

USER MANUAL

MODEL:

VS-34FD

**Modular Matrix Switcher with I/O Flexible
Module Slots**



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Introduction

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

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-34FD 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-34FD** away from moisture, excessive sunlight and dust.

Safety Instructions



Caution:

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



Warning:

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

Recycling Kramer Products

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

Overview

Congratulations on purchasing your Kramer **VS-34FD Modular Matrix Switcher** with I/O Flexible Module Slots.

VS-34FD is a high performance, 34-port, 8K-ready, multi-format, modular matrix switcher for AV signals. The modular chassis features 17 module card slots for installing a full range of signal formats. All slots support both input and output module cards, enabling the matrix to be populated as 2x32, 32x2 or any other configuration in between in increments of two inputs or two outputs. The chassis includes a control module, a test module that can monitor and test any input and output in the matrix, and an additional redundant power supply for optional installation.

Benefits and Features

- High-Performance Modular Matrix Switcher – Professional, 8K-ready matrix for switching multi-format AV signals. Features Kramer Equalization & re-Klocking™ Technology that rebuilds the digital signal to travel longer distances.



For optimum range and performance, use recommended Kramer cables.

- Modular & Fully Flexible Platform – Select from a full array of popular and legacy formats to populate the chassis, including HDMI™, HDBaseT, fiber optic, VGA, SDI, as well as analog and digital audio. All slots support both input and output slots, enabling the matrix to be populated as 2 x 32, 32 x 2 or any configuration in between. This matrix is compatible with existing modular matrix modules.
- Flexible Infrastructure Conversion – Kramer Core™ technology enables copper, fiber or twisted pair to be used at the same time, according to input/output module selection. The matrix receives signals from compatible Kramer transmitters, automatically converts between available infrastructure options and sends the signals to compatible Kramer receivers.
- Quick and Efficient Management – Compatible with Kramer Network enterprise management platform providing: Automatic discovery through the network, FW upgrade management for matrix and cards, identification of card type and location, indication of card status (module ID, actual firmware versions), matrix switching, specific card features configuration (for example, volume levels on audio cards), store and recall of predefined switching scenarios, integrated Maestro automation, and more.

- Content Protection Support – HDCP 2.2 compliant, with compatible HDMI, HDBaseT, fiber optic, VGA, and SDI modules. Supports disabling HDCP when needed.
- Fast Switching Support on Outputs – Reduces or removes switching delay.
- EDID Management – Individual EDID management per input. Captures and stores the EDID from a display device.
- Second Power Supply – Redundant, hot-swappable for optional installation.
- Flexible Control Options – Local control from the front panel, including switching, executing multiple switches simultaneously, storage and recall of multiple switching configurations, front panel lockout. Distance control with user-friendly web GUI via Ethernet and Protocol 3000 API via Ethernet or RS-232.
- Modular Cooling System – 2 easily replaceable, low-noise, hot-swappable fan racks.
- Cost-Effective Maintenance – Power LEDs and LCD display facilitate easy local maintenance and troubleshooting. Local FW upgrade via mini USB port and reset button for convenient unit reset ensure lasting, field-proven deployment.
- Easy Installation – 19” enclosure for rack mounting in a 3U rack space with included rack ears and universal 100-240V AC power supply.

Typical Applications

VS-34FD is ideal for the following typical applications:

- Professional display systems requiring video signal routing.
- Broadcast, presentation, and production facilities, as well as monitoring in large duplication systems.
- Rental/staging applications.

Defining VS-34FD Modular Matrix Switcher

This section defines VS-34FD.

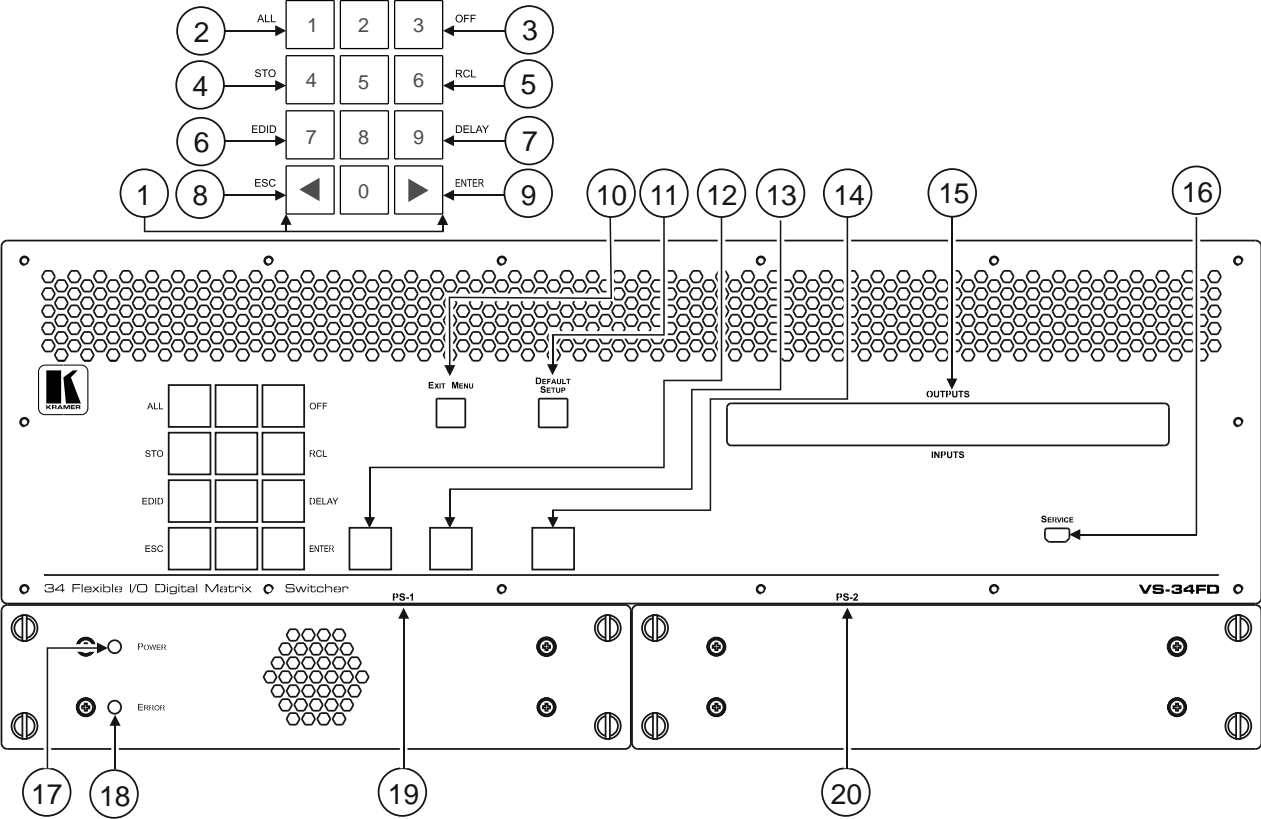


Figure 1: VS-34FD Modular Matrix Switcher Front Panel

#	Feature	Function
①	Numeric Keypad (When not in menu mode, these buttons are for numeric input.)	Press 1 to 0 to enter port numbers for routing or to enter values for navigating the LCD menu.
		Press ◀ (backward) to shift the LCD display to the right (the LCD display only shows 13 of the available matrix combinations).
		Press ▶ (forward) to shift the LCD display to the left (the LCD display only shows 13 of the available matrix combinations).
②	Menu Function Buttons (After pressing the MENU button four times, these buttons light and are enabled.)	ALL Press to switch an input to all outputs (see Switching an Input to All Outputs – Front Panel on page 16).
③		OFF Press to turn off an output.
④		STO Press to store the current setup in a preset.
⑤		RCL Press to recall a preset.
⑥		EDID Press to copy an EDID from any input or output to any input (see Copying EDID – Front Panel on page 17).
⑦	DELAY Press to set the delay between confirming an action and the execution of the action.	
⑧	ESC Button	Press to exit the current menu operation.
⑨	ENTER Button	Press to complete the input-output setup when using a one-digit number instead of two digits. For example, to enter input 5, you can press either 05 or 5, ENTER. Press to enter the options in a setup menu.

#	Feature	Function
⑩	EXIT MENU Button	Press to exit a menu or return to switching mode.
⑪	DEFAULT SETUP Button	Press to open the reset menu on the display.
⑫	TAKE Button	When flashing, press to confirm actions.
⑬	MENU Button	Press once to enable the ALL, OFF, STO and RCL buttons. Press again to enter the configuration menu. When in a menu, press to cycle through the menu items.
⑭	LOCK Button	Press and hold for approximately 2 sec to lock/unlock the front panel buttons.
⑮	OUTPUTS/INPUTS LCD Display	Displays the outputs (upper row) switched to the selected inputs (lower row). Displays user interface messages and menus.
⑯	SERVICE Mini USB Connector	Use for controlling the matrix switcher and for firmware upgrade (see Upgrading VS-34FD Firmware on page 32).
⑰	POWER LED	Lights yellow when the power supply is active and the device is powered on.
⑱	ERROR LED	Lights red when an error is detected. Briefly lights red immediately following a power disruption (e.g., cable disconnection, power off, and so on).
⑲	PS-1 Power Module	Supplies power to the device.
⑳	PS-2 Power Module	Supplies power to the device.

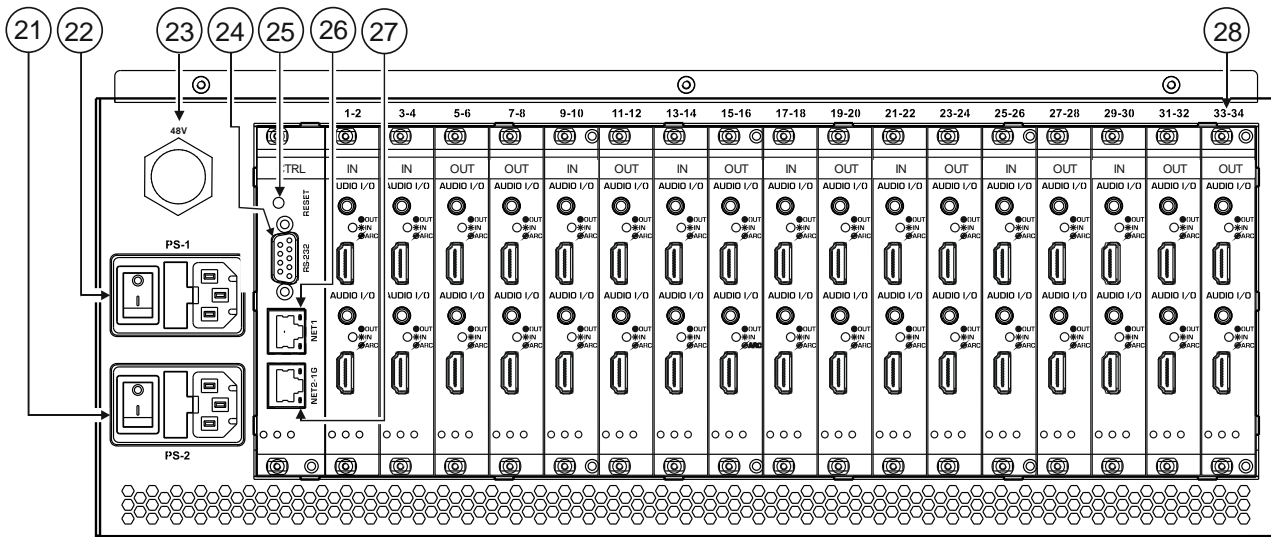








Figure 2: VS-34FD Modular Matrix Switcher Back Panel

#	Feature	Function
21	PS-2 Power Module and Switch	Connect to the mains power supply (for the PS-1 power module) and use switch to power the unit.
22	PS-1 Power Module and Switch	Connect to the mains power supply (for the PS-2 power Module) and use switch to power the unit.
	 You can connect PS-1 and/or PS-2. If one of them fails to operate, the other can power the unit.	
23	48V DC Harness Connector	Connect to the PS-4812 PoE power supply add-on.
24	RS-232 9-pin D-sub Port	Connect to the remote operation PC or a controller.
25	RESET Recessed Button	Press to reboot the VS-34FD control card.
26	NET 1 RJ-45 Connector	Connect to a PC or controller via the Ethernet LAN (100Mb).
27	NET 2-1G RJ-45 Connector	Connect to a PC or controller via the Ethernet LAN (100/1000Mb).
28	IN/OUT Connector Cards (2x17)	<p>Insert an input or output card and connect sources/acceptors to the HDMI™ and/or AUDIO 3.5mm mini jacks to create a flexible matrix switcher (ranging from 2x32 to 32x2).</p> <ul style="list-style-type: none">  Different card types are available.  Each port in a card operates independently.  Card slots support hot-plug connection, so the device immediately identifies a card as IN or OUT.  AUDIO 3.5mm mini jacks can be set as inputs or outputs (the output is the HDMI audio embedded audio) when a source/acceptor is connected.  The port numbers are fixed. Each card has 2 ports and they are numbered accordingly (for example, in the card located under 19-20, the top port is 19 and the lower one is 20).

Mounting VS-34FD

This section provides instructions for mounting **VS-34FD**. 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-34FD** before connecting any cables or power.

**Warning:**

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

To mount the VS-34FD in a rack:

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



For more information go to www.kramerav.com/downloads/VS-34FD

Connecting VS-34FD

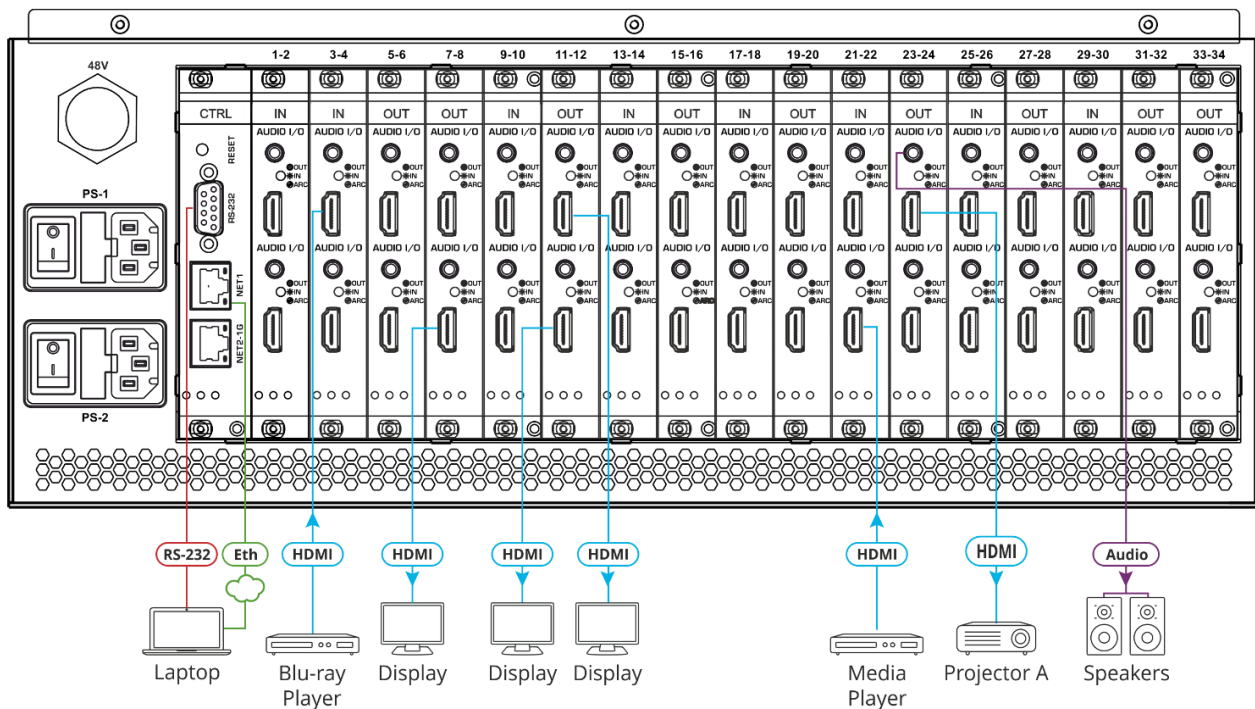


Figure 3: Connecting to the VS-34FD Rear Panel

i For optimum range and performance use the recommended Kramer cables available at www.kramerav.com/product/VS-34FD.

Using third-party cables may cause damage!

i The configuration of HDMI input/output cards shown in (Figure 3) is merely a sample representation and different input / output cards may be mixed as required. For card installation instructions, see [Input / Output Card Hardware Installation Instructions](#) on page 31.

To connect the VS-34FD as illustrated in the example in Figure 3:

1. Insert the input and output cards into the card slots (29).
2. Connect 32 video sources (for example, a Blu-ray player and media player) and 2 video acceptors, (for example, a video display and a projector), 2 video sources and 2 video acceptors, or any configuration in between.
3. If required, connect a PC or remote controller to the RS-232 port (see [Connecting to VS-34FD via RS-232](#) on page 10) and/or the Ethernet port (see [Connecting to VS-34FD via Ethernet](#) on page 10).
4. Connect the power cord.
5. If necessary, review and set the system configuration using the Menu (see [Using the Configuration Menus](#) on page 24).

Port Numbering

All cards have two physical ports. Numbering of ports is sequential from top to bottom and left to right.

