KRAMER

USER MANUAL

VS-611DT
UHD 6x1:2 Auto Switcher

VS-611DT Quick Start Guide
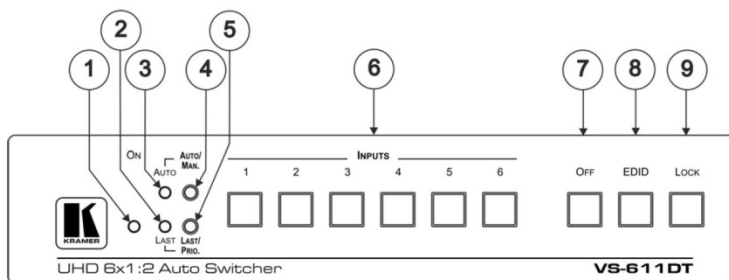
This guide helps you install and use your **VS-611DT** for the first time.

Go to **www.kramerav.com/downloads/VS-611DT** to download the latest user manual and check if firmware upgrades are available.

Step 1: Check what's in the box

☑ **VS-611DT** UHD 6x1:2 Auto Switcher

☑ 1 Power supply (12V DC)

☑ 4 Rubber feet

☑ 1 Quick start guide

Step 2: Get to know your VS-611DT

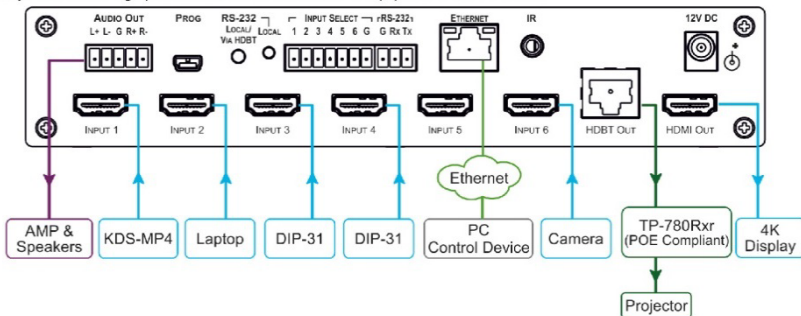| #	Feature	Function
1	ON LED	Lights when the unit is powered on
2	LAST LED	Lights when last connect is active
3	AUTO LED	Lights when auto switching is active
4	AUTO/MAN. Button	Press to select between auto-switching or manual switching mode
5	LAST/PRIO. Button	Press to select between last connected mode or priority switching mode
6	INPUT Buttons (1-6)	Press to select an HDMI source to route to the output
7	OFF Button	Press to mute the output
8	EDID Button	Press to capture the EDID
9	LOCK Button	Press and hold to toggle locking and unlocking the front panel buttons
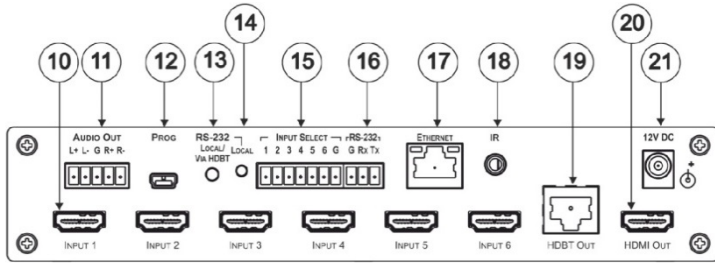
#	Feature	Function
10	INPUT HDMI Connectors (1-6)	Connect to up to 6 HDMI sources
11	AUDIO OUT Terminal Block	Connects to a balanced stereo audio acceptor
12	PROG USB C Connector	Used for upgrading firmware
13	RS-232 LOCAL/VIA HDBT Button	Press to select between a local RS-232 source, or RS-232 over HDBT
14	RS-232 LOCAL LED	Lights when local RS-232 is active
15	INPUT SELECT Contact Closure Terminal Block	Connects to external contact closure input switches
16	RS-232 Terminal Block	Connects to a local RS-232 source
17	ETHERNET RJ-45 Connector	Connects to a network for control
18	IR 3.5mm Mini Jack	Connects to an HDBT IR transmitter/receiver
19	HDBT OUT RJ-45 Connector	Connects to an HDBT TP line
20	HDMI OUT Connector	Connects to an HDMI acceptor
21	12V DC Connector	Connects to a power supply for the unit

Step 3: Install the VS-611DT

Attach the rubber feet and place on a table or mount the **VS-611DT** in a rack (using an optional **RK-1** rack mount).

