions		Permission	Transparency
Set:	NAME	Administrator	Public
Get:	NAME?	End User	Public
Description		Syntax	
Set:	Set machine (DNS) name	# NAME SP <i>machine_name</i> CR	
Get:	Get machine (DNS) name	# NAME? CR	
Response			
Set:	~nn@ NAME SP <i>machine_name</i> CR LF		
Get:	~nn@ NAME? SP <i>machine_name</i> CR LF		
Parameters			
<i>machine_name</i> – String of up to 15 alpha-numeric chars (can include hyphens, not at the beginning or end)			
Response Triggers			
Notes			
The machine name is not the same as the model name. The machine name is used to identify a specific machine or a network in use (with DNS feature on)			
K-Config Example			
Set the DNS name of the device to "room-442": `#NAME room-442", 0x0D			

PROT-VER

Functions		Permission	Transparency
Set:	-	-	-
Get:	PROT-VER?	End User	Public
Description		Syntax	
Set:	-	-	
Get:	Get device protocol version	# PROT-VER? CR	
Response			
~nn@ PROT-VER SP 3000: <i>version</i> CR LF			
Parameters			
<i>Version</i> – XX.XX where X is a decimal digit			
Response Triggers			
Notes			
K-Config Example			
`#PROT-VER?", 0x0D			

RESET

Functions		Permission	Transparency
Set:	RESET	Administrator	Public
Get:	-	-	-

Description		Syntax
Set:	Reset device	#RESET<CR>
Get:	-	-
Response		
~nn@RESET<SP>OK<CR> <LF>		
Parameters		
Response Triggers		
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.		
K-Config Example		
`#RESET`, 0x0D		

SIGNAL

Functions	Permission	Transparency
Set:	-	-
Get	SIGNAL?	End User Public
Description		Syntax
Set:	-	-
Get:	Get input signal lock status	#SIGNAL?<SP>inp_id<CR>
Response		
~nn@sIGNAL<SP>inp_id,status<CR> <LF>		
Parameters		
inp_id – 1 (Input 1), 2 (Input 2), 3 (Input 3), 4 (Input 4), 5 (Input 5), 6 (Input 6) status – Lock status according to signal validation: 0 (signal or sink is not valid), 1 (signal or sink is valid), 2 (sink and EDID is valid)		
Response Triggers		
After execution, a response is sent to the com port from which the Get was received Response is sent after every change in input signal status ON to OFF, or OFF to ON		
Notes		
K-Config Example		
Get the input signal lock status of Input 3: `#SIGNAL? 3`, 0x0D		

SN

Functions		Permission	Transparency
Set:	-	-	-
Get:	SN?	End User	Public
Description		Syntax	
Set:	-	-	
Get:	Get device serial number	# SN? <input type="checkbox"/> CR	
Response			
~ <input type="checkbox"/> <input type="checkbox"/> @ SN <input type="checkbox"/> SPserial_numberCR LF			
Parameters			
serial_number – 11 decimal digits, factory assigned			
Response Triggers			
Notes			
This device has a 14 digit serial number, only the last 11 digits are displayed			
K-Config Example			
"#SN?", 0x0D			

VERSION

Functions		Permission	Transparency
Set:	-	-	-
Get:	VERSION?	End User	Public
Description		Syntax	
Set:	-	-	
Get:	Get firmware version number	# VERSION? <input type="checkbox"/> CR	
Response			
~ <input type="checkbox"/> <input type="checkbox"/> @ VERSION <input type="checkbox"/> SPfirmware_versionCR LF			
Parameters			
firmware_version – XX.XX.XXXX where the digit groups are: major.minor.build version			
Response Triggers			
Notes			
K-Config Example			
"#VERSION?", 0x0D			

Switching/Routing Commands

Command	Description	Type	Permission
DISPLAY	Get output HPD status	Switching	End User
VID	Set/get video switch state	Switching	End User
ROUTE	Set/get layer routing	Switching	End User