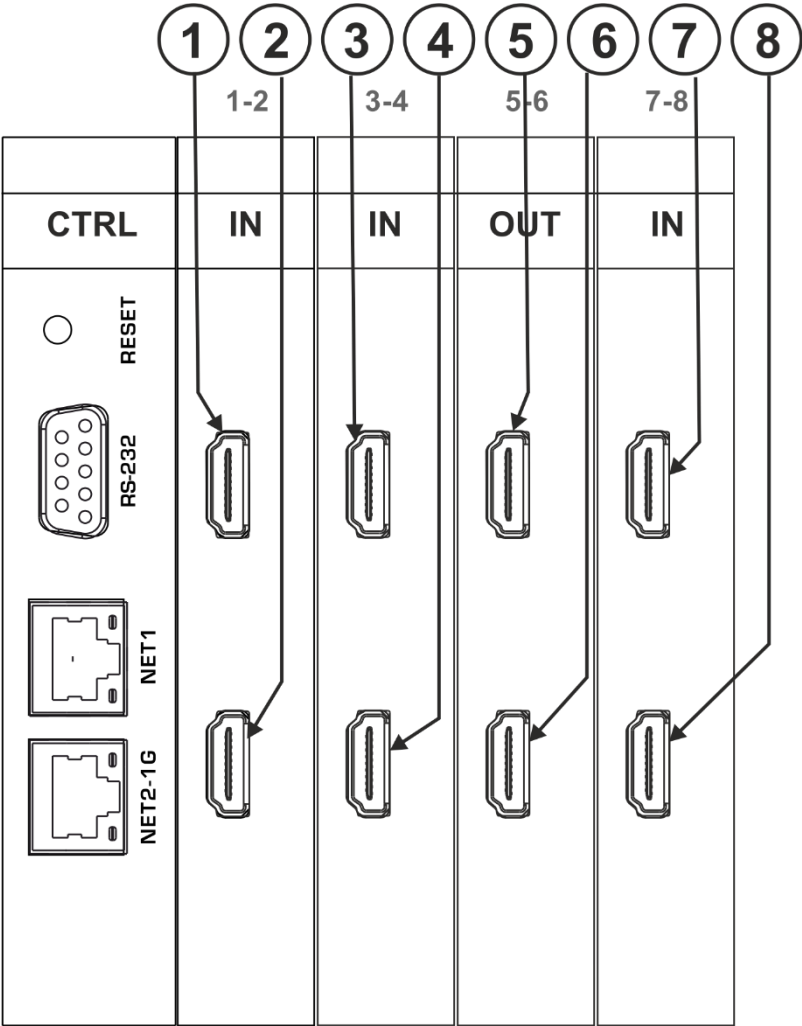


Figure 4: Sample Port Numbering

Diagram #	Actual Port Number
1	IN 1
2	IN 2
3	IN 3
4	IN 4
5	OUT 5
6	OUT 6
7	IN 7
8	IN 8

Connecting to VS-34FD via RS-232

You can connect to the **VS-34FD** via an RS-232 connection using, for example, a PC. Note that a null-modem adapter/connection is not required.

To connect to the VS-34FD via RS-232:

- Connect the RS-232 9-pin D-sub Port (24) on the **VS-34FD** unit via a 9-wire straight cable (only pin 2 to pin 2, pin 3 to pin 3, and pin 5 to pin 5 need to be connected) to the RS-232 9-pin D-sub port on your PC.

Connecting to VS-34FD via USB (VCOM)

The device's SERVICE Mini USB Connector (16) can work as a virtual COM (VCOM) port. Verify that the USB port on the PC that connects to **VS-34FD** is configured as a VCOM port. You may need to install a driver to do this. You can use a tool such as Hercules or K-Config to use Protocol 3000 commands over USB (see [Protocol 3000](#) on page 48). You can also use K-Upload to upgrade firmware over USB (see [Upgrading Firmware – K-Upload](#) on page 32).

Connecting to VS-34FD via Ethernet

You can connect to **VS-34FD** via Ethernet using either of the following methods:

- Directly to the PC using a crossover cable (see [Connecting Ethernet Port Directly to a PC](#) on page 10).
- Via a network hub, switch, or router, using a straight-through cable (see [Connecting Ethernet Port via a Network Hub or Switch](#) on page 12).



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

Connecting Ethernet Port Directly to a PC

You can connect the Ethernet port of **VS-34FD** directly to the Ethernet port on your PC using a crossover cable with RJ-45 connectors.



This type of connection is recommended for identifying the **VS-34FD** with the factory configured default IP address.

After connecting **VS-34FD** to the Ethernet port, configure your PC as follows:

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

The Local Area Connection Properties window for the selected network adapter appears as shown in [Figure 5](#).

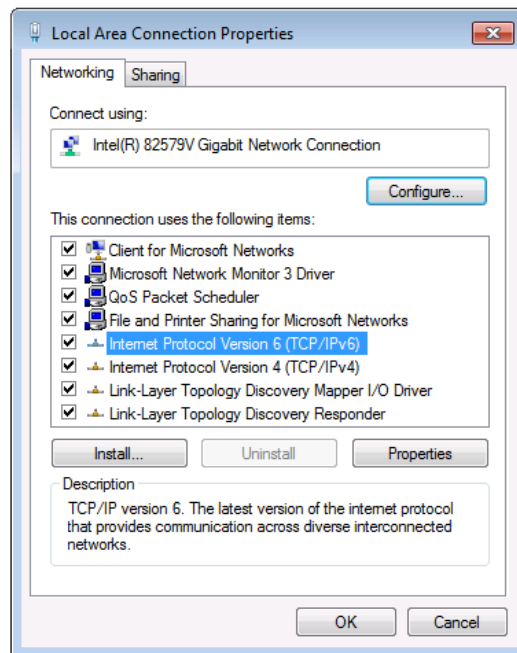


Figure 5: Local Area Connection Properties Window

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

The Internet Protocol Properties window relevant to your IT system appears as shown in [Figure 6](#) or [Figure 7](#).

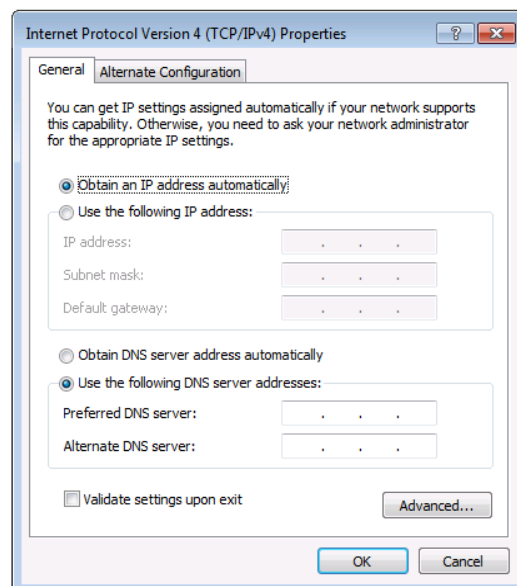


Figure 6: Internet Protocol Version 4 Properties Window

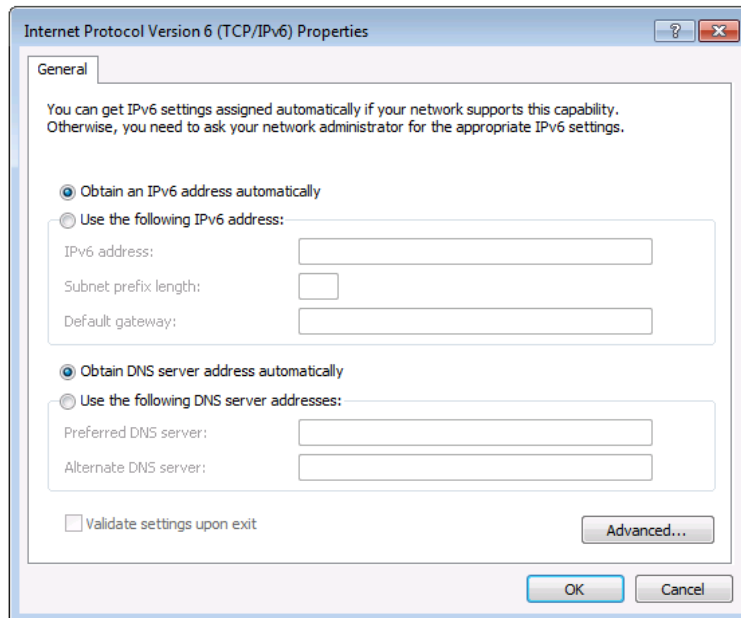


Figure 7: Internet Protocol Version 6 Properties Window

6. Select **Use the following IP Address** for static IP addressing and fill in the details as shown in [Figure 8](#).
For TCP/IPv4 you can use any IP address in the range 192.168.1.1 to 192.168.1.255 (excluding 192.168.1.39) that is provided by your IT department.

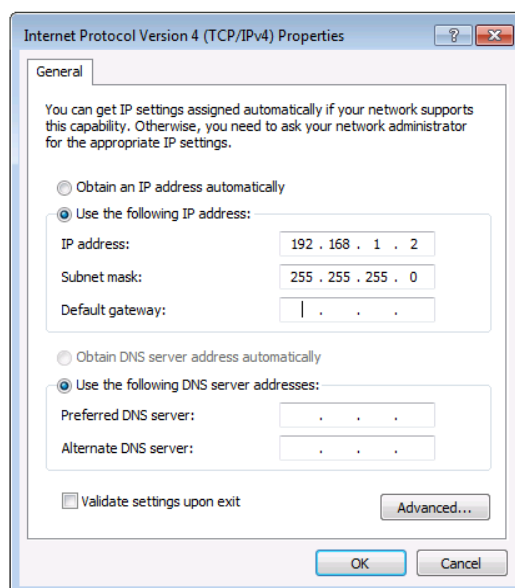


Figure 8: Internet Protocol Properties Window

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

Connecting Ethernet Port via a Network Hub or Switch

You can connect the Ethernet port of VS-34FD to the Ethernet port on a network hub or using a straight-through cable with RJ-45 connectors.

Operating and Controlling – Front Panel

VS-34FD enables you to operate and control your matrix from the front panel buttons.



You can also operate and control **VS-34FD** via Protocol 3000 commands (see [Protocol 3000 Commands](#) on page 49) and via the embedded web pages (see [Operating and Controlling – Embedded Web Pages](#) on page 19).

VS-34FD enables you to do the following:

- [Starting Up](#) on page 13.
- [Switching – Front Panel](#) on page 14.
- [Locking Front Panel Buttons](#) on page 17.
- [Copying EDID – Front Panel](#) on page 17.
- [Restarting – Front Panel](#) on page 18.
- [Performing Factory Reset – Front Panel](#) on page 18.
- [Viewing Device Information – Front Panel](#) on page 18.

Starting Up

To start up VS-34FD:

1. Turn on the power switch.

The LCD display shows a series of screens as **VS-34FD** is booting up and then it displays the last video input/output routing setup that was used.

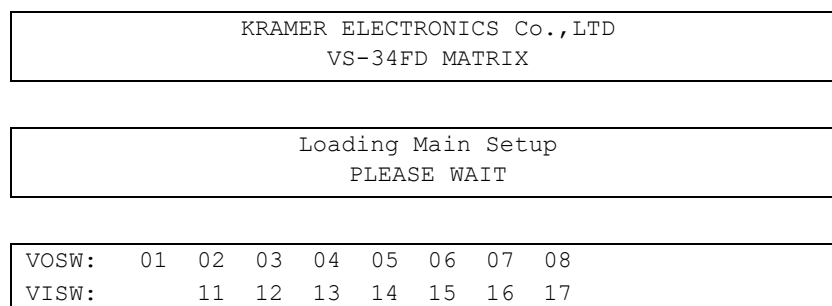


Figure 9: Default Startup Status Display Sequence



An output with no corresponding input shown under it indicates that this output is not routed to any input.

2. Press the MENU Button (13) twice to see the last audio input/output routing setup that was used.
3. If there are more than 13 input/outputs in the matrix, press the ◀ (backward) and ▶ (forward) Buttons (1) to shift the LCD display to the right or left.

Changing Action Confirmation Mode

VS-34FD enables you to configure whether an action needs to be confirmed before the system executes it. By default, switching is executed in At Once mode, in which actions are implemented immediately upon pressing the relevant buttons. In Confirm mode, after pressing the relevant buttons, the TAKE Button flashes, and the action are not implemented until you press the TAKE Button.



At Once mode is the default for all actions except storing and recalling presets, where the default is Confirm mode.



Failure to press the TAKE Button within a few seconds results in the action timing out.

To change the action confirmation mode:

- Press the TAKE Button (12).

The action confirmation mode changes.



If the TAKE Button is flashing, you cannot change the confirmation mode.

Switching – Front Panel

VS-34FD enables you to switch inputs to outputs using the Numeric Keypad (1).

The following rules apply when using the Numeric Keypad:

- When entering a single digit number (for example 5), you can either press 0 followed by 5, or 5 followed by the ENTER Button (9).
- Pressing 00 (or 0, ENT) is only relevant for an input and is used to disconnect the currently entered output number from the input.
- The ESC Button (8) is used to cancel an operation without affecting the current status. For example, if you enter an incorrect number by mistake, press the ESC Button (8) to cancel the operation.
- At any stage, if no button is pressed within approximately 15 seconds, the automatic timeout causes **VS-34FD** to exit the operation and revert to the output/input display.

VS-34FD enables you to do the following:

- [Switching Video – Front Panel](#) on page 15.
- [Switching Audio – Front Panel](#) on page 15.
- [Switching an Input to All Outputs – Front Panel](#) on page 16.
- [Turning Off Outputs – Front Panel](#) on page 16.
- [Storing and Recalling Presets – Front Panel](#) on page 16.
- [Delaying Switching Actions](#) on page 17.

Switching Video – Front Panel

VS-34FD enables you to switch the video signal from inputs to outputs using the front panel buttons.



Press the MENU Button (13) once to display all available input and output ports for switching video.

To switch video using the front panel buttons:

1. On the Numeric Keypad (1), press the number of the desired output.

The in/out routing appears on the right side of the LCD display with the input blank.

VOSW:	01	02	03	04	05	06	07	08	
VISW:		11	12	13	14	15	16	17	IN__=>OUT01

Figure 10: Video Output Entered

2. Press the number of the desired input.

The input is displayed and the video is switched.

VOSW:	01	02	03	04	05	06	07	08	
VISW:		11	12	13	14	15	16	17	IN16=>OUT01

Figure 11: Video Input Entered

Switching Audio – Front Panel

VS-34FD enables you to switch the audio from inputs to outputs using the front panel buttons.



Press the MENU Button (13) three times to display all available input and output ports for switching audio.

To switch audio using the front panel buttons:

1. Press the MENU Button (13) twice.

The current audio switching setup is displayed on the LCD display.

AOSW:	01	02	03	04	05	06	07	08	
AISW:		13	13	13	13	13	17	17	

Figure 12: Current Audio Switching Setup

2. On the Numeric Keypad (1), press the number of the desired output.

The in/out routing appears on the right side of the LCD display with the input blank.

AOSW:	01	02	03	04	05	06	07	08	
AISW:		13	13	13	13	13	17	17	IN__=>OUT01

Figure 13: Audio Output Entered

3. Press the number of the desired input.

The input is displayed and the video is switched.

AOSW:	01	02	03	04	05	06	07	08	
AISW:		11	12	13	14	15	16	17	IN17=>OUT01

Figure 14: Audio Input Entered

Switching an Input to All Outputs – Front Panel

VS-34FD enables you to switch an input to all outputs at one time.

To switch an input to all outputs:

1. Press the MENU Button (13), four times.
The functions screen appears on the LCD display.
2. Press the ALL Button (2), and then press either the 1 button to switch video or the 2 button to switch audio.
3. Enter the desired input number.
All outputs are switched to the selected input.

Turning Off Outputs – Front Panel

Turning an output off means that there is no input switched to this output. This is indicated on the display by the Input being blank underneath the relevant Output.

To turn an output off:

1. Press the MENU Button (13), four times.
The functions screen appears on the LCD display.
2. Press OFF (3) on the numeric keypad.
The following message is displayed:
out__ => OFF
3. Enter the relevant output number.
The output is turned off.

VOSW:	01	02	03	04	05	06	07	08
VISW:		11	12	13	14	15	16	17

Figure 15: Out 01 Off

Storing and Recalling Presets – Front Panel

VS-34FD enables you to store (save) and recall up to 60 different input/output configurations.

To store the current input/output configuration as a preset:

1. Press the MENU Button (13), four times.
The functions screen appears on the LCD display.
2. Press STO (4) and enter the preset number (1–60) under which you would like to save the configuration.
The current input/output configuration is stored.

To recall a stored preset:

1. Press the MENU Button (13), four times.
The functions screen appears on the LCD display.
2. Press RCL (5) and enter the preset number (1–60) you would like to recall.

3. Press the TAKE button (12).

The preset is recalled and the input/output configuration changes to the selected preset.

Delaying Switching Actions

VS-34FD enables you to set a delay time for an output which elapses between entering a switching action and the execution of the action. This delay can be set for each output independently. The delay is defined in units of 200ms and ranges from 0 to 15, providing delays of up to 3 seconds (15 x 200ms = 3 seconds).

To set the execution delay for an output:

1. Press the MENU Button (13), four times.
2. The functions screen appears on the LCD display.
3. Press DELAY (6).
4. Using the numeric keys, enter the output number and number of delay units.

The execution delay for the selected output is set.

Locking Front Panel Buttons

You can lock **VS-34FD** to prevent tampering with the unit or prevent the settings from being changed accidentally via the front panel buttons. When the front panel is locked, you can still remotely operate **VS-34FD** via the web pages or Protocol 3000 API commands.

To lock the front panel buttons:

- Press and hold the LOCK Button (14) until the button lights.
The front panel buttons are locked.

To unlock the front panel buttons:

- Press and hold the LOCK Button (14) until the button is no longer lit.
The front panel buttons are unlocked.

Copying EDID – Front Panel

VS-34FD enables you to copy an EDID from any input or output to any input.

To copy an EDID:

1. Press the MENU Button (13), four times.
The functions screen appears on the LCD display.
2. Press the EDID Button (6).
The EDID Copy screen appears.
3. Enter the source number (input or output) and the destination number (input only).
The EDID is copied.

Restarting – Front Panel

VS-34FD enables you to restart the device using the front panel buttons.

To restart VS-34FD:

1. Press the MENU Button (13), six times.
The reset screen appears.
2. Press the 1 button.
The confirm screen appears and the TAKE Button (12) flashes.
3. Press the TAKE Button (12) to confirm the restart.
VS-34FD restarts.

Performing Factory Reset – Front Panel

VS-34FD enables you to perform a factory reset using the front panel buttons.

To perform a factory reset:

1. Press the MENU Button (13), six times.
The reset screen appears.
2. Press the 2 button.
The confirm screen appears and the TAKE Button (12) flashes.
3. Press the TAKE Button (12) to confirm the factory reset.
VS-34FD restarts and resets to factory default settings.

Viewing Device Information – Front Panel

VS-34FD enables you to view IP and firmware information using the front panel buttons.

To view device information:

- IP Addresses – Press the MENU Button (13), five times and press 1 to view ETH0 IP addresses or press 2 to view ETH1 IP addresses.
- Installed Firmware Version – Press the MENU Button (13), seven times.

Operating and Controlling – Embedded Web Pages

VS-34FD enables you to operate and control the device via Ethernet using built-in, user-friendly web pages.