Step 4: Connect the inputs and outputs

Always switch OFF the power on each device before connecting it to your **VS-611DT**. For best results, we recommend that you always use Kramer high-performance cables to connect AV equipment to the **VS-611DT**.

Step 5: Connect the power

Connect the 12V DC power adapter power cord to the VS-611DT and plug it into the mains electricity.

Step 6: Configure the VS-611DT

Capture the EDID:

1. Press the EDID button to cycle through the EDID sources. The EDID source is indicated by the number of times all the front panel LEDs flash:

   1 flash – EDID captured to all ports from HDMI.

   2 flashes – EDID captured to all ports from HDBT.

   3 flashes – EDID on all ports set to default EDID.

2. Press the button of the input that receives the EDID.

3. Press and hold the EDID button for 5 seconds.

Set the switching mode:

Auto switching – press Auto.

Manual switching – release Auto.

Last connected – press Last.

Priority switching – release Last.

Step 7: Operate the VS-611DT

RS-232 and Ethernet:

RS-232	
Protocol 3000	
Baud Rate:	9600
Data Bits:	8
Stop Bits:	1
Parity:	None
Command Format	ASCII
TCP/IP Parameters	
IP Address:	192.168.1.39
Subnet mask:	255.255.000.000
Default gateway:	192.168.0.254

Web Pages
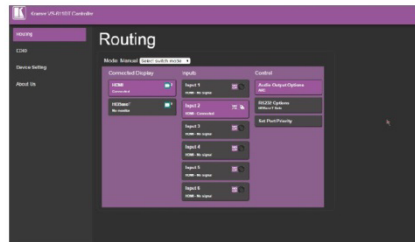
Contact Closure
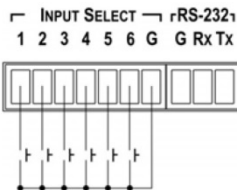
Protocol 3000

Example ROUTE command using K-Config:

Contents

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1 Introduction

Welcome to Kramer Electronics! Since 1981, Kramer Electronics has been providing a world of unique, creative, and affordable solutions to the vast range of problems that confront video, audio, presentation, and broadcasting professionals on a daily basis. In recent years, we have redesigned and upgraded most of our line, making the best even better!

Our 1,000-plus different models now appear in 14 groups that are clearly defined by function: GROUP 1: Distribution Amplifiers; GROUP 2: Switchers and Routers; GROUP 3: Control Systems; GROUP 4: Format/Standards Converters; GROUP 5: Range Extenders and Repeaters; GROUP 6: Specialty AV Products; GROUP 7: Scan Converters and Scalers; GROUP 8: Cables and Connectors; GROUP 9: Room Connectivity; GROUP 10: Accessories and Rack Adapters; GROUP 11: Sierra Video Products; GROUP 12: Digital Signage; GROUP 13: Audio; and GROUP 14: Collaboration.

Congratulations on purchasing your Kramer **VS-611DT** *UHD 6x1:2 Auto Switcher*, which is ideal for the following typical applications:

- Education

- Corporate

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

2 Getting Started

We recommend that you:

- Unpack the equipment carefully and save the original box and packaging materials for possible future shipment

- Review the contents of this user manual

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

2.1 Achieving the Best Performance

To achieve the best performance:

- For optimum range and performance, use the recommended Kramer cables available at www.kramerav.com/product/VS-611DT

- Do not secure the cables in tight bundles or roll the slack into tight coils.

- Avoid interference from neighbouring electrical appliances that may adversely influence signal quality.

- Position your **VS-611DT** away from moisture, excessive sunlight and dust.

This equipment is to be used only inside a building. It may only be connected to other equipment that is installed inside a building.

2.2 Safety Instructions

Caution: There are no operator serviceable parts inside the unit.

Warning: Use only the Kramer Electronics power supply that is provided with the unit.

Warning: Disconnect the power and unplug the unit from the wall before installing.

2.3   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/*.