DISPLAY

Functions	Permission	Transparency
Set: -	-	-
Get: DISPLAY?	End User	Public
Description	Syntax	
Set: -	-	
Get: Get output HPD status	# DISPLAY? <code>SP</code> <code>out_id</code> <code>CR</code>	
Response		
~ <code>an</code> @ DISPLAY <code>SP</code> <code>out_id,status</code> <code>CR LF</code>		
Parameters		
<i>out_id</i> – 1 (HDBT Out), 2 (HDMI Out) <i>status</i> – HPD status according to signal validation: 0 (signal or sink is not valid), 1 (signal or sink is valid), 2 (sink and EDID is valid)		
Response Triggers		
After execution, response is sent to the com port from which the Get was received Response is sent after every change in output HPD status ON to OFF Response is sent after every change in output HPD status OFF to ON and ALL parameters (new EDID, etc.) are stable and valid		
Notes		
K-Config Example		
Get the output HPD status of HDMI Out: ``#DISPLAY? 2",0x0D		

VID

Functions		Permission	Transparency
Set:	VID	End User	Public
Get:	VID?	End User	Public
Description		Syntax	
Set:	Set video switch state	#VID[SP]in>out,in>out,...[CR]	
Get:	Get video switch state	#VID?[SP]out[CR] #VID?[SP]*[CR]	
Response			
Set:	~nn@VID[SP]in>out[CR LF] ~nn@VID[SP]in>out[CR LF]		
Get:	~nn@VID[SP]in>out[CR LF] ~nn@VID[SP]in>1,in>2,...[CR LF]		
Parameters			
<i>in</i> – Input number: 0 (disconnect output), 1 (Input 1), 2 (Input 2), 3 (Input 3), 4 (Input 4), 5 (Input 5), 6 (Input 6) <i>></i> – Connection character between in and out parameters <i>out</i> – Output number: * (all outputs), 1 (HDBT Out), 2 (HDMI Out)			
Response Triggers			
Notes			
Examples			
Switch video and audio input 3 to output 2	#AV 3>2[CR]	~01@AV 3>2[CRLF]	
Switch video input 6 to output 1	#V 6>1[CR]	~01@VID 6>1[CRLF]	
Disconnect video and audio output 2	#AV 0>2[CR]	~01@AV 0>2[CRLF]	
Switch video input 3 to all outputs	#V 3>*[CR]	~01@VID 3>*[CRLF]	
Chainin g multiple comma nds	#AV 1>* V3>2,2>2,2>1,0>2 V3>9 A0>1 V? *[CR] 1. Switch audio and video from input 1 to all outputs 2. Switch video input 3 to output 2, video input 2 to output 2, video input 2 to output 1 and disconnect video output 2 3. Switch video input 3 to output 9 (non- existent) 4. Disconnect audio output 1 5. Get status of all video links Command processing begins after entering [CR] A response is sent for each command after processing	~AV 1>*[CRLF] ~VID 3>2 [CRLF] ~VID 2>2 [CRLF] ~VID 2>1 [CRLF] ~VID 0>2 [CRLF] ~VID [ERR003] [CRLF] ~AUD 0>1[CRLF] ~VID 2>1, 0>2, 1>3, 3>4 [CRLF]	

ROUTE

Functions		Permission	Transparency
Set:	ROUTE	End User	Public
Get:	ROUTE?	End User	Public
Description		Syntax	
Set:	Set layer routing	# ROUTE [SP] <i>layer,dest,src</i> [CR]	
Get:	Get layer routing	# ROUTE? [SP] <i>layer,dest</i> [CR]	
Response			
~m# ROUTE [SP] <i>layer,dest,src</i> [CR LF]			
Parameters			
<i>layer</i> – 1 (video) <i>dest</i> – 1 (HDMI Out), 2 (HDBT Out) <i>src</i> – 1 (HDMI Input 1), 2 (HDMI Input 2), 3 (HDMI Input 3), 4 (HDMI Input 4), 5 (HDMI Input 5), 6 (HDMI Input 6)			
Response Triggers			
Notes			
The get command identifies input switching on Step-in clients The set command is for remote input switching on Step-in clients (essentially via by the Web)			
Example			
Set the remote input switching of video to HDMI Out from HDMI Input 2: "#ROUTE 1,1,2",0x0D			

Communication Commands

These commands are used by network devices running Protocol 3000.