You can also operate and control **VS-34FD** via Protocol 3000 commands (see [Protocol 3000 Commands](#) on page [49](#)) and via the front panel buttons (see [Operating and Controlling – Front Panel](#) on page [13](#)).

VS-34FD embedded web pages enable you to do the following:

- [Browsing Web Pages](#) on page [20](#).
- [Switching – Web Pages](#) on page [22](#).
- [Copying EDID – Web Pages](#) on page [28](#).
- [Configuring Ports](#) on page [29](#).
- [Configuring Advanced Port Settings](#) on page [29](#).

Browsing Web Pages



If a web page does not update correctly, clear your Web browser's cache.

To browse the web pages:

1. Connect to **VS-34FD** via Ethernet (see [Connecting to VS-34FD via Ethernet](#) on page [10](#)).
2. Type the IP address of the device in the address bar of your internet browser (default = 192.168.1.39).

If security is enabled, the Login window appears.

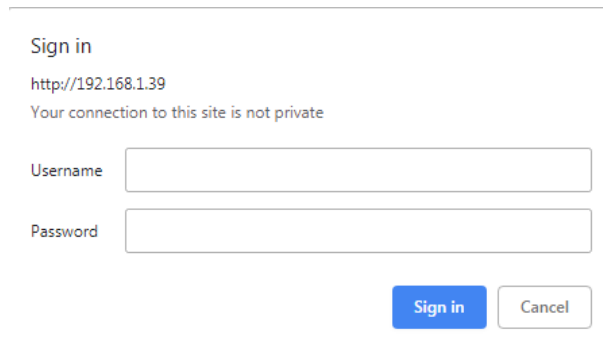
A screenshot of a web browser's login window. The window has a title bar and contains the following text: 'Sign in', 'http://192.168.1.39', and 'Your connection to this site is not private'. Below this text are two input fields: 'Username' and 'Password'. At the bottom right of the window are two buttons: 'Sign in' (highlighted in blue) and 'Cancel'.

Figure 16: Embedded Web Pages Login Window

- 3. Enter the Username (default = Admin) and Password (default = Admin) and click **Sign in**.

The default web page appears.

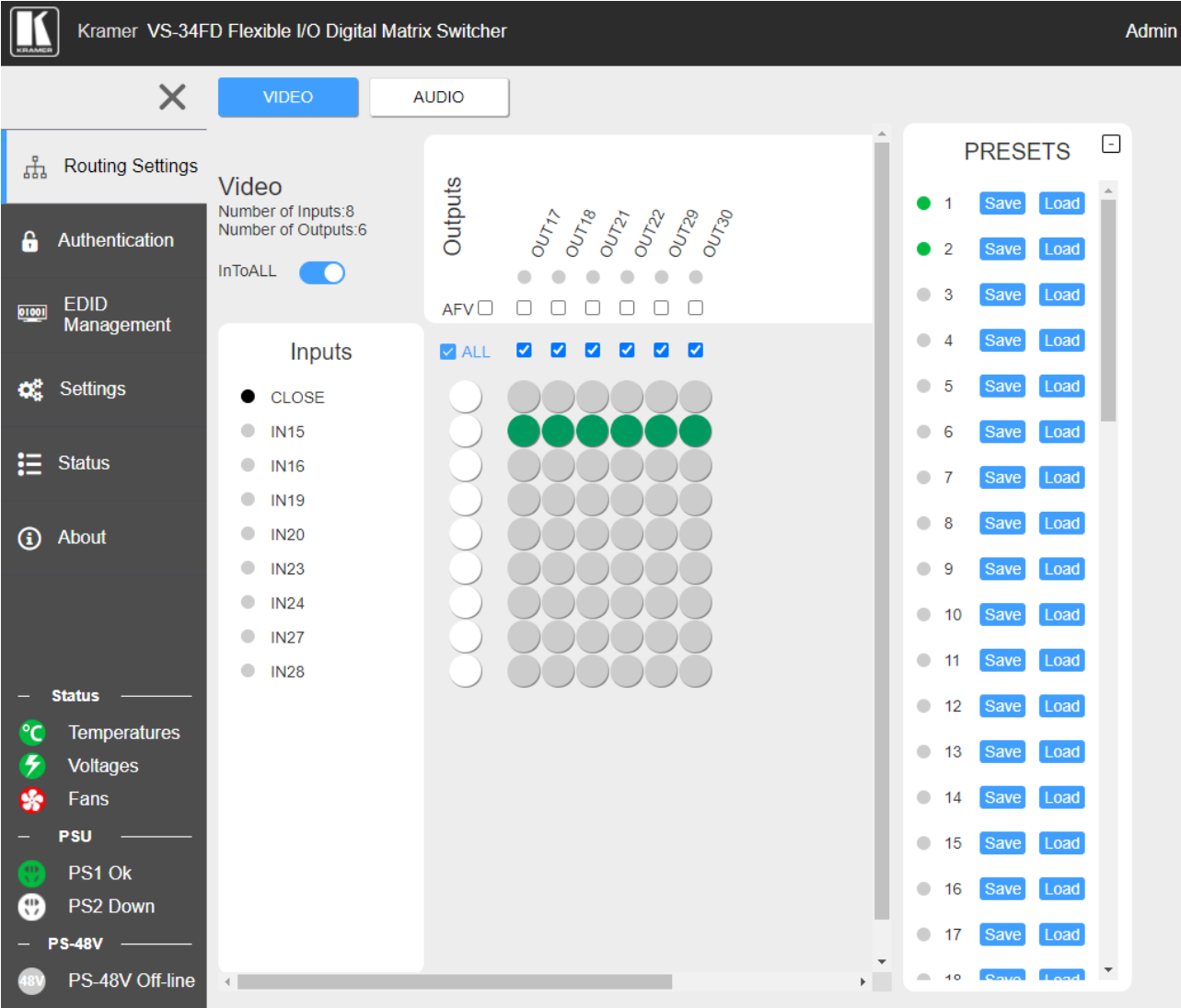


Figure 17: Default Page with Navigation Pane

- 4. Click the Navigation Pane on the left side of the screen to access the relevant web page.



Click the X next to the navigation pane to hide the names of the pages and the menu icon to show the names of the pages.

Switching – Web Pages

VS-34FD enables you to switch inputs to outputs using the embedded web pages.

VS-34FD web pages enable you to do the following:

- [Switching Video – Web Pages](#) on page [22](#).
- [Switching Audio – Web Pages](#) on page [23](#).
- [Switching an Input to All Outputs – Web Pages](#) on page [25](#).
- [Configuring Audio Follow Video](#) on page [26](#).
- [Turning Off Outputs – Web Pages](#) on page [26](#).
- [Storing and Recalling Presets – Web Pages](#) on page [27](#).

Switching Video – Web Pages

VS-34FD enables you to switch video signals from inputs to outputs using the embedded web pages.

To switch video using the embedded web pages:

1. Go to the Routing Settings page.
The Routing Settings page opens with the Video switching tab open.

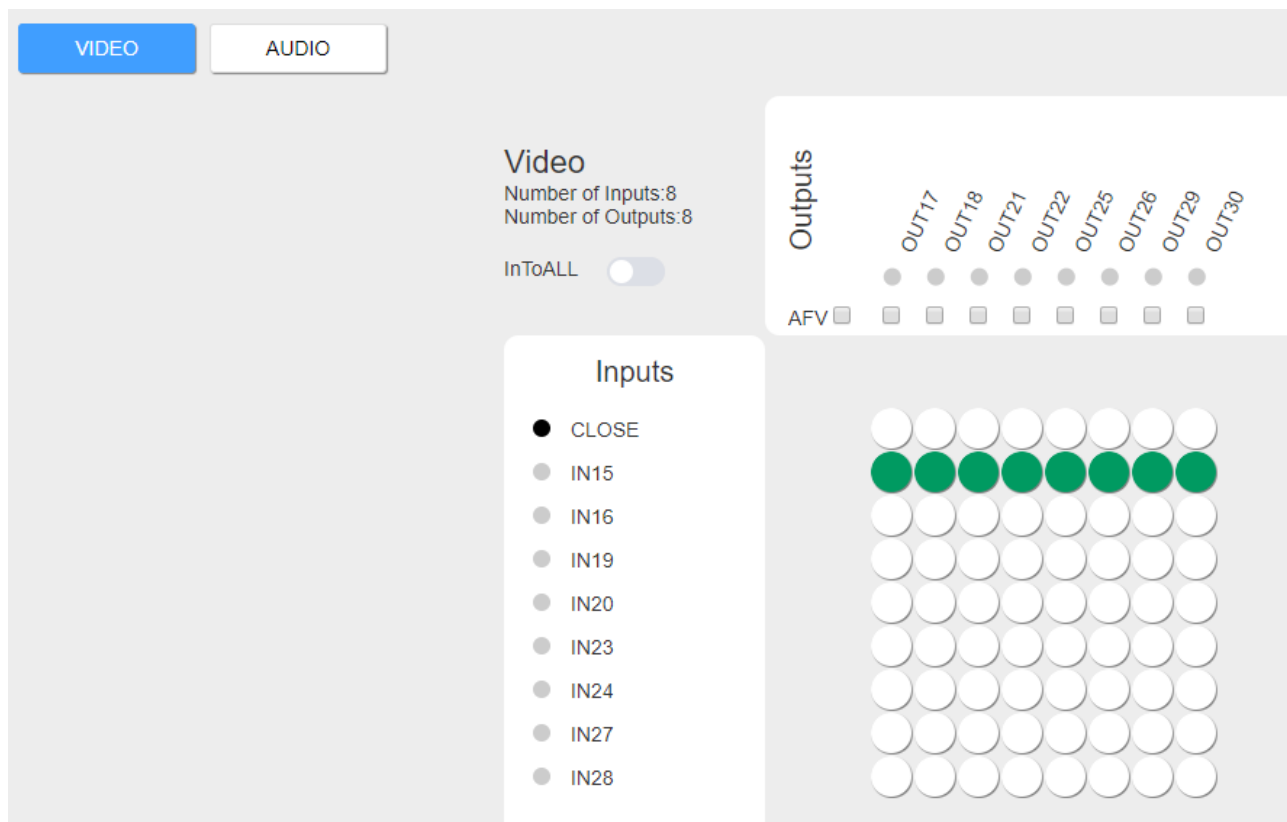


Figure 18: Routing Settings Page – Video Switching Tab

2. Click the circle that intersects the input and output that you want to switch.

The selected circle turns green, and the video input is switched to the output.

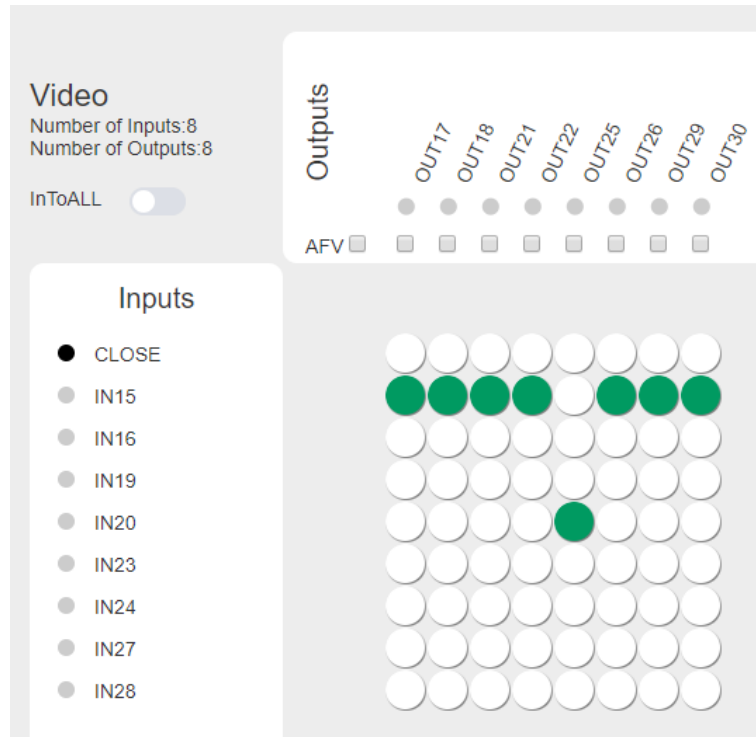


Figure 19: Video Switching Tab – IN20 Switched to OUT25

Switching Audio – Web Pages

VS-34FD enables you to switch audio signals from inputs to outputs using the embedded web pages.

To switch audio using the embedded web pages:

1. Go to the Routing Settings page ([Figure 18](#)).
2. Click **AUDIO**.

The Audio switching tab appears.

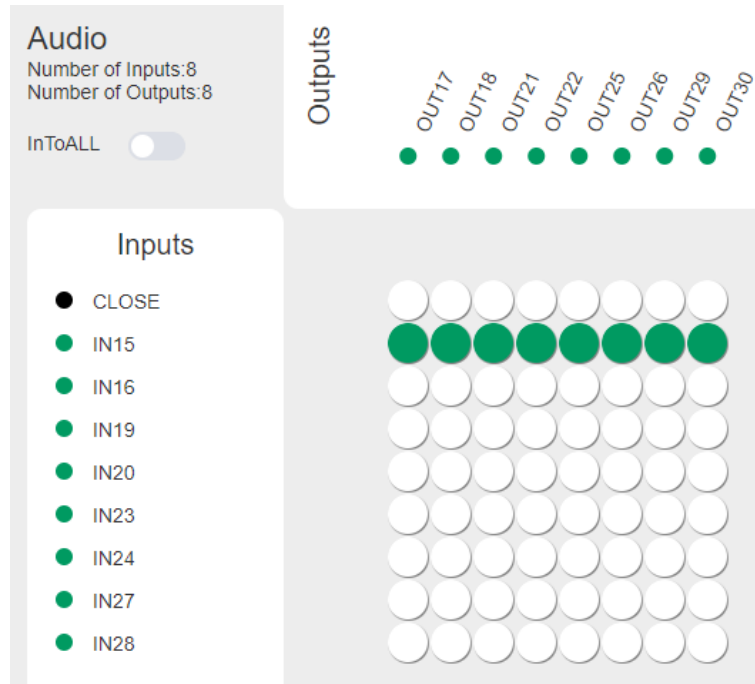


Figure 20: Routing Settings Page – Audio Switching Tab

- Click the circle that intersects the input and output that you want to switch.
The selected circle turns green, and the audio input is switched to the output.

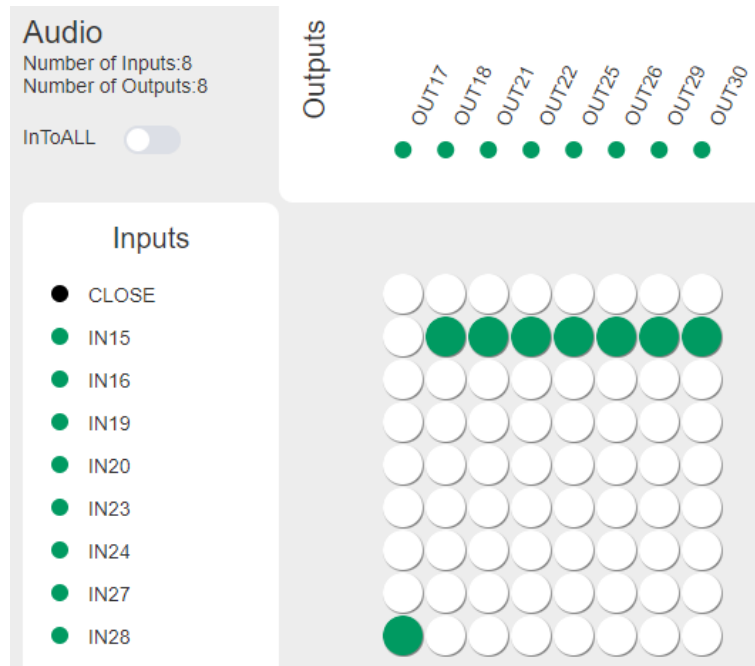


Figure 21: Audio Switching Tab – IN28 Switched to OUT17

Switching an Input to All Outputs – Web Pages

VS-34FD enables you to switch a video or audio input to all outputs using the embedded web pages.

To switch an input to all outputs:

1. Go to the Routing Settings page ([Figure 18](#)).
2. Click the **InToALL** switch.

The ALL checkboxes and circles appear.

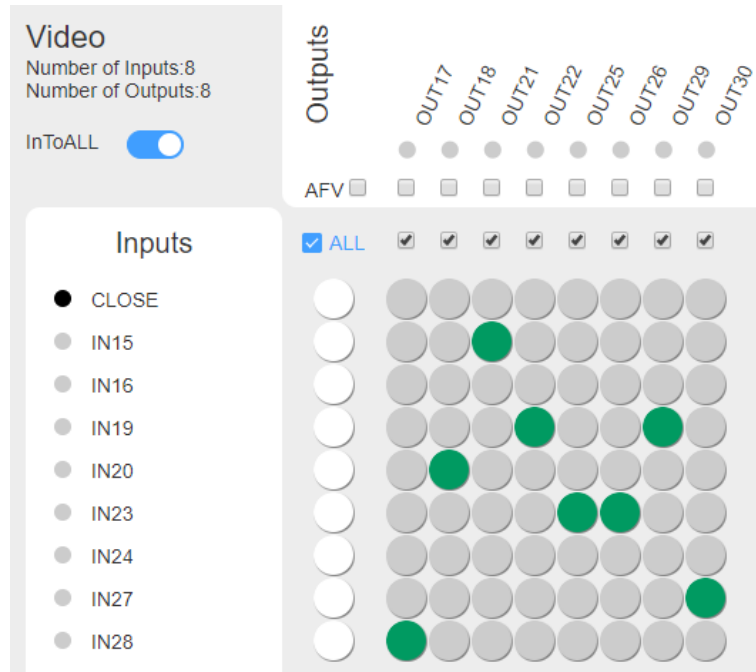


Figure 22: Routing Settings Page – InToALL Enabled

3. Click one of the circles under the ALL checkbox.

All outputs switch to the selected input.