3   Overview

The **VS-611DT** is a high-performance automatic switcher for HDMI video signals with resolution up to 4K@60 UHD (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 output signal is distributed to HDBaseT and HDMI (4K) outputs.

The **VS-611DT** 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

- HDMI ARC de-embedding from output to balanced stereo audio line out uncompressed

- Step-in 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)

- 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(local and through HDBaseT), Ethernet, RS-232 (local and through remote HDBaseT source with K-Link support), IR (local and through HDBaseT)

- Built-in Web server

- Support for Protocol 3000 and K-Upload

3.1 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.

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

This section defines the **VS-611DT**.
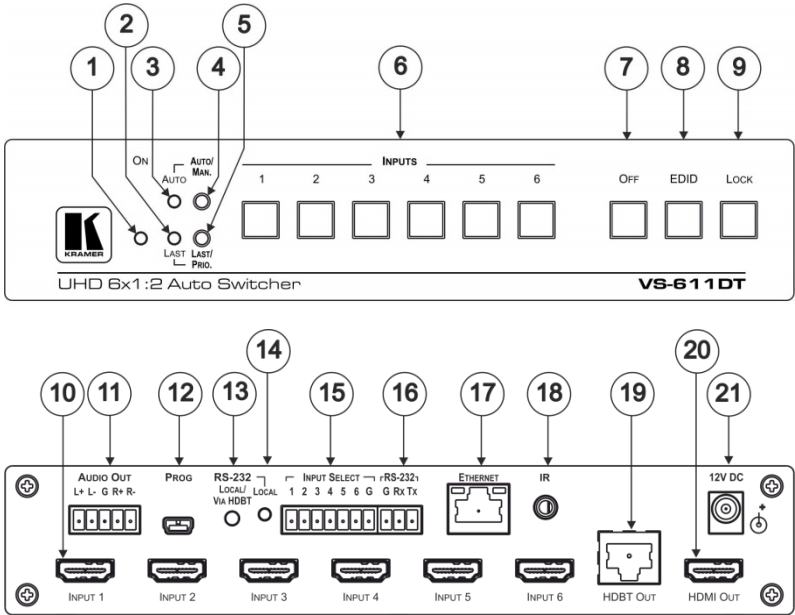
Figure 1: VS-611DT UHD 6x1:2 Auto Switcher

#	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 Section 5.1)
5	*LAST/PRIO*. Button	Press to select between last connected mode or priority switching mode (see Section 5.1)
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 Section 5.4)
8	*EDID* Button	Press to capture the EDID (see Section 5.5)
9	*LOCK* Button	Press and hold to toggle locking and unlocking the front panel buttons (see Section 5.3)
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	*PROG* USB Mini-B Connector	Used for upgrading firmware (see Section 5.10)
13	*RS-232 LOCAL/VIA HDBT* Button	Press to select between a local RS-232 source, or RS-232 over HDBT
14	*RS-232 LOCAL* LED	Lights when local RS-232 is active
15	*INPUT SELECT* Contact Closure Terminal Block	Connects to external contact closure input switches (see Section 5.13)
16	*RS-232* Terminal Block	Connects to a local RS-232 source (see Section 4.1)
17	*ETHERNET* RJ-45 Connector	Connects to a network for control
18	*IR* 3.5mm Mini Jack	Connects to an HDBT IR transmitter
19	*HDBT OUT* RJ-45 Connector	Connects to an HDBT TP line
20	*HDMI OUT* Connector	Connects to an HDMI acceptor
21	*12V DC* Connector	Connects to a power supply for the unit

4 Connecting the 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.

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

To connect the VS-611DT as illustrated in the example in Figure 2:

1. Connect up to six HDMI sources (for example, KDS-MP4(s), laptop(s), DIP-31(s)) to INPUTs 1-6 using HDMI cables.

2. 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.

3. Connect the HDMI OUT connector to an HDMI acceptor (for example, a 4K display) using an HDMI cable.

4. Connect the AUDIO OUT terminal block (line out) to a balanced audio acceptor (for example, a power amplifier with speakers) using an audio cable.

5. 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.