Command	Description	Type	Permission
ETH-PORT	Set/get Ethernet port protocol	Communication	Administrator
NET-DHCP	Set/get DHCP mode	Communication	Administrator
NET-GATE	Set/get gateway IP	Communication	Administrator
NET-IP	Set/get IP address	Communication	Administrator
NET-MASK	Set/get subnet mask	Communication	Administrator

ETH-PORT

Functions		Permission	Transparency
Set:	ETH-PORT	Administrator	Public
Get:	ETH-PORT?	End User	Public
Description		Syntax	
Set:	Set Ethernet port protocol	# ETH-PORT [SP] <i>portType</i> , <i>ETHPort</i> [CR]	
Get:	Get Ethernet port protocol	# ETH-PORT? [SP] <i>portType</i> [CR]	
Response			
~nn@ ETH-PORT [SP] <i>portType</i> , <i>ETHPort</i> [CR LF]			
Parameters			
<i>portType</i> – String of 3 letters indicating the port type: TCP, UDP			
<i>ETHPort</i> – TCP / UDP port number: 0-65565			
Response Triggers			
Notes			
K-Config Example			
Set the Ethernet port protocol for TCP to port 12457: `#ETH-PORT TCP,12457",0x0D`			

NET-DHCP

Functions		Permission	Transparency
Set:	NET-DHCP	Administrator	Public
Get:	NET-DHCP?	End User	Public
Description		Syntax	
Set:	Set DHCP mode	#NET-DHCP SP mode CR	
Get:	Get DHCP mode	#NET-DHCP? CR	
Response			
~nn@NET-DHCP SP mode CR LF			
Parameters			
<i>mode</i> – 0 (do not use DHCP; use the IP address set by the factory or the NET-IP command), 1 (try to use DHCP; if unavailable, use the IP address set by the factory or the NET-IP command)			
Response Triggers			
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 NAME command. You can also get an assigned IP by direct connection to USB or RS-232 protocol port if available. Consult your network administrator for correct settings.			
K-Config Example			
Enable DHCP mode, if available: "#NET-DHCP 1", 0x0D			

NET-GATE

Functions		Permission	Transparency
Set:	NET-GATE	Administrator	Public
Get:	NET-GATE?	End User	Public
Description		Syntax	
Set:	Set gateway IP	#NET-GATE SP ip_address CR	
Get:	Get gateway IP	#NET-GATE? CR	
Response			
~nn@NET-GATE SP ip_address CR LF			
Parameters			
<i>ip_address</i> – Gateway IP address, in the following format: xxx.xxx.xxx.xxx			
Response Triggers			
Notes			
A network gateway connects the device via another network and maybe over the Internet. Be careful of security problems. Consult your network administrator for correct settings.			
K-Config Example			
Set the gateway IP address to 192.168.0.1: "#NET-GATE 192.168.000.001", 0x0D			

NET-IP

Functions		Permission	Transparency
Set:	NET-IP	Administrator	Public
Get:	NET-IP?	End User	Public
Description		Syntax	
Set:	Set IP address	# NET-IP [SP] <i>ip_address</i> [CR]	
Get:	Get IP address	# NET-IP? [CR]	
Response			
~nn@ NET-IP [SP] <i>ip_address</i> [CR LF]			
Parameters			
<i>ip_address</i> – IP address, in the following format: xxx.xxx.xxx.xxx			
Response Triggers			
Notes			
Consult your network administrator for correct settings			
K-Config Example			
Set the IP address to 192.168.1.39: `#NET-IP 192.168.001.039",0x0D`			

NET-MASK

Functions		Permission	Transparency
Set:	NET-MASK	Administrator	Public
Get:	NET-MASK?	End User	Public
Description		Syntax	
Set:	Set subnet mask	# NET-MASK [SP] <i>net_mask</i> [CR]	
Get:	Get subnet mask	# NET-MASK? [CR]	
Response			
~nn@ NET-MASK [SP] <i>net_mask</i> [CR LF]			
Parameters			
<i>net_mask</i> – Format: xxx.xxx.xxx.xxx			
Response Triggers			
The subnet mask limits the Ethernet connection within the local network For proper settings consult your network administrator			
Notes			
K-Config Example			
Set the subnet mask to 255.255.0.0: `#NET-MASK 255.255.000.000",0x0D`			

EDID Handling Commands

Additional EDID data functions can be performed via the **VS-611DT** web pages or a compatible EDID management application, such as Kramer EDID Designer (see

www.kramerav.com/product/EDID%20Designer).