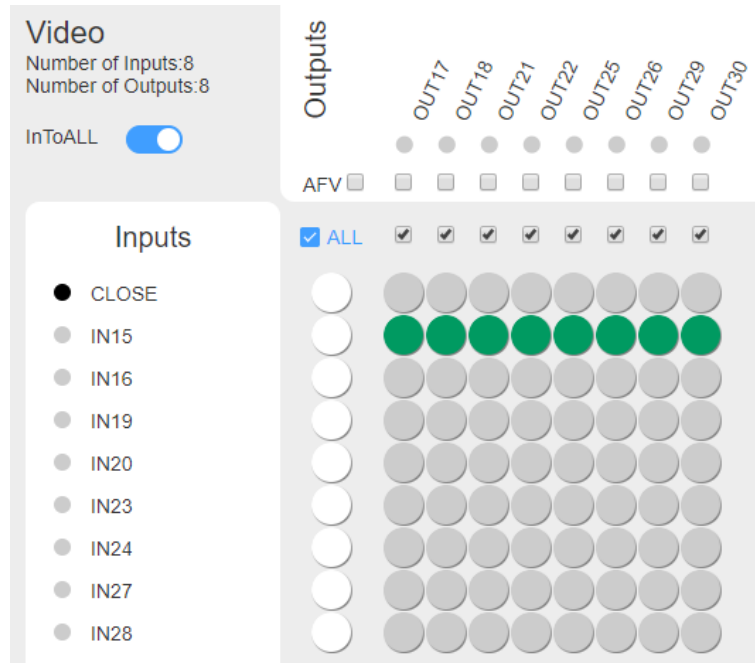




Figure 23: Routing Settings Page – All Outputs Switched to Input 15

-  To switch only specific outputs to the selected input, select/deselect the checkboxes to the right of the ALL checkbox that correspond to each output.
-  To return to normal switching mode, click the **InToALL** switch.


Configuring Audio Follow Video

VS-34FD enables you to configure audio switching to follow (mimic) the video switching, so that whenever you switch the video using the embedded web pages, the same switching occurs for the audio.

To configure audio switching to follow the video switching:

1. Go to the Routing Settings page ([Figure 18](#)).
2. Select the **AFV** checkbox.

All AFV checkboxes are selected and audio switching for all inputs is configured to follow video switching.

-  To configure only specific audio outputs to follow video, select/deselect the relevant AFV checkboxes.

Turning Off Outputs – Web Pages

VS-34FD enables you to turn off outputs, so that they are not connected to any input.

To turn off an output:

1. Go to the Routing Settings page ([Figure 18](#)).

- Click the circle in the CLOSE row that corresponds to the output that you want to turn off.

The selected output is turned off.



To turn off all outputs, click **InToALL** and click the circle under the ALL checkbox that corresponds to CLOSE ([Figure 22](#)).

Storing and Recalling Presets – Web Pages

VS-34FD enables you to store (save) and recall up to 60 different input/output configurations.

To store the current input/output configuration as a preset:

- Go to the Routing Settings page.

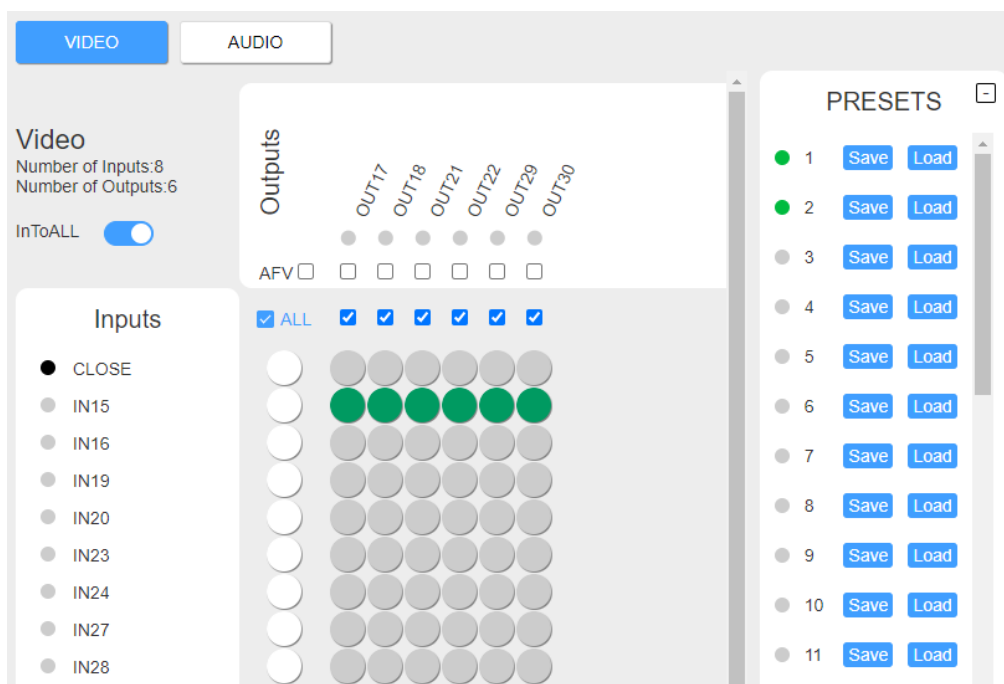


Figure 24: Routing Settings Page with Presets

- Under **PRESETS**, click **Save** for the preset number (1–60) under which you would like to save the configuration.

The current input/output configuration is stored.

To recall a stored preset:

- Under **PRESETS**, click **Load** for the preset number (1–60) that you would like to recall.

The preset is recalled and the input/output configuration changes to the selected preset.

Copying EDID – Web Pages

VS-34FD enables you to copy an EDID from any input or output to any input using the embedded web pages.

To copy an EDID:

1. Go to the EDID Management page.

Figure 25: EDID Management Page

2. Click an input or output in the **Read From** area.

-OR-

Click **DEFAULT** to use the default EDID.

3. Click all relevant Inputs in the **Copy to** area.



Select the **All** checkbox to copy to all inputs.

4. Click **COPY**.

The selected EDID is copied to all selected inputs.

Configuring Ports

VS-34FD enables you to configure settings for each input or output on a module card that is installed into the chassis.

To configure settings for a port:

1. On the Port tab of the Settings page, click the relevant port from the Port List.

The Information panel for the selected port appears.

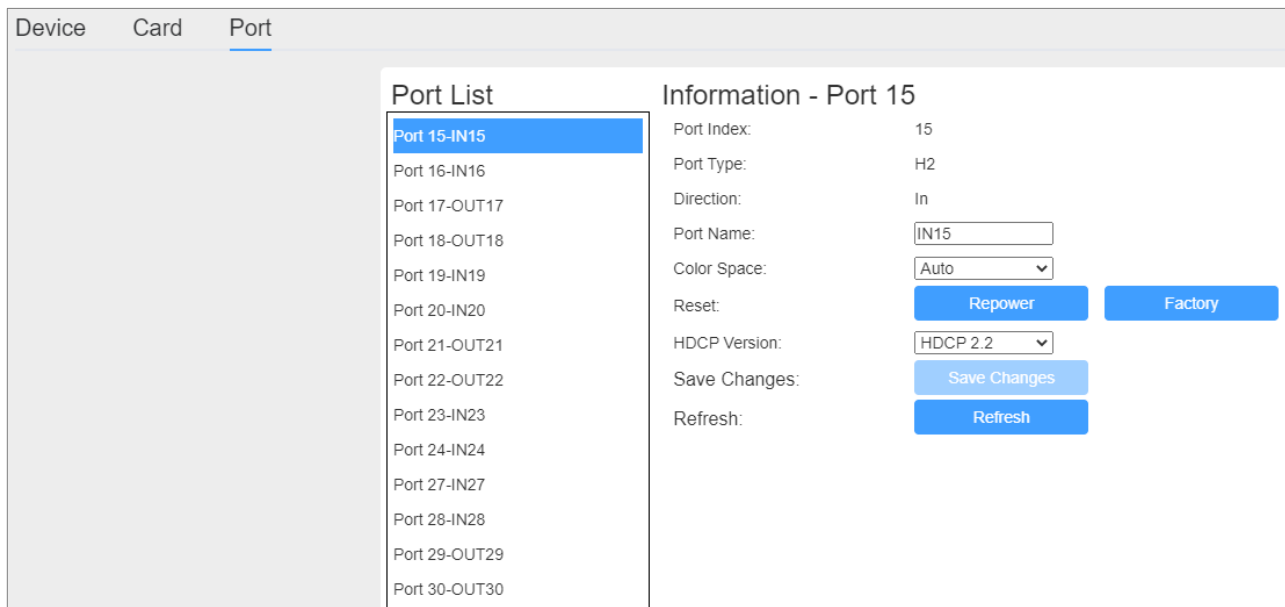


Figure 26: Settings Page > Port Tab > Port Information Panel

2. Configure settings as needed.



You can also access a port information/configuration panel by clicking the relevant port on the Routing Settings page ([Figure 18](#)).

Configuring Advanced Port Settings

VS-34FD enables you to configure the following advanced settings for select module cards:

- [Setting HDBT Range](#) on page [29](#).
- [Configuring Compression Level](#) on page [30](#).
- [Configuring Compression Resolution](#) on page [30](#).

Setting HDBT Range



These settings apply to the following input/output cards:

- DTAxrC2-IN2-F34 / DTAxrC2-OUT2-F34
- DTAxrD2-IN2-F34 / DTAxrD2-OUT2-F34
- DTAxrD2P-OUT2-F34

To set HDBT range:

- On the Port Information panel, under XTRA, select one of the following:
 - **ON** – HDBaseT ultra-long range (to enable increased range at a reduced bandwidth).
 - **OFF** – HDBaseT normal range.



Actual ranges depend on the resolution of signal. See the card technical specifications for more information.

Configuring Compression Level

These settings apply to the following input/output cards:

- DTAxrC2-IN2-F34 / DTAxrC2-OUT2-F34

To configure compression level:

- On the Port Information panel, under XTRA, select one of the following:
 - **Standard**
 - **High**

Configuring Compression Resolution

These settings apply to the following input/output cards:

- DTAxrC2-IN2-F34 / DTAxrC2-OUT2-F34

To configure compression level:

- On the Port Information panel, under XTRA, select one of the following:
 - **>1080P** – Compress signal resolutions higher than 1080p.
 - **ALL** – Compress all signal resolutions to enable extended reach.

Input / Output Card Hardware Installation Instructions

VS-34FD input and output cards mount in one of the 17 slots on the rear of the **VS-34FD** chassis. Slots are numbered from left to right according to the number of the ports on each card. For example, slot one is numbered 1–2 because the card in that slot contains inputs or outputs 1 and 2. **VS-34FD** slots are interchangeable, meaning that an input or an output card can be inserted into any slot.



You can insert IN/OUT cards into slots while the device is powered.



The process for inserting cards is the same for all cards. The diagram below is for illustration purposes only.

To install an input / output card:

1. Power off the machine and all devices connected to it.
2. Use a Phillips screwdriver, loosen the screws at the top and bottom of the blanking plate.
3. Remove the blanking plate from the slot and store it for possible future use.
4. Remove the new card from its shipping box and anti-ESD bag.
5. Holding the card by the lower handle, align the card with the plastic guide rails.
6. Slide the card into the chassis until the front of the card contacts the connector inside the chassis.
7. Press the card firmly into the slot until the connector plate is flush with the rear panel of the chassis and the connector is fully seated.
8. Using a Phillips screwdriver, tighten the retaining screws at the top and bottom of the card to secure it to the chassis.
9. Power on **VS-34FD** and configure the new card using the embedded web pages.
10. Power on the peripheral devices.

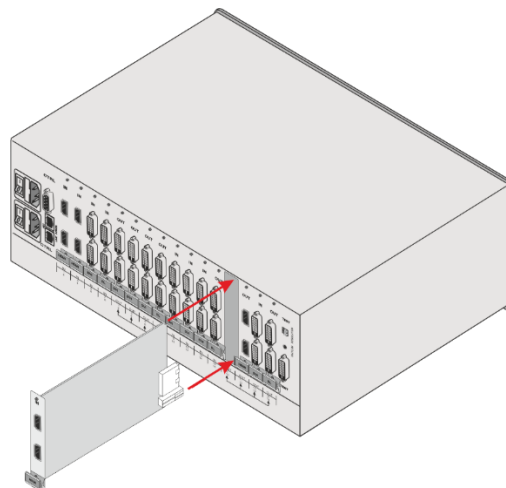


Figure 27: Input / Output Card Installation

Upgrading VS-34FD Firmware

The VS-34FD chassis and module card firmware can be upgraded in the following ways:

- [Upgrading Firmware – Embedded Web Pages](#) on page [32](#).
- [Upgrading Firmware – K-Upload](#) on page [32](#).

Upgrading Firmware – Embedded Web Pages

To upgrade VS-34FD chassis firmware using the embedded web pages:

- On the Device tab of the Settings page, click **Browse** and select the relevant upgrade file.

To upgrade the firmware of one of the module cards via the embedded web pages:

- On the Card tab of the Settings page, click **Browse** and select the relevant upgrade file.

Upgrading Firmware – K-Upload

VS-34FD enables upgrading device and card firmware via RS-232, USB (VCOM) or Ethernet using the K-Upload software application, available at www.kramerav.com/product/VS-34FD#Tab_Resources.

For instructions on upgrading the firmware using K-Upload, see the *K-Upload User Manual*.

For information on connecting to the VS-34FD via RS-232, USB (VCOM), or Ethernet, see (see [Connecting VS-34FD](#) on page [8](#)).

Default EDID

H2-IN2-F34 / H2-OUT2-F34

```

Model name..... VS-34H2
Manufacturer..... KMR
Plug and Play ID..... KMR1200
Serial number..... 295-883450100
Manufacture date..... 2014, ISO week 255
Filter driver..... None
-----
EDID revision..... 1.3
Input signal type..... Digital
Color bit depth..... Undefined
Display type..... Monochrome/grayscale
Screen size..... 520 x 320 mm (24.0 in)
Power management..... Standby, Suspend, Active off/sleep
Extension blocs..... 1 (Reserved - 0x00)
-----
DDC/CI..... Not supported

Color characteristics
Default color space..... Non-sRGB
Display gamma..... 2.20
Red chromaticity..... Rx 0.674 - Ry 0.319
Green chromaticity..... Gx 0.188 - Gy 0.706
Blue chromaticity..... Bx 0.148 - By 0.064
White point (default).... Wx 0.313 - Wy 0.329
Additional descriptors... None

Timing characteristics
Horizontal scan range.... 30-83kHz
Vertical scan range..... 56-76Hz
Video bandwidth..... 170MHz
CVT standard..... Not supported
GTF standard..... Not supported
Additional descriptors... None
Preferred timing..... Yes
Native/preferred timing.. 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 1024p at 75Hz - VESA STD
1280 x 1024p at 85Hz - VESA STD
1600 x 1200p at 60Hz - VESA STD
1024 x 768p at 85Hz - VESA STD
800 x 600p at 85Hz - VESA STD
640 x 480p at 85Hz - VESA STD
1152 x 864p at 70Hz - VESA STD
1280 x 960p at 60Hz - VESA STD

Report information
Date generated..... 5/11/2021
Software revision..... 2.60.0.972
Data source..... Real-time 0xF100 - NB: improperly installed
Operating system..... 6.2.9200.2

Raw data
00,FF,FF,FF,FF,FF,FF,FF,00,2D,B2,00,12,01,01,01,01,FF,18,01,03,80,34,20,78,E2,B3,25,AC,51,30,B4,26,
10,50,54,FF,FF,80,81,8F,81,99,A9,40,61,59,45,59,31,59,71,4A,81,40,02,3A,80,18,71,38,2D,40,58,2C,

```

45,00,A0,5A,00,00,00,1E,00,00,00,FF,00,32,39,35,2D,38,38,33,34,35,30,31,30,30,00,00,00,FC,00,56,
53,2D,33,34,48,32,0A,20,20,20,20,00,00,00,FD,00,38,4C,1E,53,11,00,0A,20,20,20,20,20,01,B7

H2A-IN2-F34 / H2A-OUT2-F34

Monitor

Model name..... VS-34H2A
 Manufacturer..... KMR
 Plug and Play ID..... KMR1200
 Serial number..... 295-883450100
 Manufacture date..... 2014, ISO week 255
 Filter driver..... None

 EDID revision..... 1.3
 Input signal type..... Digital
 Color bit depth..... Undefined
 Display type..... Monochrome/grayscale
 Screen size..... 520 x 320 mm (24.0 in)
 Power management..... Standby, Suspend, Active off/sleep
 Extension blocs..... 1 (CEA/CTA-EXT)

 DDC/CI..... n/a

Color characteristics

Default color space..... Non-sRGB
 Display gamma..... 2.20
 Red chromaticity..... Rx 0.674 - Ry 0.319
 Green chromaticity..... Gx 0.188 - Gy 0.706
 Blue chromaticity..... Bx 0.148 - By 0.064
 White point (default).... Wx 0.313 - Wy 0.329
 Additional descriptors... None

Timing characteristics

Horizontal scan range.... 30-83kHz
 Vertical scan range..... 56-76Hz
 Video bandwidth..... 170MHz
 CVT standard..... Not supported
 GTF standard..... Not supported
 Additional descriptors... None
 Preferred timing..... Yes
 Native/preferred timing.. 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 1024p at 75Hz - VESA STD
 1280 x 1024p at 85Hz - VESA STD
 1600 x 1200p at 60Hz - VESA STD
 1024 x 768p at 85Hz - VESA STD
 800 x 600p at 85Hz - VESA STD
 640 x 480p at 85Hz - VESA STD
 1152 x 864p at 70Hz - VESA STD
 1280 x 960p at 60Hz - VESA STD

EIA/CEA/CTA-861 Information

Revision number..... 3
 IT underscan..... Supported
 Basic audio..... Supported
 YCbCr 4:4:4..... Not supported
 YCbCr 4:2:2..... Not supported
 Native formats..... 1
 Detailed timing #1..... 1920x1080p at 60Hz (16:10)
 Modeline..... "1920x1080" 148.500 1920 2008 2052 2200 1080 1084 1089 1125 +hsync +vsync
 Detailed timing #2..... 1920x1080i at 60Hz (16:10)

Modeline..... "1920x1080" 74.250 1920 2008 2052 2200 1080 1084 1094 1124 interlace +hsync +vsync
 Detailed timing #3..... 1280x720p at 60Hz (16:10)
 Modeline..... "1280x720" 74.250 1280 1390 1430 1650 720 725 730 750 +hsync +vsync
 Detailed timing #4..... 720x480p at 60Hz (16:10)
 Modeline..... "720x480" 27.000 720 736 798 858 480 489 495 525 -hsync -vsync

CE audio data (formats supported)
 LPCM 2-channel, 16/20/24 bit depths at 32/44/48 kHz