6. If needed, connect the INPUT SELECT terminal block to up to six contact closure switches.

7. If needed, connect an HDBT IR transmitter to the IR 3.5mm mini jack.
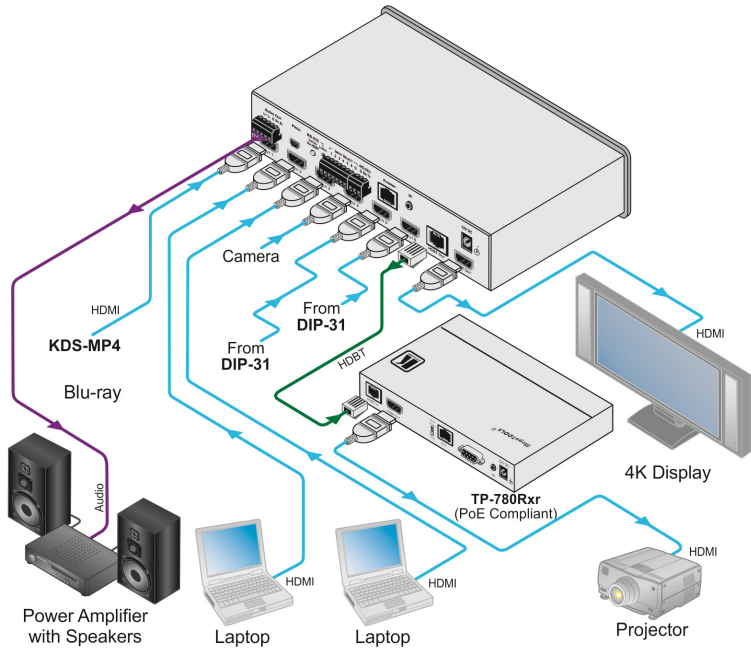
Figure 2: Connecting the VS-611DT UHD 6x1:2 Auto Switcher

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

The **VS-611DT** operates at 9600 baud rate (see all communication parameters in Section 9.1).

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.

5   Operating the VS-611DT

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

5.1   Switching – Manual and Auto

Switching can be performed automatically or manually using the device's keypad, Web pages (see Section 6.1), or control commands (see Section 10.3.2). This section describes using the keypad buttons to select Auto or Manual switch modes.

5.1.1   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

5.1.2   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.

5.1.3 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.

(i)   A step-in command is considered a manual switching command.

5.2 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.

5.3   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.

5.4   Turning the Output Off

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

5.5   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 Section 9.3).

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.

5.6   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 Section 6.3).

5.7   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.

5.8   Setting the Audio Output

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

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.

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

5.9 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 Section 6.1).

5.10 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 Section 10.

5.11 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*" (www.kramerav.com/support/download.asp?f=39700).

5.12 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 Section 6.1).

5.13 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 Section 5.1.1). 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 Figure 3 illustrates.

(!) **Do not** connect more than one input pin to the G pin at the same time.
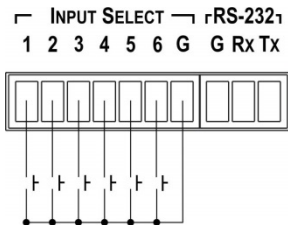
Figure 3: Connecting the Contact Closure Remote Control Pins

6 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.