Command	Description	Type	Permission
CPEDID	Copy EDID data from the output to the input EEPROM	EDID Handling	End User

CPEDID

Functions	Permission	Transparency
Set: CPEDID	End User	Public
Get: -	-	-
Description	Syntax	
Set: Copy EDID data from the output to the input EEPROM	#CPEDID[SP]src_type,src_id,dst_type,dest_bitmap[CR]	
Get: -	-	
Response		
~nn@CPEDID[SP]src_type,src_id,dst_type,dest_bitmap[CR LF]		
Parameters		
<p>src_type – EDID source type (usually output): 0 (input), 1 (output), 2 (default EDID)</p> <p>src_id – for input source: 1 (Input 1), 2 (Input 2), 3 (Input 3), 4 (Input 4), 5 (Input 5), 6 (Input 6), for output source: 1 (HDBT Out), for default EDID source: 0 (default EDID)</p> <p>dst_type – EDID destination type (usually input): 0 (input), 1 (output), 2 (default EDID)</p> <p>dest_bitmap – bitmap representing destination IDs. Format: xxxx...x, where x is hex digit. The binary form of every hex digit represents corresponding destinations. Setting '1' indicates that EDID data is copied to this destination. Setting '0' indicates that EDID data is not copied to this destination.</p>		
Response Triggers		
Response is sent to the com port from which the Set was received (before execution)		
Notes		
<p>Destination bitmap size depends on device properties (for 64 inputs it is a 64-bit word)</p> <p>Example: bitmap 0x0013 means inputs 1, 2 and 5 are loaded with the new EDID.</p> <p>In this device, if the destination type is input (0), the bitmap size is 6 bits, for example bitmap 0x5 means inputs 1 and 3 are loaded with the new EDID.</p>		
K-Config Example		
<p>Copy the EDID data from the HDBT Out output (EDID source) to the HDMI In 1 input:</p> <pre>"#CPEDID 1,1,0,0x1",0x0D</pre> <p>Copy the EDID data from the default EDID source to HDMI In 1 and HDMI 4 In inputs:</p> <pre>"#CPEDID 2,0,0,0x5",0x0D</pre>		

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. Kramer fiber optic cables, adapter-size fiber optic extenders, pluggable optical modules, active cables, cable retractors, ring mounted adapters, portable power chargers, Kramer speakers, and Kramer touch panels are covered by a standard one (1) year warranty. Kramer 7-inch touch panels purchased on or after April 1st, 2020 are covered by a standard two (2) year warranty.
3. 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 lifetime 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 or 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. If a direct or similar replacement product is supplied, the original product's end warranty date remains unchanged and is transferred to the replacement 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 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

TO THE MAXIMUM EXTENT PERMITTED BY LAW, THIS LIMITED WARRANTY AND THE REMEDIES SET FORTH ABOVE ARE EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, REMEDIES AND CONDITIONS, WHETHER ORAL OR WRITTEN, EXPRESS OR IMPLIED. TO THE MAXIMUM EXTENT PERMITTED BY LAW, KRAMER ELECTRONICS SPECIFICALLY DISCLAIMS ANY AND ALL IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. IF KRAMER ELECTRONICS CANNOT LAWFULLY DISCLAIM OR EXCLUDE IMPLIED WARRANTIES UNDER APPLICABLE LAW, THEN ALL IMPLIED WARRANTIES COVERING THIS PRODUCT, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, SHALL APPLY TO THIS PRODUCT AS PROVIDED UNDER APPLICABLE LAW. IF ANY PRODUCT TO WHICH THIS LIMITED WARRANTY APPLIES IS A "CONSUMER PRODUCT" UNDER THE MAGNUSON-MOSS WARRANTY ACT (15 U.S.C.A. §2301, ET SEQ.) OR OTHER APPLICABLE LAW, THE FOREGOING DISCLAIMER OF IMPLIED WARRANTIES SHALL NOT APPLY TO YOU, AND ALL IMPLIED WARRANTIES ON THIS PRODUCT, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR THE PARTICULAR PURPOSE, SHALL APPLY AS PROVIDED UNDER APPLICABLE LAW.

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 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.



HDMI™
HIGH-DEFINITION MULTIMEDIA INTERFACE



P/N: 2900-300464

Rev: 4



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 website where updates to this user manual may be found.

We welcome your questions, comments, and feedback.

The terms HDMI, HDMI High-Definition Multimedia Interface, and the HDMI Logo are trademarks or registered trademarks of HDMI Licensing Administrator, Inc. All brand names, product names, and trademarks are the property of their respective owners.