CE video identifiers (VICs) - timing/formats supported
 1920 x 1080p at 60Hz - HDTV (16:9, 1:1) [Native]
 1920 x 1080i at 60Hz - HDTV (16:9, 1:1)
 1280 x 720p at 60Hz - HDTV (16:9, 1:1)
 720 x 480p at 60Hz - EDTV (16:9, 32:27)
 720 x 480p at 60Hz - EDTV (4:3, 8:9)
 720 x 480i at 60Hz - Doublescan (16:9, 32:27)
 720 x 576i at 50Hz - Doublescan (16:9, 64:45)
 640 x 480p at 60Hz - Default (4:3, 1:1)
 NB: NTSC refresh rate = (Hz*1000)/1001

CE vendor specific data (VSDB)
 IEEE registration number. 0x000C03
 CEC physical address..... 1.0.0.0
 Maximum TMDS clock..... 165MHz

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

Report information
 Date generated..... 11/05/2021
 Software revision..... 2.91.0.1043
 Data source..... File - NB: improperly installed
 Operating system..... 10.0.18362.2

Raw data
 00,FF,FF,FF,FF,FF,FF,FF,00,2D,B2,00,12,01,01,01,01,FF,18,01,03,80,34,20,78,E2,B3,25,AC,51,30,B4,26,
 10,50,54,FF,FF,80,81,8F,81,99,A9,40,61,59,45,59,31,59,71,4A,81,40,02,3A,80,18,71,38,2D,40,58,2C,
 45,00,A0,5A,00,00,00,1E,00,00,00,FF,00,32,39,35,2D,38,38,33,34,35,30,31,30,30,00,00,00,FC,00,56,
 53,2D,33,34,48,32,41,0A,20,20,20,20,00,00,00,FD,00,38,4C,1E,53,11,00,0A,20,20,20,20,20,01,96,
 02,03,1B,C1,23,09,07,07,48,90,05,04,03,02,07,16,01,65,03,0C,00,10,00,83,01,00,00,02,3A,80,18,71,
 38,2D,40,58,2C,45,00,07,44,21,00,00,1E,01,1D,80,18,71,1C,16,20,58,2C,25,00,07,44,21,00,00,9E,01,
 1D,00,72,51,D0,1E,20,6E,28,55,00,07,44,21,00,00,1E,8C,0A,D0,8A,20,E0,2D,10,10,3E,96,00,07,44,21,
 00,00,18,00,77

DTAxrC2-IN2-F34 / DTAxrC2-OUT2-F34

Monitor
 Model name..... VS-34DTAxrC2
 Manufacturer..... KMR
 Plug and Play ID..... KMR1200
 Serial number..... 295-883450100
 Manufacture date..... 2014, ISO week 255
 Filter driver..... None

 EDID revision..... 1.3
 Input signal type..... Digital
 Color bit depth..... Undefined
 Display type..... Monochrome/grayscale
 Screen size..... 520 x 320 mm (24.0 in)
 Power management..... Standby, Suspend, Active off/sleep
 Extension blocs..... 1 (CEA/CTA-EXT)

 DDC/CI..... n/a

Color characteristics
 Default color space..... Non-sRGB
 Display gamma..... 2.20
 Red chromaticity..... Rx 0.674 - Ry 0.319
 Green chromaticity..... Gx 0.188 - Gy 0.706
 Blue chromaticity..... Bx 0.148 - By 0.064
 White point (default)... Wx 0.313 - Wy 0.329
 Additional descriptors... None

Timing characteristics

Horizontal scan range.... 30-83kHz
 Vertical scan range..... 56-76Hz
 Video bandwidth..... 170MHz
 CVT standard..... Not supported
 GTF standard..... Not supported
 Additional descriptors... None
 Preferred timing..... Yes
 Native/preferred timing.. 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 1024p at 75Hz - VESA STD
 1280 x 1024p at 85Hz - VESA STD
 1600 x 1200p at 60Hz - VESA STD
 1024 x 768p at 85Hz - VESA STD
 800 x 600p at 85Hz - VESA STD
 640 x 480p at 85Hz - VESA STD
 1152 x 864p at 70Hz - VESA STD
 1280 x 960p at 60Hz - VESA STD

EIA/CEA/CTA-861 Information

Revision number..... 3
 IT underscan..... Supported
 Basic audio..... Supported
 YCbCr 4:4:4..... Not supported
 YCbCr 4:2:2..... Not supported
 Native formats..... 1
 Detailed timing #1..... 1920x1080p at 60Hz (16:10)
 Modeline..... "1920x1080" 148.500 1920 2008 2052 2200 1080 1084 1089 1125 +hsync +vsync
 Detailed timing #2..... 1920x1080i at 60Hz (16:10)
 Modeline..... "1920x1080" 74.250 1920 2008 2052 2200 1080 1084 1094 1124 interlace +hsync +vsync
 Detailed timing #3..... 1280x720p at 60Hz (16:10)
 Modeline..... "1280x720" 74.250 1280 1390 1430 1650 720 725 730 750 +hsync +vsync
 Detailed timing #4..... 720x480p at 60Hz (16:10)
 Modeline..... "720x480" 27.000 720 736 798 858 480 489 495 525 -hsync -vsync

CE audio data (formats supported)

LPCM 2-channel, 16/20/24 bit depths at 32/44/48 kHz

CE video identifiers (VICs) - timing/formats supported

1920 x 1080p at 60Hz - HDTV (16:9, 1:1) [Native]
 1920 x 1080i at 60Hz - HDTV (16:9, 1:1)
 1280 x 720p at 60Hz - HDTV (16:9, 1:1)
 720 x 480p at 60Hz - EDTV (16:9, 32:27)
 720 x 480p at 60Hz - EDTV (4:3, 8:9)
 720 x 480i at 60Hz - Doublescan (16:9, 32:27)
 720 x 576i at 50Hz - Doublescan (16:9, 64:45)
 640 x 480p at 60Hz - Default (4:3, 1:1)
 NB: NTSC refresh rate = (Hz*1000)/1001

CE vendor specific data (VSDB)

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

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

Report information

Date generated..... 11/05/2021
 Software revision..... 2.91.0.1043
 Data source..... File - NB: improperly installed
 Operating system..... 10.0.18362.2

Raw data

00,FF,FF,FF,FF,FF,FF,00,2D,B2,00,12,01,01,01,01,FF,18,01,03,80,34,20,78,E2,B3,25,AC,51,30,B4,26,
 10,50,54,FF,FF,80,81,8F,81,99,A9,40,61,59,45,59,31,59,71,4A,81,40,02,3A,80,18,71,38,2D,40,58,2C,
 45,00,A0,5A,00,00,00,1E,00,00,00,FF,00,32,39,35,2D,38,38,33,34,35,30,31,30,30,00,00,00,FC,00,56,
 53,2D,33,34,44,54,41,78,72,43,32,0A,00,00,00,FD,00,38,4C,1E,53,11,00,0A,20,20,20,20,20,20,01,99,
 02,03,1B,C1,23,09,07,07,48,90,05,04,03,02,07,16,01,65,03,0C,00,10,00,83,01,00,00,02,3A,80,18,71,
 38,2D,40,58,2C,45,00,07,44,21,00,00,1E,01,1D,80,18,71,1C,16,20,58,2C,25,00,07,44,21,00,00,9E,01,
 1D,00,72,51,D0,1E,20,6E,28,55,00,07,44,21,00,00,1E,8C,0A,D0,8A,20,E0,2D,10,10,3E,96,00,07,44,21,
 00,00,18,00,77

DTA_{xr}D2-IN2-F34 / DTA_{xr}D2-OUT2-F34

Monitor

Model name..... VS-34DTA_{xr}D2
 Manufacturer..... KMR
 Plug and Play ID..... KMR1200
 Serial number..... 295-883450100
 Manufacture date..... 2014, ISO week 255
 Filter driver..... None

 EDID revision..... 1.3
 Input signal type..... Digital
 Color bit depth..... Undefined
 Display type..... Monochrome/grayscale
 Screen size..... 520 x 320 mm (24.0 in)
 Power management..... Standby, Suspend, Active off/sleep
 Extension blocs..... 1 (CEA/CTA-EXT)

 DDC/CI..... n/a

Color characteristics

Default color space..... Non-sRGB
 Display gamma..... 2.20
 Red chromaticity..... Rx 0.674 - Ry 0.319
 Green chromaticity..... Gx 0.188 - Gy 0.706
 Blue chromaticity..... Bx 0.148 - By 0.064
 White point (default)... Wx 0.313 - Wy 0.329
 Additional descriptors... None

Timing characteristics

Horizontal scan range.... 30-83kHz
 Vertical scan range..... 56-76Hz
 Video bandwidth..... 170MHz
 CVT standard..... Not supported
 GTF standard..... Not supported
 Additional descriptors... None
 Preferred timing..... Yes
 Native/preferred timing.. 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 1024p at 75Hz - VESA STD
 1280 x 1024p at 85Hz - VESA STD
 1600 x 1200p at 60Hz - VESA STD

1024 x 768p at 85Hz - VESA STD
 800 x 600p at 85Hz - VESA STD
 640 x 480p at 85Hz - VESA STD
 1152 x 864p at 70Hz - VESA STD
 1280 x 960p at 60Hz - VESA STD

EIA/CEA/CTA-861 Information

Revision number..... 3
 IT underscan..... Supported
 Basic audio..... Supported
 YCbCr 4:4:4..... Not supported
 YCbCr 4:2:2..... Not supported
 Native formats..... 1
 Detailed timing #1..... 1920x1080p at 60Hz (16:10)
 Modeline..... "1920x1080" 148.500 1920 2008 2052 2200 1080 1084 1089 1125 +hsync +vsync
 Detailed timing #2..... 1920x1080i at 60Hz (16:10)
 Modeline..... "1920x1080" 74.250 1920 2008 2052 2200 1080 1084 1094 1124 interlace +hsync +vsync
 Detailed timing #3..... 1280x720p at 60Hz (16:10)
 Modeline..... "1280x720" 74.250 1280 1390 1430 1650 720 725 730 750 +hsync +vsync
 Detailed timing #4..... 720x480p at 60Hz (16:10)
 Modeline..... "720x480" 27.000 720 736 798 858 480 489 495 525 -hsync -vsync

CE audio data (formats supported)

LPCM 2-channel, 16/20/24 bit depths at 32/44/48 kHz

CE video identifiers (VICs) - timing/formats supported

1920 x 1080p at 60Hz - HDTV (16:9, 1:1) [Native]
 1920 x 1080i at 60Hz - HDTV (16:9, 1:1)
 1280 x 720p at 60Hz - HDTV (16:9, 1:1)
 720 x 480p at 60Hz - EDTV (16:9, 32:27)
 720 x 480p at 60Hz - EDTV (4:3, 8:9)
 720 x 480i at 60Hz - Doublescan (16:9, 32:27)
 720 x 576i at 50Hz - Doublescan (16:9, 64:45)
 640 x 480p at 60Hz - Default (4:3, 1:1)
 NB: NTSC refresh rate = (Hz*1000)/1001

CE vendor specific data (VSDB)

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

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

Report information

Date generated..... 11/05/2021
 Software revision..... 2.91.0.1043
 Data source..... File - NB: improperly installed
 Operating system..... 10.0.18362.2

Raw data

00,FF,FF,FF,FF,FF,FF,00,2D,B2,00,12,01,01,01,01,FF,18,01,03,80,34,20,78,E2,B3,25,AC,51,30,B4,26,
 10,50,54,FF,FF,80,81,8F,81,99,A9,40,61,59,45,59,31,59,71,4A,81,40,02,3A,80,18,71,38,2D,40,58,2C,
 45,00,A0,5A,00,00,00,1E,00,00,00,FF,00,32,39,35,2D,38,38,33,34,35,30,31,30,30,00,00,00,FC,00,56,
 53,2D,33,34,44,54,41,78,72,44,32,0A,00,00,00,FD,00,38,4C,1E,53,11,00,0A,20,20,20,20,20,01,98,
 02,03,1B,C1,23,09,07,07,48,90,05,04,03,02,07,16,01,65,03,0C,00,10,00,83,01,00,00,02,3A,80,18,71,
 38,2D,40,58,2C,45,00,07,44,21,00,00,1E,01,1D,80,18,71,1C,16,20,58,2C,25,00,07,44,21,00,00,9E,01,
 1D,00,72,51,D0,1E,20,6E,28,55,00,07,44,21,00,00,1E,8C,0A,D0,8A,20,E0,2D,10,10,3E,96,00,07,44,21,
 00,00,18,00,77

F676-IN2-F34 / F676-OUT2-F34

Monitor

Model name..... VS-34F676
 Manufacturer..... KMR
 Plug and Play ID..... KMR1200
 Serial number..... 295-883450100
 Manufacture date..... 2014, ISO week 255
 Filter driver..... None

 EDID revision..... 1.3
 Input signal type..... Digital

Color bit depth..... Undefined
 Display type..... Monochrome/grayscale
 Screen size..... 520 x 320 mm (24.0 in)
 Power management..... Standby, Suspend, Active off/sleep
 Extension blocs..... 1 (CEA/CTA-EXT)

 DDC/CI..... n/a

Color characteristics

Default color space..... Non-sRGB
 Display gamma..... 2.20
 Red chromaticity..... Rx 0.674 - Ry 0.319
 Green chromaticity..... Gx 0.188 - Gy 0.706
 Blue chromaticity..... Bx 0.148 - By 0.064
 White point (default).... Wx 0.313 - Wy 0.329
 Additional descriptors... None

Timing characteristics

Horizontal scan range.... 30-83kHz
 Vertical scan range..... 56-76Hz
 Video bandwidth..... 170MHz
 CVT standard..... Not supported
 GTF standard..... Not supported
 Additional descriptors... None
 Preferred timing..... Yes
 Native/preferred timing.. 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 1024p at 75Hz - VESA STD
 1280 x 1024p at 85Hz - VESA STD
 1600 x 1200p at 60Hz - VESA STD
 1024 x 768p at 85Hz - VESA STD
 800 x 600p at 85Hz - VESA STD
 640 x 480p at 85Hz - VESA STD
 1152 x 864p at 70Hz - VESA STD
 1280 x 960p at 60Hz - VESA STD

EIA/CEA/CTA-861 Information

Revision number..... 3
 IT underscan..... Supported
 Basic audio..... Supported
 YCbCr 4:4:4..... Not supported
 YCbCr 4:2:2..... Not supported
 Native formats..... 1
 Detailed timing #1..... 1920x1080p at 60Hz (16:10)
 Modeline..... "1920x1080" 148.500 1920 2008 2052 2200 1080 1084 1089 1125 +hsync +vsync
 Detailed timing #2..... 1920x1080i at 60Hz (16:10)
 Modeline..... "1920x1080" 74.250 1920 2008 2052 2200 1080 1084 1094 1124 interlace +hsync +vsync
 Detailed timing #3..... 1280x720p at 60Hz (16:10)
 Modeline..... "1280x720" 74.250 1280 1390 1430 1650 720 725 730 750 +hsync +vsync
 Detailed timing #4..... 720x480p at 60Hz (16:10)
 Modeline..... "720x480" 27.000 720 736 798 858 480 489 495 525 -hsync -vsync

CE audio data (formats supported)

LPCM 2-channel, 16/20/24 bit depths at 32/44/48 kHz

CE video identifiers (VICs) - timing/formats supported

1920 x 1080p at 60Hz - HDTV (16:9, 1:1) [Native]
 1920 x 1080i at 60Hz - HDTV (16:9, 1:1)
 1280 x 720p at 60Hz - HDTV (16:9, 1:1)
 720 x 480p at 60Hz - EDTV (16:9, 32:27)
 720 x 480p at 60Hz - EDTV (4:3, 8:9)
 720 x 480i at 60Hz - Doublescan (16:9, 32:27)
 720 x 576i at 50Hz - Doublescan (16:9, 64:45)

640 x 480p at 60Hz - Default (4:3, 1:1)
NB: NTSC refresh rate = (Hz*1000)/1001

CE vendor specific data (VSDB)
IEEE registration number. 0x000C03
CEC physical address..... 1.0.0.0
Maximum TMDS clock..... 165MHz

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

Report information
Date generated..... 09/02/2021
Software revision..... 2.91.0.1043
Data source..... File - NB: improperly installed
Operating system..... 10.0.18363.2

Raw data
00,FF,FF,FF,FF,FF,FF,00,2D,B2,00,12,01,01,01,01,FF,18,01,03,80,34,20,78,E2,B3,25,AC,51,30,B4,26,
10,50,54,FF,FF,80,81,8F,81,99,A9,40,61,59,45,59,31,59,71,4A,81,40,02,3A,80,18,71,38,2D,40,58,2C,
45,00,A0,5A,00,00,00,01E,00,00,00,FF,00,32,39,35,2D,38,38,33,34,35,30,31,30,30,00,00,00,FC,00,56,
53,2D,33,34,46,36,37,36,0A,20,20,20,00,00,00,FD,00,38,4C,1E,53,11,00,0A,20,20,20,20,20,01,88,
02,03,1B,C1,23,09,07,07,48,90,05,04,03,02,07,16,01,65,03,0C,00,10,00,83,01,00,00,02,3A,80,18,71,
38,2D,40,58,2C,45,00,07,44,21,00,00,1E,01,1D,80,18,71,1C,16,20,58,2C,25,00,07,44,21,00,00,9E,01,
1D,00,72,51,D0,1E,20,6E,28,55,00,07,44,21,00,00,1E,8C,0A,D0,8A,20,E0,2D,10,10,3E,96,00,07,44,21,
00,00,18,00,77

DTAXRD2P-OUT2-F34

Model name..... VS-34DTAxRD2P
Manufacturer..... KMR
Plug and Play ID..... KMR1200
Serial number..... 295-883450100
Manufacture date..... 2019, ISO week 9
Filter driver..... None

EDID revision..... 1.3
Input signal type..... Digital
Color bit depth..... Undefined
Display type..... Monochrome/grayscale
Screen size..... 520 x 320 mm (24.0 in)
Power management..... Standby, Suspend, Active off/sleep
Extension blocs..... 1 (CEA/CTA-EXT)
DDC/CI..... Not supported

Color characteristics
Default color space..... Non-sRGB
Display gamma..... 2.20
Red chromaticity..... Rx 0.674 - Ry 0.319
Green chromaticity..... Gx 0.188 - Gy 0.706
Blue chromaticity..... Bx 0.148 - By 0.064
White point (default).... Wx 0.313 - Wy 0.329
Additional descriptors... None