6.1 Routing Inputs to Outputs

- On the left side, click the Routing tab.
  The Routing window opens:
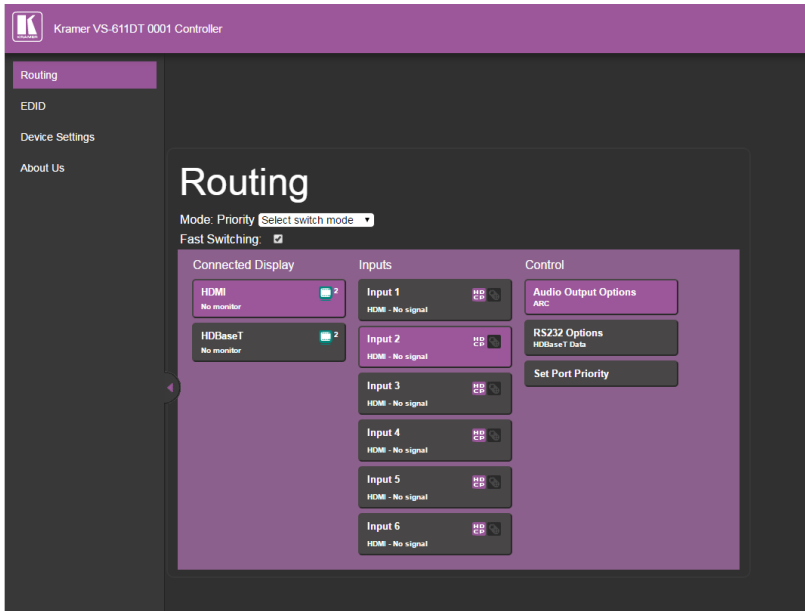
Feature	Function
Mode Dropdown	Click to select *Manual*, *Priority* or *Last*
Fast Switching Checkbox	Click to select/de-select fast switching
Connected Display	Click to select *HDMI* or *HDBaseT* Click small insert box to mute/un-mute video
Inputs (1 through 6)	Click to select *Input 1* through *Input 6* Click HDCP insert box to select/de-select HDCP Click Remote insert box to set remote device settings
Control – Audio Output Options	Click to select *Input HDMI Audio* or *ARC*
Control – RS-232 Options	Click to select *Local RS-232* or *HDBaseT Data*
Set Port Priority	Click to open the priority selector. Click the *Set* 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.
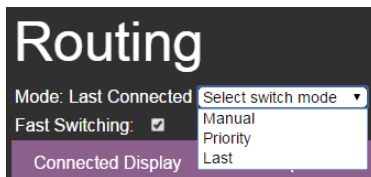
To set port priority:

1. Click **Set Port Priority**.

   The Set Port Priority window opens.
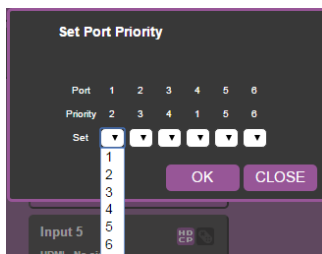
2. Click the **Set** dropdown for the desired port.

3. Set a priority from 1 to 6.

4. Click **OK** to set.

6.2   Using EDID Settings

- On the left side, click the EDID tab.
  The EDID window opens:
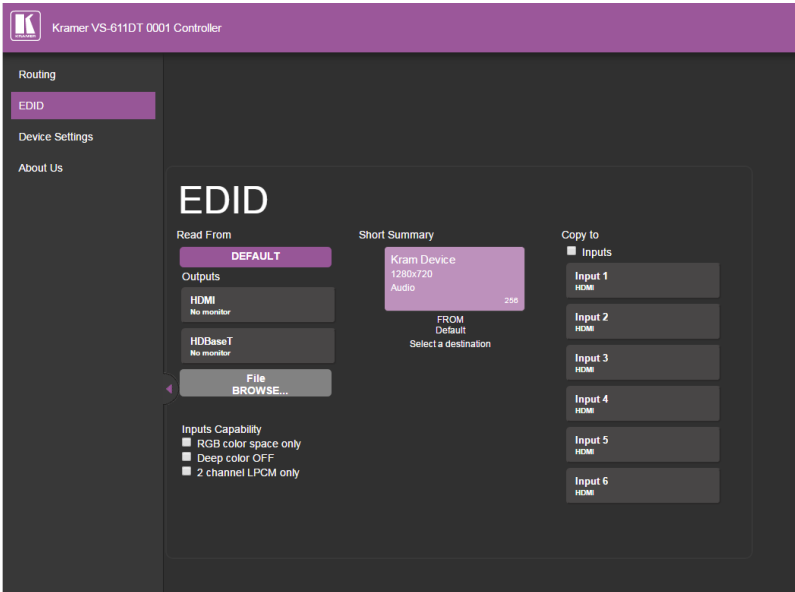
Feature	Function
Read From	Click to select the *Default EDID*, or the *Outputs* (*HDMI monitor* or *HDBaseT monitor*)
File Browse	Click to open a window that allows you to browse and select an EDID saved to the computer disk
Inputs Capability	Click to select/deselect: *RGB color space only* *Deep color Off* *2-Channel LPCM only*
Short Summary	Describes the characteristics of the EDID source device
Copy To	Click the *Inputs* checkbox to select/de-select 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 check-box. 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.