Timing characteristics
Horizontal scan range.... 30-83kHz
Vertical scan range..... 56-76Hz
Video bandwidth..... 170MHz
CVT standard..... Not supported
GTF standard..... Not supported
Additional descriptors... None
Preferred timing..... Yes
Native/preferred timing.. 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

Technical Specifications

VS-34FD Chassis

BANDWIDTH	Supports up to 50Gbps (12.5Gbps per graphic channel), depending on the cards used.
CONTROLS	Front panel buttons, RS-232, Ethernet
POWER CONSUMPTION	100-240V AC, 50/60Hz, 3.7A
OPERATING TEMPERATURE	0° to +55°C (32° to 131°F)
STORAGE TEMPERATURE	-45° to +72°C (-49° to 162°F)
HUMIDITY	10% to 90%, RHL non-condensing
COOLING	Forced air, fan
ENCLOSURE TYPE	Aluminum
RACK MOUNT	With supplied rack ears
DIMENSIONS	19" 6U (48.3cm x 36cm x 26.6cm W, D, H)
SHIPPING DIMENSIONS	60cm x 49.3cm x 39cm
PRODUCT WEIGHT	13.54kg (29.85lbs) approx.
SHIPPING WEIGHT	14.9kg (32.85lbs) approx.
VIBRATION	ISTA 1A in carton (International Safe Transit Association)
SAFETY REGULATORY COMPLIANCE	CE
ENVIRONMENTAL REGULATORY COMPLIANCE	Complies with appropriate requirements of RoHs and WEEE
INCLUDED ACCESSORIES	Power cord
OPTIONAL ACCESSORIES	For optimum range and performance use recommended Kramer cables available at www.kramerav.com/product/VS-34FD
Specifications are subject to change without notice at www.kramerav.com	


H2-IN2-F34 / H2-OUT2-F34

INPUTS/OUTPUTS	2 HDMI: On female HDMI connectors
VIDEO	Max Data Rate: 18Gbps (6Gbps per graphics channel)
	Max Resolution: 4K@60Hz (4:4:4)
	HDMI Support: 3D, Deep Color, x.v.Color™, ARC, Dolby® TrueHD, Dolby Digital Plus, DTS-HD®, and 7.1 multi-channel audio
	Content Protection: HDCP 2.2/1.4 compliant
EXTENSION LINE	Range at 4K60 (4:2:0) or 4K30 (4:4:4) Resolution: 10m (32ft)
	Range at 1080p 12-bit (deep color) Resolution: 15m (49ft)
POWER	Consumption: 5W
ENVIRONMENTAL CONDITIONS	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
REGULATORY COMPLIANCE (STANDARDS COMPLIANCE)	Safety: CE
PRODUCT DIMENSIONS	12.90cm x 24.90cm x 2.00cm (5.08" x 9.80" x 0.79") W, D, H
PRODUCT WEIGHT	0.2kg (0.5lbs) approx.
SHIPPING DIMENSIONS	16.50cm x 34.50cm x 5.90cm (6.50" x 13.58" x 2.32") W, D, H
SHIPPING WEIGHT	0.4kg (0.9lbs) approx.

H2A-IN2-F34 / H2A-OUT2-F34

INPUTS/OUTPUTS	<ul style="list-style-type: none"> • 2 HDMI: On female HDMI connectors
PORTS	<ul style="list-style-type: none"> • 2 Analog Audio: On 3.5mm mini jacks
VIDEO	<ul style="list-style-type: none"> • Max Data Rate: 18Gbps (6Gbps per graphics channel) • Max Resolution: 4K@60Hz (4:4:4) • HDMI Support: 3D, Deep Color, x.v.Color™, ARC, Dolby® TrueHD, Dolby Digital Plus, DTS–HD®, and 7.1 multi–channel audio • Content Protection: HDCP 2.2/1.4 compliant
EXTENSION LINE	<ul style="list-style-type: none"> • Range at 4K60 (4:2:0) or 4K30 (4:4:4) Resolution: 10m (32ft) • Range at 1080p 12 bit (deep color) Resolution: 15m (49ft)
POWER	Consumption: 5W
ENVIRONMENTAL CONDITIONS	<ul style="list-style-type: none"> • 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
REGULATORY COMPLIANCE (STANDARDS COMPLIANCE)	Safety: CE
PRODUCT DIMENSIONS	12.90cm x 24.90cm x 2.00cm (5.08" x 9.80" x 0.79") W, D, H
PRODUCT WEIGHT	0.2kg (0.5lbs) approx.
SHIPPING DIMENSIONS	16.50cm x 34.50cm x 5.90cm (6.50" x 13.58" x 2.32") W, D, H
SHIPPING WEIGHT	0.4kg (0.9lbs) approx.

DTAxrC2-IN2-F34 / DTAxrC2-OUT2-F34

INPUTS/OUTPUTS	<ul style="list-style-type: none"> • 2 HDBaseT: On RJ–45 connectors
PORTS	<ul style="list-style-type: none"> • 2 Unbalanced Audio: On a 6–pin terminal block connector • 2 RS-232: On a 6–pin terminal block connector • 2 IR: On a 4–pin terminal block • 1 Ethernet: On an RJ–45 connector
EXTENSION LINE	<ul style="list-style-type: none"> • Standard Compression: Up to 100m (330ft) at 4K@60Hz (4:4:4), 4K@60Hz (4:2:0) or 4K@30Hz (4:4:4) • Up to 180m (590ft) at full HD (1080p @60Hz 24bpp) • High Compression: Up to 100m (330ft) at 4K@60Hz (4:4:4), or 4K@60Hz (4:2:0) • Up to 180m (590ft) at 4K@30Hz (4:4:4) • Up to 200m (650ft) at full HD (1080p @60Hz 24bpp) • No Compression: Up to 100m (330ft) at 4K@60Hz (4:2:0) • Up to 180m (590ft) at full HD (1080p @60Hz 24bpp) • Standards Compliance: HDBaseT 1.0 <p> When using recommended Kramer cables</p>

VIDEO	<ul style="list-style-type: none"> • Max Data Rate: Up to 18Gbps (6Gbps per graphic channel), 10Gbps CSC over CAT cable • Standard Compression Max Resolution: 4096x2160@60Hz (4:4:4) 24bpp • High Compression Max Resolution: 3840x2160@60Hz (4:4:4) 24bpp • No-Compression Max Resolution: 4096x2160@60Hz (4:2:0) 24bpp • Compliance: HDCP 2.2, HDR 10 • HDMI Support: Deep color, x.v.Color™, lip sync, HDMI uncompressed audio channels, Dolby TrueHD, DTS–HD, 2K, 4K, and 3D as specified in HDMI 2.0
EXTENDED ETHERNET	Bandwidth: Up to 100Mbps
EXTENDED RS-232	Baud Rate: 300 to 115200
POWER	Consumption: 21.5W
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
REGULATORY COMPLIANCE (STANDARDS COMPLIANCE)	<ul style="list-style-type: none"> • Safety: CE • Environmental: Complies with appropriate requirements of RoHs and WEEE
DIMENSIONS	25.00cm x 13.00cm x 2.00cm (9.84" x 5.12" x 0.79") W, D, H
PRODUCT WEIGHT	0.3kg (0.7lbs) approx.
SHIPPING DIMENSIONS	16.50cm x 34.50cm x 5.90cm (6.50" x 13.58" x 2.32") W, D, H
SHIPPING WEIGHT	0.5kg (1.1lbs) approx.

DTAxrD2-IN2-F34 / DTAxrD2-OUT2-F34

INPUTS/OUTPUTS	<ul style="list-style-type: none"> • 2 HDBaseT: On RJ–45 connectors
PORTS	<ul style="list-style-type: none"> • 2 Unbalanced Audio: On a 6–pin terminal block connector • 2 RS-232: On a 6–pin terminal block connector • 2 IR: On a 4–pin terminal block • 1 Ethernet: On an RJ–45 connector
EXTENSION LINE	<ul style="list-style-type: none"> • Compression: Low–level standard DSC compression for signals above 4K@60 (4:2:0) • 4K@60 (4:4:4) Range with Compression: Up to 100m (330ft) • 4K@60 (4:2:0) Range with No Compression: Up to 100m (330ft) • Full HD (1080p@60Hz) Range with No Compression: Up to 130m (430ft), • Full HD (1080p@60Hz) Range in Ultra–Long Mode: Up to 180m (590ft) • Compliance: HDBaseT 2.0 • Note: Use Kramer shielded cables to achieve optimum extension ranges

VIDEO	<ul style="list-style-type: none"> • Max Bandwidth with Compression: 17.95Gbps (5.98Gbps per graphic channel) • Max Bandwidth with No Compression: 10.2Gbps (3.4Gbps per graphic channel) • Max Resolution with Compression: 3840x2160@60Hz 4:4:4 24bpp • Max Resolution with No Compression: 4096x2160@60Hz 4:2:0 24bpp • Compliance: HDCP 2.2, HDR 10
EXTENDED ETHERNET	Bandwidth: Up to 100Mbps
EXTENDED RS-232	Baud Rate: 300 to 115200
POWER	Consumption: 21.5W
ENVIRONMENTAL CONDITIONS	<ul style="list-style-type: none"> • 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
REGULATORY COMPLIANCE (STANDARDS COMPLIANCE)	<ul style="list-style-type: none"> • Safety: CE • Environmental: Complies with appropriate requirements of RoHs and WEEE
PRODUCT DIMENSIONS	25.00cm x 13.00cm x 2.00cm (9.84" x 5.12" x 0.79") W, D, H
PRODUCT WEIGHT	0.2kg (0.5lbs) approx.
SHIPPING DIMENSIONS	29.30cm x 16.50cm x 5.90cm (11.54" x 6.50" x 2.32") W, D, H
SHIPPING WEIGHT	0.4kg (0.9lbs) approx.

DTAxrD2P-OUT2-F34

INPUTS/OUTPUTS	<ul style="list-style-type: none"> • 2 HDBaseT: On RJ-45 connectors
PORTS	<ul style="list-style-type: none"> • 2 Unbalanced Audio: On a 6-pin terminal block connector • 2 RS-232: On a 6-pin terminal block connector • 2 IR: On a 4-pin terminal block • 1 Ethernet: On an RJ-45 connector
EXTENSION LINE	<ul style="list-style-type: none"> • Compression: Low-level standard DSC compression for signals above 4K@60 (4:2:0) • 4K@60 (4:4:4) Range with Compression: Up to 100m (330ft) • 4K@60 (4:2:0) Range with No Compression: Up to 100m (330ft) • Full HD (1080p@60Hz) Range with No Compression: Up to 130m (430ft), • Full HD (1080p@60Hz) Range in Ultra-Long Mode: Up to 180m (590ft) • Compliance: HDBaseT 2.0 • Note: Use Kramer shielded cables to achieve optimum extension ranges
VIDEO	<ul style="list-style-type: none"> • Max Bandwidth with Compression: 17.95Gbps (5.98Gbps per graphic channel) • Max Bandwidth with No Compression: 10.2Gbps (3.4Gbps per graphic channel) • Max Resolution with Compression: 3840x2160@60Hz 4:4:4 24bpp • Max Resolution with No Compression: 4096x2160@60Hz 4:2:0 24bpp • Compliance: HDCP 2.2, HDR 10

EXTENDED ETHERNET	Bandwidth: Up to 100Mbps
EXTENDED RS-232	Baud Rate: 300 to 115200
POWER	Consumption: 21.5W
ENVIRONMENTAL CONDITIONS	<ul style="list-style-type: none"> 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
REGULATORY COMPLIANCE (STANDARDS COMPLIANCE)	<ul style="list-style-type: none"> Safety: CE Environmental: Complies with appropriate requirements of RoHs and WEEE
PRODUCT DIMENSIONS	25.00cm x 13.00cm x 2.00cm (9.84" x 5.12" x 0.79") W, D, H
PRODUCT WEIGHT	0.2kg (0.5lbs) approx.
SHIPPING DIMENSIONS	29.30cm x 16.50cm x 5.90cm (11.54" x 6.50" x 2.32") W, D, H
SHIPPING WEIGHT	0.4kg (0.9lbs) approx.

F676-IN2-F34 / F676-IN2-F34

INPUTS/OUTPUTS	2 Fiber Optic: On LC connectors
PORTS	2 RS-232: On a 3-pin terminal block connector
VIDEO	<ul style="list-style-type: none"> Max Bandwidth: 18Gbps Max Resolution: 4K@60 (4:4:4) HDMI Support: 18Gbps (6Gbps per channel) data rate, LPCM 7.1, Dolby True HD, and DTS-HD Content Protection: HDCP 2.2
EXTENSION LINE	<ul style="list-style-type: none"> Optical Fiber: Multi-mode (MM) or single-mode (SM) Optical Module: Kramer 10Gbps SFP+ IEEE 802.3ae compliant modules (MM is included)
MULTI-MODE LINE	<ul style="list-style-type: none"> Compliance: G.651.1 OFNR fiber Max Reach over OM3 MM Fiber: 3km (1.8 miles)
SINGLE-MODE LINE	<ul style="list-style-type: none"> Compliance: G.652D OFNR fiber Max Reach over OS1 SM Fiber: 33km (20.5 miles)
EXTENDED RS-232	Baud Rate: 300 to 115200
USER INTERFACE	Indicators: Optical link LEDs
POWER	Consumption: 9W
ENVIRONMENTAL CONDITIONS	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
REGULATORY COMPLIANCE (STANDARDS COMPLIANCE)	Safety: CE, UL Environmental: RoHs, WEEE
ACCESSORIES	Included: 2 MM SFP+ transceivers

VGAA-IN2-F34 / VGAA-OUT2-F34

PORTS	<ul style="list-style-type: none"> 2 VGA: On 15-pin HD connectors 2 Unbalanced Analog Audio: On 3.5mm mini jack connectors (accessible via C GF/GMAF-30 cables)
BANDWIDTH	450MHz
MAXIMUM RANGE	10m (32ft)

POWER CONSUMPTION	9.5W
ENVIRONMENTAL CONDITIONS	<ul style="list-style-type: none"> 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
REGULATORY COMPLIANCE	<ul style="list-style-type: none"> Safety: CE Environmental: Complies with appropriate requirements of RoHs and WEEE
INCLUDED ACCESSORIES	2 C-GF/GMAF-30 cables
PRODUCT DIMENSIONS	25.20cm x 13.00cm x 2.00cm (9.92" x 5.12" x 0.79") W, D, H
PRODUCT WEIGHT	0.3kg (0.7lbs) approx.
SHIPPING DIMENSIONS	16.50cm x 30.00cm x 6.00cm (6.50" x 11.81" x 2.36") W, D, H
SHIPPING WEIGHT	0.7kg (1.4lbs) approx.

SDIA-IN2-F34

PORTS	<ul style="list-style-type: none"> 2 SDI, 75Ω on BNC connectors 2 unbalanced analog audio on 3.5mm mini jack connectors
TOTAL BANDWIDTH	3Gbps
MAXIMUM RANGE	<ul style="list-style-type: none"> 300m (980ft) — SD 200m (655ft) — HD 1080p 90m (295ft) — 3G 1080p
3D PASS THROUGH	Not supported
POWER CONSUMPTION	6W
ENVIRONMENTAL CONDITIONS	<ul style="list-style-type: none"> 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
REGULATORY COMPLIANCE	<ul style="list-style-type: none"> Safety: CE Environmental: Complies with appropriate requirements of RoHs and WEEE
PRODUCT DIMENSIONS	25.20cm x 13.00cm x 2.00cm (9.92" x 5.12" x 0.79") W, D, H
PRODUCT WEIGHT	0.3kg (0.7lbs) approx.
SHIPPING DIMENSIONS	30.00cm x 16.50cm x 6.00cm (11.81" x 6.50" x 2.36") W, D, H
SHIPPING WEIGHT	0.5kg (1.0lbs) approx.

Default Communication Parameters

RS-232 Control / Protocol 3000			
Baud Rate:	115,200	Parity:	None
Data Bits:	8	Command Format:	ASCII
Stop Bits:	1		
Example: (Switch video input 2 to output 4): #VID 2>4<CR>			
Default Ethernet Parameters			
IP Address:	192.168.1.39	UDP Port #:	50000
Subnet mask:	255.255.0.0	TCP Port #:	5000
Gateway:	192.168.0.1	Default User:	Admin
		Default Password:	Admin

Protocol 3000

Kramer devices can be operated using Kramer Protocol 3000 commands sent via serial or Ethernet ports.

Understanding Protocol 3000

Protocol 3000 commands are a sequence of ASCII letters, structured according to the following.

- **Command format:**

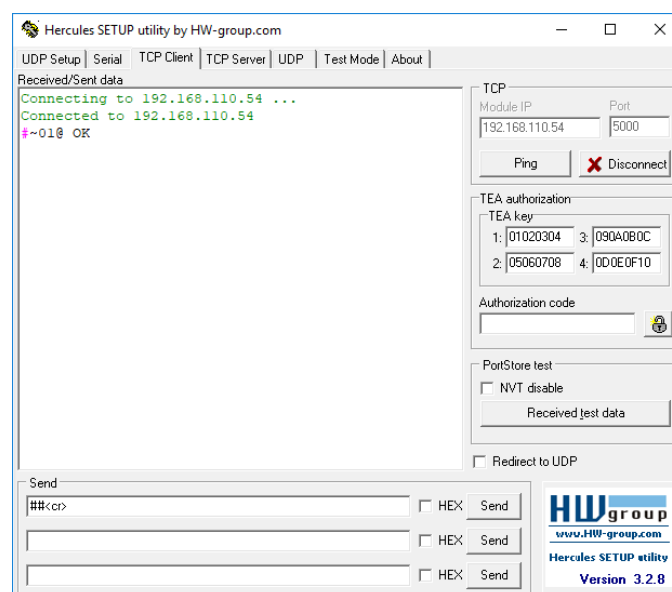
Prefix	Command Name	Constant (Space)	Parameter(s)	Suffix
#	Command	_	Parameter	<CR>

- **Feedback format:**





Prefix	Device ID	Constant	Command Name	Parameter(s)	Suffix
~	nn	@	Command	Parameter	<CR><LF>




- **Command parameters** – Multiple parameters must be separated by a comma (,). In addition, multiple parameters can be grouped as a single parameter using brackets ([and]).
- **Command chain separator character** – Multiple commands can be chained in the same string. Each command is delimited by a pipe character (|).
- **Parameters attributes** – Parameters may contain multiple attributes. Attributes are indicated with pointy brackets (<...>) and must be separated by a period (.).