EDID SUMMARY

Select a source

FROM
File: C:\fakepath\MediaID.bin
Select a destination
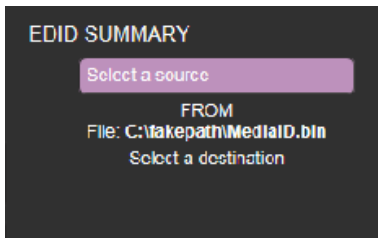
6.3   Setting Device ID Parameters

The Device Settings page enables you modify some communication parameters and view others.
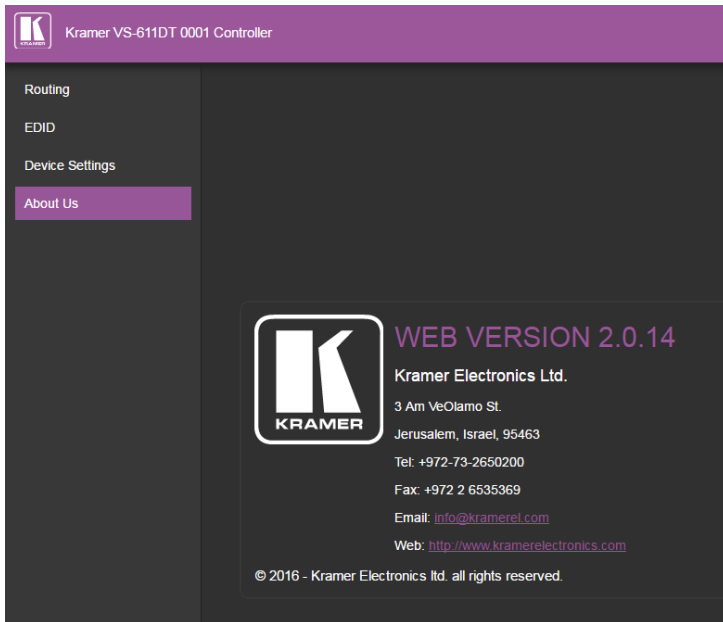
To modify serial or Ethernet communication parameters:

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.

6.4 Contacting Kramer

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

VS-611DT - Using the Web Pages

7 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
Specifications are subject to change without notice For the most updated resolution list, go to our Web site at www.kramerav.com	

8 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

VIC Number	Resolution
41	1280x720p @100Hz
42	720x576p @100Hz
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

9 Default Settings

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

9.1 Default Communication Settings

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

9.2 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
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)

9.3   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.............. "1920x1080" 74.250 1920 2008 2052 2200 1080 1084 1094 1124 interlace +hsync +vsync
Detailed timing #3....... 1920x1080i at 50Hz (16:9)
Modeline.............. "1920x1080" 74.250 1920 2448 2492 2640 1080 1084 1094 1124 interlace +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,20,20,20,20,20,20,01,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,00,00,00,00,00,00,00,00,00,00,00,00,C5

VS-611DT - Default Settings

10   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:
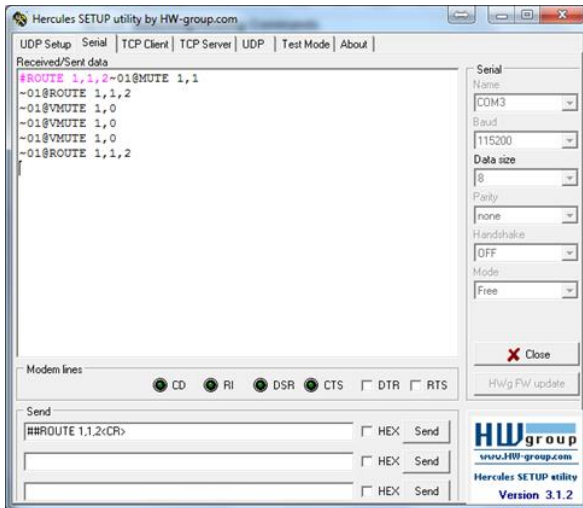
> The framing of the command varies according to the terminal
> communication software.

- K-Touch Builder (Kramer software):
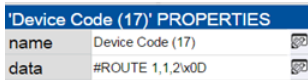
- K-Config (Kramer configuration software):

Command Syntax		Display Command as	○ Hex ○ Decimal ● ASCII
"#ROUTE 1,1,2",0x0D			Set Clear
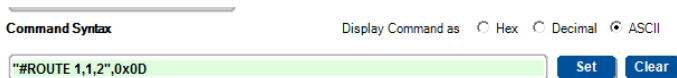
ℹ️ All the examples provided in this section are based on using the K-Config software.

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 CR press the Enter key (LF 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:

10.1   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.

ℹ️ 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.

10.2 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
#	*Device_id@*	**Message**	CR

- **Simple Command** – Command string with only one command without addressing:

Start	Body	Delimiter
#	**Command** SP *Parameter_1,Parameter_2,…*	CR

- **Command String** – Formal syntax with command concatenation and addressing:

Start	Address	Body	Delimiter
#	*Device_id@*	**Command_1** *Parameter1_1,Parameter1_2,…*| **Command_2** *Parameter2_1,Parameter2_2,…*| **Command_3** *Parameter3_1,Parameter3_2,…*|…	CR

- Device Message Format:

Start	Address (optional)	Body	Delimiter
~	*Device_id@*	**Message**	CR LF

- Device Long Response – Echoing command:

Start	Address (optional)	Body	Delimiter
~	*Device_id@*	**Command** SP **[***Param1,Param2 …***]** result	CR LF

VS-611DT - Protocol 3000

10.3 Protocol 3000 Commands

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

- System Commands (see Section 10.3.1)

- Switching/Routing Commands (see Section 10.3.2)

- Communication Commands (see Section 10.3.3)

- EDID Handling Commands (see Section 10.3.4)

10.3.1 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

10.3.1.1

Functions		Permission	Transparency
Set:	**#**	End User	Public
Get:	**-**	-	-
Description		**Syntax**	
Set:	Protocol handshaking	#CR	
Get:	-	-	
Response			
~nn@SP**OK**CR 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			

10.3.1.2   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-DATE**SP*date*SP*time*CR LF			
Parameters			
date – Format: YYYY/MM/DD where YYYY = Year, MM = Month, DD = Day *time* – Format: hh:mm:ss where hh = hours, mm = minutes, ss = seconds			
Response Triggers			
Notes			
K-Config Example			
"#BUILD-DATE?",0x0D			

10.3.1.3 FACTORY

Functions		Permission	Transparency
Set:	**FACTORY**	End User	Public
Get:	-	-	-
Description		**Syntax**	
Set:	Reset device to factory default configuration	#**FACTORY** CR	
Get:	-	-	
Response			
~ nn @**FACTORY** SP OK CR LF			
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			

10.3.1.4 HELP

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

10.3.1.5   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			

10.3.1.6   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			
inputs_count – number of inputs in the unit *outputs_count* – number of outputs in the unit			
Response Triggers			
Notes			
K-Config Example			
"#INFO-IO?",0x0D			

10.3.1.7 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*lock_mode*CR	
Get:	Get front panel lock state	Option 1: #**LOCK-FP?**CR	
Response			
Set: Option 1: ~nn@**LOCK-FP**SP*lock_mode*SP**OK**CR LF			
Get: Option 1: ~nn@**LOCK-FP**SP*lock_mode*CR LF			
Parameters			
lock_mode – 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			

10.3.1.8 MODEL

Functions		Permission	Transparency
Set:	-	-	-
Get:	**MODEL?**	End User	Public
Description		**Syntax**	
Set:	-	-	
Get:	Get device model	#**MODEL?**CR	
Response			
~nn@**MODEL**SP*model_name*CR LF			
Parameters			
model_name – 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			

10.3.1.9 NAME

Functions		Permission	Transparency
Set:	**NAME**	Administrator	Public
Get:	**NAME?**	End User	Public
Description		**Syntax**	
Set:	Set machine (DNS) name	#**NAME**␣SP␣*machine_name*␣CR	
Get:	Get machine (DNS) name	#**NAME?**␣CR	
Response			
Set: ~␣nn␣@**NAME**␣SP␣*machine_name*␣CR LF ␣ Get: ~␣nn␣@**NAME?**␣SP␣*machine_name*␣CR LF			
Parameters			
machine_name – 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			