The command framing varies according to how you interface with the **VS-88UT**. The following figure displays how the # command is framed using terminal communication software (such as Hercules):






Protocol 3000 Commands

Function	Description	Syntax	Parameters/Attributes	Example
#	Protocol handshaking.  Validates the Protocol 3000 connection and gets the machine number.	COMMAND #<CR> FEEDBACK ~nn@_ok<CR><LF>		#<CR>
AUD	Set audio switch state.  When AFV switching mode is active, this command also switches video and unit replies with command -AV.	COMMAND #AUD_in>out_id,in>out_id,...<CR> FEEDBACK ~nn@AUD_in>out_id<CR><LF> ~nn@AUD_in>out_id<CR><LF>	in – Input number or '0' to disconnect output > – Connection character between in and out parameters out_id – Output number 1–34 * for all outputs	Switch embedded audio HDMI™ IN 1 to HDMI OUT 3: #AUD_1>3<CR>
AUD?	Get audio switch state.  When AFV switching mode is active, this command also switches video and unit replies with command -AV.	COMMAND #AUD?_out_id<CR> FEEDBACK ~nn@AUD_in>out_id,in>out_id,...<CR><LF>	in – Input number or '0' to disconnect output > – Connection character between in and out parameters out_id – Output number 1–34 * for all outputs	Get audio switch state for output 1: #AUD?_1<CR>
AUD-LVL	Set volume level.	COMMAND #AUD-LVL_io_mode,io_index,vol_level<CR> FEEDBACK ~nn@AUD-LVL_io_mode,io_index,vol_level<CR><LF>	io_mode – Input/Output 0 – Input 1 – Output io_index – Number that indicates the specific input or output port: 1–34 vol_level – Volume level 0–70	Set AUDIO OUT 2 volume level to 50: #AUD-LVL_1,1,50<CR>
AUD-LVL?	Get volume level.	COMMAND #AUD-LVL?_io_mode,io_index<CR> FEEDBACK ~nn@AUD-LVL_io_mode,io_index,vol_level<CR><LF>	io_mode – Input/Output 0 – Input 1 – Output io_index – Number that indicates the specific input or output port: 1–34 vol_level – Volume level 0–70	Get AUDIO OUT 1 volume level #AUD-LVL?_1,1<CR>
AV	Switch audio and video.	COMMAND #AV_in>out_id,in>out_id,...<CR> FEEDBACK ~nn@AV_in>out_id,in>out_id,...<CR><LF>	in – Number that indicates the specific input: 1–34 0 - disconnect output > – Connection character between in and out parameters out_id – Output number 1–34 * for all outputs	Switch IN 1 to OUT 4: #AV_1>4<CR>
BALANCE	Set balance level.	COMMAND #BALANCE_out_index,balance_level<CR> FEEDBACK ~nn@BALANCE_out_index,balance_level<CR><LF>	out_index – Number that indicates the specific output: 1–34 balance_level – Balance level 0–100 ++ increase current value – decrease current value	Set the speaker output balance to 50: #BALANCE_1,50<CR>
BALANCE?	Get balance level.	COMMAND #BALANCE?_io_index<CR> FEEDBACK ~nn@BALANCE_out_index,balance_level<CR><LF>	io_index – Number that indicates the specific input or output port: 1–34 balance_level – Balance level 0–100	Get balance level for Output 1: #BALANCE?_1<CR>
BASS	Set audio bass level.	COMMAND #BASS_io_index,bass_level<CR> FEEDBACK ~nn@BASS_io_index,bass_level<CR><LF>	io_index – Number that indicates the specific input or output port: 1–34 bass_level – Bass level 0–15 ++ increase current value – decrease current value	Set audio bass level of channel 1 to 5: #BASS_1,5<CR>
BASS?	Get audio bass level.	COMMAND #BASS?_io_index<CR> FEEDBACK ~nn@BASS_io_index,bass_level<CR><LF>	io_index – Number that indicates the specific input or output port: 1–34 bass_level – Bass level 0–15	Get audio bass level of channel 1: #BASS?_1<CR>
BAUD	Set protocol serial port baud rate.  The new defined baud rate is stored in the EEPROM and used when powering up. Default baud rate is 115200 (on factory reset). Only works with devices supporting this command.	COMMAND #BAUD_baud_rate<CR> FEEDBACK ~nn@BAUD_baud_rate<CR><LF> Option 1: ~nn@BAUD_current_baud_rate<CR><LF>	baud_rate – 9600, 19200, 38400, 57600, 115200 current_baud_rate – 9600, 19200, 38400, 57600, 115200, else - current protocol serial port baud rate baud_param – 0 - get the list of supported baud rates baud_rate1,baud_rate2, ... – List of supported baud rates	Set the baud rate to 9600: #BAUD_9600<CR>

Function	Description	Syntax	Parameters/Attributes	Example
BAUD?	<p>Get protocol serial port baud rate. (Option 1 - for current baud rate. Option 2 - for list of supported baud rates).</p> <p> The new defined baud rate is stored in the EEPROM and used when powering up.</p> <p>Default baud rate is 115200 (on factory reset).</p> <p>Only works with devices supporting this command.</p>	<p>COMMAND</p> <p>#BAUD?_<CR></p> <p>#BAUD?_baud_param<CR></p> <p>FEEDBACK</p> <p>~nn@BAUD_baud_rate<CR><LF></p> <p>Option 1:</p> <p>~nn@BAUD_current_baud_rate<CR><LF></p>	<p>baud_rate – 9600, 19200, 38400, 57600, 115200</p> <p>current_baud_rate – 9600, 19200, 38400, 57600, 115200, else - current protocol serial port baud rate</p> <p>baud_param – 0 - get the list of supported baud rates</p> <p>baud_rate1, – Baud_rate2, ... - list of supported baud rates</p>	<p>Get protocol serial port baud rate:</p> <p>#BAUD?_<CR></p>
BRIGHTNESS	<p>Set image brightness per output.</p> <p> Value limits can vary for different module cards.</p> <p>Value is a property of input connected to current output. Changing input source might cause changes in this value (refer device definitions).</p> <p>In devices that enable showing multiple outputs on one display – each in a separate window – this command relates only to the window associated with the output indicated in the out-index parameter.</p>	<p>COMMAND</p> <p>#BRIGHTNESS_out_index,value<CR></p> <p>FEEDBACK</p> <p>~nn@BRIGHTNESS_out_index,value<CR><LF></p>	<p>out_index – Number that indicates the specific output: 1–34</p> <p>value – Brightness value: 1–63</p>	<p>Set brightness for output 1 to 50:</p> <p>#BRIGHTNESS_1,50<CR></p>
BRIGHTNESS?	<p>Get image brightness per output.</p> <p> Value limits can vary for different devices.</p> <p>Value is a property of input connected to current output. Changing input source might cause changes in this value (refer device definitions).</p> <p>In devices that enable showing multiple outputs on one display – each in a separate window – this command relates only to the window associated with the output indicated in the out-index parameter.</p>	<p>COMMAND</p> <p>#BRIGHTNESS?_out_index<CR></p> <p>FEEDBACK</p> <p>~nn@BRIGHTNESS_out_index,value<CR><LF></p>	<p>out_index – Number that indicates the specific output: 1–34</p> <p>value – Brightness value</p>	<p>Get brightness for output 1:</p> <p>#BRIGHTNESS?_1<CR></p>
BUILD-DATE?	<p>Get device build date.</p>	<p>COMMAND</p> <p>#BUILD-DATE?_<CR></p> <p>FEEDBACK</p> <p>~nn@BUILD-DATE_date,time<CR><LF></p>	<p>date – Format: YYYY/MM/DD where YYYY = Year MM = Month DD = Day</p> <p>time – Format: hh:mm:ss where hh = hours mm = minutes ss = seconds</p>	<p>Get the device build date:</p> <p>#BUILD-DATE?<CR></p>

Function	Description	Syntax	Parameters/Attributes	Example
CONTRAST	<p>Set image contrast per output.</p> <p>i Value limits can vary for different devices.</p> <p>Value is a property of input connected to current output. Changing the input source might cause changes in this value (refer to device definitions).</p> <p>In devices that enable showing multiple outputs on one display – each in a separate window – this command relates only to the window associated with the output indicated in the out-index parameter.</p>	<p>COMMAND</p> <pre>#CONTRAST_out_index,value<CR></pre> <p>FEEDBACK</p> <pre>~nn@CONTRAST_out_index,value<CR><LF></pre>	<p>out_index – Number that indicates the specific output: 1–34</p> <p>value – Contrast value: 1–63</p>	<p>Set contrast for Output 1 to 40:</p> <pre>#CONTRAST_1,40<CR></pre>
CONTRAST?	<p>Get image contrast per output.</p> <p>i Value limits can vary for different devices.</p> <p>Value is a property of input connected to current window. Changing the window input source might cause changes in this value (refer to device definitions).</p> <p>In devices that enable showing multiple outputs on one display – each in a separate window – this command relates only to the window associated with the output indicated in the out-index parameter.</p>	<p>COMMAND</p> <pre>#CONTRAST?_out_index<CR></pre> <p>FEEDBACK</p> <pre>~nn@CONTRAST_out_index,value<CR><LF></pre>	<p>out_index – Number that indicates the specific output: 1–34</p> <p>value – Contrast value</p>	<p>Get contrast for Output 1:</p> <pre>#CONTRAST?_1<CR></pre>
CPEDID	<p>Copy EDID data from the output to the input EEPROM.</p> <p>i 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 certain products Safe_mode is an optional parameter. See the HELP command for its availability.</p>	<p>COMMAND</p> <pre>#CPEDID_edid_io,src_id,edid_io,dest_bitmap<CR></pre> <p>or</p> <pre>#CPEDID_edid_io,src_id,edid_io,dest_bitmap,safe_mode<CR></pre> <p>FEEDBACK</p> <pre>~nn@CPEDID_edid_io,src_id,edid_io,dest_bitmap<CR><LF></pre> <pre>~nn@CPEDID_edid_io,src_id,edid_io,dest_bitmap,safe_mode<CR><LF></pre>	<p>edid_io – EDID source type (usually output)</p> <ul style="list-style-type: none"> 0 – Input 1 – Output 2 – Default EDID <p>src_id – Port ID number of chosen input or output source 1–34</p> <ul style="list-style-type: none"> 0 – Default EDID source <p>edid_io – EDID destination type (always input)</p> <ul style="list-style-type: none"> 0 – Input <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.</p> <ul style="list-style-type: none"> 0 – indicates that EDID data is not copied to this destination. 1 – indicates that EDID data is copied to this destination. <p>safe_mode – Safe mode</p> <ul style="list-style-type: none"> 0 – device accepts the EDID as is without trying to adjust 1 – device tries to adjust the EDID (default value if no parameter is sent) 	<p>Copy the EDID data from the Output 1 (EDID source) to the Input:</p> <pre>#CPEDID_1,1,0,0x1<CR></pre> <p>Copy the EDID data from the default EDID source to the Input:</p> <pre>#CPEDID_2,0,0,0x1<CR></pre>
DETAIL-TIMING?	<p>Get detail timing parameters.</p>	<p>COMMAND</p> <pre>#DETAIL-TIMING?_param,in_index<CR></pre> <p>FEEDBACK</p> <pre>~nn@DETAIL-TIMING_param,in_index,value<CR><LF></pre>	<p>param – Detail Timing</p> <ul style="list-style-type: none"> 2 – H-De-Total 5 – V-De-Total <p>in_index – Number that indicates the specific input: 1–34</p> <p>value – Video parameter in Kramer units, minus sign precedes negative values</p>	<p>Get detail timing parameters:</p> <pre>#@DETAIL-TIMING?_2,1<CR></pre>
DISPLAY?	<p>Get output HPD status.</p> <p>i After execution, response is sent to the com port from which the command was received. Response is sent after every change in output HPD status ON to OFF. Response is sent after every change in output HDP status OFF to ON.</p>	<p>COMMAND</p> <pre>#DISPLAY?_out_index<CR></pre> <p>FEEDBACK</p> <pre>~nn@DISPLAY_out_index,status<CR><LF></pre>	<p>out_index – Number that indicates the specific output: 1–34</p> <p>status – HPD status according to signal validation</p> <ul style="list-style-type: none"> 0 – HPD ON to OFF, 1 – HPD OFF to ON, 2 – EDID ready 	<p>Get the output HPD status of Output 1:</p> <pre>#DISPLAY?_1<CR></pre>

Function	Description	Syntax	Parameters/Attributes	Example
EQ-LVL	Set equalization level.	COMMAND #EQ-LVL <u>io_mode</u> , <u>io_index</u> , <u>eq_type</u> , <u>eq_level</u> <CR> FEEDBACK ~nn@EQ-LVL <u>io_mode</u> , <u>io_index</u> , <u>eq_type</u> , <u>eq_level</u> <CR> <LF>	io_mode – Input/Output 0 – Input 1 – Output io_index – Number that indicates the specific input or output port: 1–34 eq_type – Equalizer Types 0 – Bass 2 – Treble eq_level – Equalizer level: 0–15	Set Bass EQ level of the speaker output to 12: #EQ-LVL <u>1</u> , <u>1</u> , <u>0</u> , <u>12</u> <CR>
EQ-LVL?	Get equalization level.	COMMAND #EQ-LVL? <u>io_mode</u> , <u>io_index</u> , <u>eq_type</u> <CR> FEEDBACK ~nn@EQ-LVL <u>io_mode</u> , <u>io_index</u> , <u>eq_type</u> , <u>eq_level</u> <CR> <LF>	io_mode – Input/Output 0 – Input 1 – Output io_index – Number that indicates the specific input or output port: 1–34 eq_type – Equalizer Types 0 – Bass 2 – Treble eq_level – Equalizer level: 0–15	Get Bass EQ level of the speaker output to 12: #EQ-LVL? <u>1</u> , <u>2</u> <CR>
ETH-PORT	Set Ethernet port protocol. ⓘ If the port number you enter is already in use, an error is returned. The port number must be within the following range: 0-(2 ¹⁶ -1).	COMMAND #ETH-PORT <u>port_type</u> , <u>port_id</u> <CR> FEEDBACK ~nn@ETH-PORT <u>port_type</u> , <u>port_id</u> <CR> <LF>	port_type – TCP/UDP port_id – TCP/UDP port number: 1 – 65535	Set the Ethernet port protocol for TCP to port 12457: #ETH-PORT <u>0</u> , <u>12457</u> <CR>
ETH-PORT?	Get Ethernet port protocol.	COMMAND #ETH-PORT? <u>port_type</u> <CR> FEEDBACK ~nn@ETH-PORT <u>port_type</u> , <u>port_id</u> <CR> <LF>	port_type – TCP/UDP port_id – TCP / UDP port number: 1 – 65535	Get the Ethernet port protocol for UDP: #ETH-PORT? <u>TCP</u> <CR>
EXT-CFG-FILE?	Get configuration file status.	COMMAND #EXT-CFG-FILE? <CR> FEEDBACK ~nn@EXT-CFG-FILE <u>status</u> <CR> <LF>	status – 0 – configuration.json is not ready 1 – configuration.json is ready 2 – updating matrix via configuration file	Get the configuration file status: #EXT-CFG-FILE? <u>1</u> <CR>
EXT-ETH-PORT	Set Ethernet port number for a specific module card. ⓘ If the module card does not support Ethernet functions, ERR 034 is returned.	COMMAND #EXT-ETH-PORT <u>port_type</u> , <u>slot_id</u> , <u>port_id</u> <CR> FEEDBACK ~nn@EXT-ETH-PORT <u>port_type</u> , <u>slot_id</u> , <u>port_id</u> <CR> <LF>	port_type – TCP/UDP slot_id – Module ID (slot number): 0 or 100 – control module 1–17 port_id – TCP/UDP port number: 1 – 65535	Set the Ethernet TCP port number for the card in slot 1 to 12457: #EXT-ETH-PORT <u>TCP</u> , <u>1</u> , <u>12457</u> <CR>
EXT-ETH-PORT?	Get Ethernet port number for a specific module card. ⓘ If the module card does not support Ethernet functions, ERR 034 is returned.	COMMAND #EXT-ETH-PORT? <u>port_type</u> , <u>slot_id</u> <CR> FEEDBACK ~nn@EXT-ETH-PORT? <u>port_type</u> , <u>slot_id</u> , <u>port_id</u> <CR> <LF>	port_type – TCP/UDP slot_id – Module ID (slot number): 0 or 100 – control module 1–17 port_id – TCP/UDP port number: 1 – 65535	Get the Ethernet TCP port number for the card in slot 1: #EXT-ETH-PORT? <u>TCP</u> , <u>1</u> <CR>
EXT-FAN-LEVEL	Set fan operation speed and mode.	COMMAND #EXT-FAN-LEVEL <u>fan_index</u> , <u>fan_speed</u> , <u>fan_mode</u> <CR> FEEDBACK ~nn@EXT-FAN-LEVEL <u>fan_index</u> , <u>fan_speed</u> , <u>fan_mode</u> , <u>fan_status</u> <CR> <LF>	fan_index – number that indicates the fan being set: 1–8 – Chassis fans fan_speed – 0–4 fan_mode – 0 – Fan operation automatically controlled based on the device temperature 1 – Continuous operation ⓘ The default is automatic. If a fan is set to continuous and the device is reset, the fan returns to automatic. fan_status – OK WARN	Set fan #1 speed to 2 and mode to continuous: #EXT-FAN-LEVEL <u>1</u> , <u>2</u> , <u>1</u> <CR>
EXT-INFO-IO?	Get a list of ports according to signal type (video or audio) and direction (inputs or outputs).	COMMAND #EXT-INFO-IO? <u>signal_type</u> , <u>io_mode</u> <CR> FEEDBACK ~nn@Device <u>signal_type</u> , <u>io_mode</u> , <u>io_index</u> , <u>io_index</u> , ... <CR> <LF>	signal_type – 1 – video 2 – audio io_mode – Input/Output 0 – Input 1 – Output io_index – Number that indicates the specific input or output port: 1–34	Get the list of video input ports: #EXT-INFO-IO? <u>1</u> , <u>0</u> <CR>
EXT-NET-MAC?	Get the MAC address for a module card.	COMMAND #EXT-NET-MAC? <u>slot_id</u> <CR> FEEDBACK ~nn@EXT-NET-MAC? <u>slot_id</u> , <u>mac_address</u> <CR> <LF>	slot_id – Module ID (slot number): 0 or 100 – control module 1–17 mac_address – Unique MAC address. Format: XX-XX-XX-XX-XX-XX (where X is a hex digit)	Get the MAC address for the card in slot 1: #EXT-NET-MAC? <u>1</u> <CR>
EXT-PING	Ping the IP address.	COMMAND #EXT-PING <u>ip_address</u> <CR> FEEDBACK ~nn@EXT-PING <u>ping_information</u> <CR> <LF>	ip_address – Format: xxx.xxx.xxx.xxx	Get the gateway IP address: #EXT-PING <u>192.168.1.39</u> <CR>