10.3.1.10 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:*version*␣CR LF			
Parameters			
Version – XX.XX where X is a decimal digit			
Response Triggers			
Notes			
K-Config Example			
"#PROT-VER?",0x0D			

10.3.1.11 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			

10.3.1.12 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			

10.3.1.13 SN

Functions		Permission	Transparency
Set:	**-**	-	-
Get:	**SN?**	End User	Public
Description		**Syntax**	
Set:	-	-	
Get:	Get device serial number	`#SN?`CR	
Response			
~nn@**SN**SP*serial_number*CR 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			

10.3.1.14 VERSION

Functions		Permission	Transparency
Set:	**-**	-	-
Get:	**VERSION?**	End User	Public
Description		**Syntax**	
Set:	-	-	
Get:	Get firmware version number	`#VERSION?`CR	
Response			
~nn@**VERSION**SP*firmware_version*CR LF			
Parameters			
firmware_version – XX.XX.XXXX where the digit groups are: major.minor.build version			
Response Triggers			
Notes			
K-Config Example			
"#VERSION?",0x0D			

10.3.2 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

10.3.2.1 DISPLAY

Functions		Permission	Transparency
Set:	-	-	-
Get:	**DISPLAY?**	End User	Public
Description		Syntax	
Set:	-	-	
Get:	Get output HPD status	#**DISPLAY?**SP*out_id*CR	

Response

~nn@**DISPLAY**SP*out_id,status*CR LF

Parameters

out_id – 1 (HDBT Out), 2 (HDMI Out)
status – 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

10.3.2.2 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
in – Input number: `0` (disconnect output), `1` (Input 1), `2` (Input 2), `3` (Input 3), `4` (Input 4), `5` (Input 5), `6` (Input 6) `>` – Connection character between in and out parameters *out* – 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]
Chaining multiple commands	`#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]

10.3.2.3 ROUTE

Functions		Permission	Transparency
Set:	`ROUTE`	End User	Public
Get:	`ROUTE?`	End User	Public
Description		**Syntax**	
Set:	Set layer routing	`#ROUTE`SP`layer,dest,src`CR	
Get:	Get layer routing	`#ROUTE?`SP`layer,dest`CR	
Response			
~nn@**ROUTE**SP`layer,dest,src`CR LF			
Parameters			
`layer` – 1 (video) `dest` – 1 (HDMI Out), 2 (HDBT Out) `src` – 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			

10.3.3 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

10.3.3.1 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*portType,ETHPort*CR	
Get:	Get Ethernet port protocol	#**ETH-PORT?**SP*portType*CR	
Response			
~nn@**ETH-PORT**SP*portType,ETHPort*CR LF			
Parameters			
portType – String of 3 letters indicating the port type: TCP, UDP *ETHPort* – 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			

10.3.3.2 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			
mode – `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			

10.3.3.3 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			
ip_address – 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			

10.3.3.4 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*ip_address*CR	
Get:	Get IP address	`#NET-IP?`CR	
Response			
~nn@**NET-IP**SP*ip_address*CR LF			
Parameters			
ip_address – 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			

10.3.3.5 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*net_mask*CR	
Get:	Get subnet mask	`#NET-MASK?`CR	
Response			
~nn@**NET-MASK**SP*net_mask*CR LF			
Parameters			
net_mask – 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			

VS-611DT - Protocol 3000

10.3.4 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

10.3.4.1 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
src_type – EDID source type (usually output): 0 (input), 1 (output), 2 (default EDID)
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)
dst_type – EDID destination type (usually input): 0 (input), 1 (output), 2 (default EDID)
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.

Response Triggers
Response is sent to the com port from which the Set was received (before execution)

Notes
Destination bitmap size depends on device properties (for 64 inputs it is a 64-bit word)
Example: bitmap 0x0013 means inputs 1, 2 and 5 are loaded with the new EDID.
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.

K-Config Example
Copy the EDID data from the HDBT Out output (EDID source) to the HDMI In 1 input:
"#CPEDID 1,1,0,0x1",0x0D
Copy the EDID data from the default EDID source to HDMI In 1 and HDMI 4 In inputs:
"#CPEDID 2,0,0,0x5",0x0D

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⚠ **SAFETY WARNING**
Disconnect the unit from the power supply before opening and servicing

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