Function	Description	Syntax	Parameters/Attributes	Example
EXT-POE	Enable/disable the +48V input for the PS-4812 PoE power supply add-on.  Only the input for the PS-4812 PoE power supply add-on can be enabled/disabled. The module card ports do not.	COMMAND #EXT-POE_0,enable_value<CR> FEEDBACK ~nn@EXT-POE_0,enable_value,48v_status<CR><LF>	port_id – 0 – 48V input connector enable_value – ON – 48V input is enabled OFF – 48V input is disabled 48v_status – Operational status of 48V input: OK – Receiving power WARN – Not working POWERDOWN – Enabled, but receiving power	Enable the 48V input for the PS-4812 PoE power supply add-on: #EXT-POE_0,ON<CR>
EXT-POE?	Get the PoE power operational status for one of the module card ports or for the +48V input for the PS-4812 PoE power supply add-on.	COMMAND #EXT-POE?_port_id<CR> FEEDBACK ~nn@EXT-POE?_port_id,enable_value,48v_status<CR><LF>	port_id – 0 – 48V connector 1–34 enable_value – ON – 48V input is enabled OFF – 48V input is disabled 48v_status – Operational status of 48V input: OK – Receiving power WARN – Not working POWERDOWN – Disabled, but receiving power	Get the enable/disable status of the 48V input for port 2: #EXT-POE?2_<CR>
EXT-PSU?	Get the status of the power supply unit.	COMMAND #EXT-PSU?_ps_id<CR> FEEDBACK ~nn@EXT-PSU?_ps_id,plug_status,ps_status<CR><LF>	ps_id – Power supply id number: 1–2 * – both PSUs plug_status – Physical connection status of the power supply: ON – Connected OFF – Disconnected ps_status – Power status of the power supply: OK – powered properly WARN – not powered properly and may need to be checked OFFLINE – not receiving power	Get the status of power supply 1: #EXT-PSU?_1<CR>
EXT-PSU-BUZZER	Enable/disable PSU warning buzzer.	COMMAND #EXT-PSU-BUZZER_enabled_status<CR> FEEDBACK ~nn@EXT-PSU-BUZZER_enabled_status<CR><LF>	enabled_status – 0 – Disable 1 – Enable	Enable the PSU warning buzzer: #EXT-PSU-BUZZER_1<CR>
EXT-PSU-BUZZER?	Get the enable/disable status of the PSU warning buzzer.	COMMAND #EXT-PSU-BUZZER?_<CR> FEEDBACK ~nn@EXT-PSU-BUZZER?_enabled_status<CR><LF>	enabled_status – 0 – Disabled 1 – Enabled	Get the enable/disable status of the PSU warning buzzer: #EXT-PSU-BUZZER?_<CR>
EXT-VOLT?	Get the voltage of the board.	COMMAND #EXT-VOLT?_slot_id<CR> FEEDBACK ~nn@EXT-VOLT?_slot_id: voltage_checkpoint_id/voltage_checkpoint_total : stdand value : actual value : status<CR><LF>	slot_id – Module ID (slot number): 1–17 voltage_checkpoint_id – ID number of current voltage detection point, starting from 1 voltage_checkpoint_total – Nnumber of voltage detection points stdand value – Hardware design value actual value – Current value status – WARN OK	Get the voltage for the card in slot 1: #EXT-VOLT?_slot_id<CR>
FACTORY	Reset device to factory default configuration.  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.	COMMAND #FACTORY<CR> FEEDBACK ~nn@FACTORY_ok<CR><LF>		Reset the device to factory default configuration: #FACTORY<CR>
FPGA-VER?	Get current FPGA version.	COMMAND #FPGA-VER?_fpga_id<CR> FEEDBACK ~nn@FPGA-VER?_fpga_id,expected_ver,ver<CR><LF>	fpga_id – FPGA id expected_ver – Expected FPGA version for current firmware ver – Actual FPGA version	Get current FPGA version: #FPGA-VER?_1<CR>
GEDID	Get EDID support on certain input/output.  For old devices that do not support this command, ~nn@ERR 002<CR><LF> is received.	COMMAND #GEDID_io_mode,in_index<CR> FEEDBACK ~nn@GEDID_io_mode,in_index,size<CR><LF>	io_mode – Input/Output 0 – Input 1 – Output 2 – Default EDID io_index – Number that indicates the specific input or output port: 1–34 size – Size of data to be sent from device, 0 means no EDID support	Get EDID support information for input 1: #GEDID_111<CR>
GET	Get file contents.	COMMAND #GET_file_name<CR> FEEDBACK Multi-line: ~nn@GET_file_name,file_size_ready<CR><LF> contents ~nn@GET_file_name_ok<CR><LF>	file_name – Name of file from which to get contents, includes: CONFIGURATION.JSON CONFIG_LOG.JSON METADATA.JSON, MESSAGES contents – Byte stream of file contents file_size – Size of file (device sends it in response to give user a chance to get ready)	#GET_file_response.dat<CR>







Function	Description	Syntax	Parameters/Attributes	Example
HDCP-MOD	<p>Set HDCP mode.</p> <p>i Set HDCP working mode on the device input:</p> <p>HDCP supported - HDCP_ON [default].</p> <p>HDCP not supported - HDCP OFF.</p> <p>HDCP support changes following detected sink - MIRROR OUTPUT.</p>	<p>COMMAND</p> <pre>#HDCP-MOD_{in_index},mode<CR></pre> <p>FEEDBACK</p> <pre>~nn@HDCP-MOD_{in_index},mode<CR><LF></pre>	<p>in_index – Number that indicates the specific input: 1–34</p> <p>mode – HDCP mode: 0 – HDCP Off 1 – HDCP On</p>	<p>Set the input HDCP-MODE of IN 1 to Off:</p> <pre>#HDCP-MOD_{1},0<CR></pre>
HDCP-MOD?	<p>Get HDCP mode.</p> <p>i Set HDCP working mode on the device input:</p> <p>HDCP supported - HDCP_ON [default].</p> <p>HDCP not supported - HDCP OFF.</p> <p>HDCP support changes following detected sink - MIRROR OUTPUT.</p>	<p>COMMAND</p> <pre>#HDCP-MOD?_{in_index}<CR></pre> <p>FEEDBACK</p> <pre>~nn@HDCP-MOD_{in_index},mode<CR><LF></pre>	<p>in_index – Number that indicates the specific input: 1–34</p> <p>mode – HDCP mode: 0 – HDCP Off 3 – HDCP defined according to the connected output</p>	<p>Get the input HDCP-MODE of IN 1 HDMI:</p> <pre>#HDCP-MOD?_{1}<CR></pre>
HDCP-STAT?	<p>Get HDCP signal status.</p> <p>i io_mode =1 – get the HDCP signal status of the sink device connected to the specified output.</p> <p>io_mode =0 – get the HDCP signal status of the source device connected to the specified input.</p>	<p>COMMAND</p> <pre>#HDCP-STAT?_{io_mode},in_index<CR></pre> <p>FEEDBACK</p> <pre>~nn@HDCP-STAT_{io_mode},in_index,status<CR><LF></pre>	<p>io_mode – Input/Output 0 – Input 1 – Output</p> <p>in_index – Number that indicates the specific input: 1–34</p> <p>status – Signal encryption status - valid values On/Off 0 – HDCP Off 1 – HDCP On</p>	<p>Get the output HDCP-STATUS of IN 1:</p> <pre>#HDCP-STAT?_{0},1<CR></pre>
HELP	<p>Get command list or help for specific command.</p>	<p>COMMAND</p> <pre>#HELP<CR></pre> <p>FEEDBACK</p> <pre>#HELP_{cmd_name}<CR></pre> <p>FEEDBACK</p> <p>1. Multi-line: ~nn@Device_{cmd_name},{_cmd_name}...<CR><LF></p> <p>To get help for command use: HELP (COMMAND_NAME)<CR><LF> ~nn@HELP_{cmd_name}:<CR><LF></p> <pre>description<CR><LF></pre> <pre>USAGE: usage<CR><LF></pre>	<p>cmd_name – Name of a specific command</p>	<p>Get the command list:</p> <pre>#HELP<CR></pre> <p>To get help for HDCP-MOD: HELP_{hdcp-mod}<CR></p>
H-PHASE	<p>Set H-phase.</p>	<p>COMMAND</p> <pre>#H-PHASE_{io_mode},io_index,value<CR></pre> <p>FEEDBACK</p> <pre>~nn@H-PHASE_{io_mode},io_index,value<CR><LF></pre>	<p>io_mode – Input/Output 1 – Input 2 – Output</p> <p>io_index – Number that indicates the specific input or output port: 1–34</p> <p>value – Video parameter in Kramer units: 0–63 ++ increase current value – decrease current value</p>	<p>Set H-phase:</p> <pre>#H-PHASE_{1},1,1<CR></pre>
H-PHASE?	<p>Get H-phase.</p>	<p>COMMAND</p> <pre>#H-PHASE?_{io_mode},io_index<CR></pre> <p>FEEDBACK</p> <pre>~nn@H-PHASE_{io_mode},io_index,value<CR><LF></pre>	<p>io_mode – Input/Output 1 – Input 2 – Output</p> <p>io_index – Number that indicates the specific input or output port: 1–34</p> <p>value – Video parameter in Kramer units, minus sign precedes negative values</p>	<p>Get H-phase:</p> <pre>#H-PHASE?_{1},1<CR></pre>
HW-TEMP?	<p>Get temperature of a specific region of the hardware.</p> <p>i The Get command is not available for all parts of the hardware, and is device specific.</p>	<p>COMMAND</p> <pre>#HW-TEMP?_{region_id}<CR></pre> <p>FEEDBACK</p> <pre>~nn@HW-TEMP_{region_id},temperature<CR><LF></pre>	<p>region_id – ID of the region for which to get the temperature 0 – Control Board 1–17 – Module card slot number * – Matrix</p> <p>temperature – Temperature in Celsius of the HW region, rounded down to the closest integer</p>	<p>Get temperature of a specific region of the hardware:</p> <pre>#HW-TEMP?_{1}<CR></pre>
INFO-IO?	<p>Get in/out count.</p>	<p>COMMAND</p> <pre>#INFO-IO?_{in}<CR></pre> <p>FEEDBACK</p> <pre>~nn@INFO-IO_{IN}_{in_count},OUT_{out_count}<CR><LF></pre>	<p>in_count – Number of inputs in the unit out_count – Number of outputs in the unit</p>	<p>Get inputs count:</p> <pre>#INFO-IO?_{in}<CR></pre>
INFO-PRST?	<p>Get maximum preset count.</p> <p>i In most units, video and audio presets with the same number are stored and recalled together by commands #PRST-STO and #PRST-RCL.</p>	<p>COMMAND</p> <pre>#INFO-PRST?_{vid}<CR></pre> <p>FEEDBACK</p> <pre>~nn@INFO-PRST_{vid}_{video_preset_count},aud_{audio_preset_count}<CR><LF></pre>	<p>video_preset_count – Maximum number of video presets in the unit audio_preset_count – Maximum number of audio presets in the unit</p>	<p>Get number of video and audio presets:</p> <pre>#INFO-PRST?_{vid}<CR></pre>

Function	Description	Syntax	Parameters/Attributes	Example												
LDEDID	<p>Write EDID data from external application to device.</p> <p>i When the unit receives the LDEDID command it replies with READY and enters the special EDID packet wait mode. In this mode the unit can receive only packets and not regular protocol commands.</p> <p>If the unit does not receive correct packets for 30 seconds or is interrupted for more than 30 seconds before receiving all packets, it sends timeout error <code>~nn@LDEDID_err01<CR><LF></code> and returns to the regular protocol mode. If the unit received data that is not a correct packet, it sends the corresponding error and returns to the regular protocol mode.</p>	<p>COMMAND</p> <p>Multi-step syntax</p> <p>FEEDBACK</p> <p>Step 1: <code>#LDEDID_edid_io,dest_bitmask,edid_size,safe_mode<CR></code></p> <p>Response 1: <code>~nn@LDEDID_edid_io,dest_bitmask,edid_size,safe_mode_ready<CR><LF></code></p> <p>or <code>~nn@LDEDID_errnn<CR><LF></code></p> <p>Step 2: If ready was received, send EDID_DATA</p> <p>Response 2: <code>~nn@LDEDID_edid_io,dest_bitmask,edid_size,safe_mode_ok<CR><LF></code></p> <p>or <code>~nn@LDEDID_errnn<CR><LF></code></p>	<p>edid_io – EDID destination type (always input)</p> <p>0 – Input</p> <p>dest_bitmask – Bitmap representing destination IDs. Format: 0x*****, where * is ASCII presentation of hex digit. The binary presentation of this number is a bit mask for destinations. Setting '1' means EDID data has to be copied to this destination</p> <p>edid_size – EDID data size</p> <p>safe_mode – Safe mode</p> <p>0 – Device accepts the EDID as is without trying to adjust</p> <p>1 – Device tries to adjust the EDID</p> <p>edid_data – Data in protocol packets</p> <p>Using the Packet Protocol</p> <p>Send a command: LDRV, LOAD, IROUT, LDEDID</p> <p>Receive Ready or ERR###</p> <p>If Ready:</p> <ol style="list-style-type: none"> Send a packet, Receive OK on the last packet, Receive OK for the command <p>Packet structure:</p> <p>Packet ID (1, 2, 3...) (2 bytes in length)</p> <p>Length (data length + 2 for CRC) – (2 bytes in length)</p> <p>Data (data length -2 bytes)</p> <p>CRC – 2 bytes</p> <table border="1"> <thead> <tr> <th>01</th> <th>02</th> <th>03</th> <th>04</th> <th>05</th> <th></th> </tr> </thead> <tbody> <tr> <td>Packet ID</td> <td>Length</td> <td>Data</td> <td>CRC</td> <td></td> <td></td> </tr> </tbody> </table> <p>5. Response: <code>~nnnn_ok<CR><LF></code> (Where NNNN is the received packet ID in ASCII hex digits.)</p>	01	02	03	04	05		Packet ID	Length	Data	CRC			<p>Write the EDID data from an external application to the HDMI In 1 input without adjustment attempts: <code>#LDEDID_0,0x1,2340,0<CR></code></p> <p>Write the EDID data from an external application to HDMI In 1 and PC In inputs with adjustment attempts: <code>#LDEDID_0,0x5,2340,1<CR></code></p>
01	02	03	04	05												
Packet ID	Length	Data	CRC													
LOAD	Load file to device.	<p>COMMAND</p> <p><code>#LOAD_file_name,size<CR></code></p> <p>FEEDBACK</p> <p>Data sending negotiation: * Device - <code>~01@LOAD_file_name,size_ready<CR><LF></code></p> <p>* End User (+Device)- Send file in Protocol Packets * Device - <code>~01@LOAD_file_name,size_ok<CR><LF></code></p>	<p>file_name – Name of file to save on device</p> <p>size – Size of file data that is sent</p> <p>Using the Packet Protocol</p> <p>Send a command: LDRV, LOAD, IROUT, LDEDID</p> <p>Receive Ready or ERR###</p> <p>If Ready:</p> <ol style="list-style-type: none"> Send a packet, Receive OK on the last packet, Receive OK for the command <p>Packet structure:</p> <p>Packet ID (1, 2, 3...) (2 bytes in length)</p> <p>Length (data length + 2 for CRC) – (2 bytes in length)</p> <p>Data (data length -2 bytes)</p> <p>CRC – 2 bytes</p> <table border="1"> <thead> <tr> <th>01</th> <th>02</th> <th>03</th> <th>04</th> <th>05</th> <th></th> </tr> </thead> <tbody> <tr> <td>Packet ID</td> <td>Length</td> <td>Data</td> <td>CRC</td> <td></td> <td></td> </tr> </tbody> </table> <p>Response: <code>~nnnn_ok<CR><LF></code> (Where NNNN is the received packet ID in ASCII hex digits.)</p>	01	02	03	04	05		Packet ID	Length	Data	CRC			<p>Load the file_response.dat file to the device: <code>#LOAD_file_response.dat,5360<CR></code></p>
01	02	03	04	05												
Packet ID	Length	Data	CRC													
LOAD	Load file to device.	<p>COMMAND</p> <p><code>#LOAD_file_name,size<CR></code></p> <p>FEEDBACK</p> <p>Data sending negotiation: * Device - <code>~01@LOAD_file_name,size_ready<CR><LF></code></p> <p>* End User (+Device)- Send file in Protocol Packets * Device - <code>~01@LOAD_file_name,size_ok<CR><LF></code></p>	<p>file_name – Name of file to save on device</p> <p>size – Size of file data that is sent</p>	<p>Load the file_response.dat file to the device: <code>#LOAD_file_response.dat,5360<CR></code></p>												
LOCK-FP	Lock the front panel.	<p>COMMAND</p> <p><code>#LOCK-FP_lock/unlock<CR></code></p> <p>FEEDBACK</p> <p><code>~nn@LOCK-FP_lock/unlock<CR><LF></code></p>	<p>lock/unlock – On/Off</p> <p>0 – unlock front panel</p> <p>1 – lock front panel</p>	<p>Unlock front panel: <code>#LOCK-FP_0<CR></code></p>												
LOCK-FP?	Get the front panel lock state.	<p>COMMAND</p> <p><code>#LOCK-FP?_<CR></code></p> <p>FEEDBACK</p> <p><code>~nn@LOCK-FP_lock/unlock<CR><LF></code></p>	<p>lock/unlock – On/Off</p> <p>0 – unlock front panel</p> <p>1 – lock front panel</p>	<p>Get the front panel lock state: <code>#LOCK-FP?_<CR></code></p>												
MIX	Set audio MIX.	<p>COMMAND</p> <p><code>#MIX_out_index,mix_mode<CR></code></p> <p>FEEDBACK</p> <p><code>~nn@MIX_out_index,mix_mode<CR><LF></code></p>	<p>out_index – Number that indicates the specific output: 1–34</p> <p>mix_mode – On/Off</p> <p>0 – Off</p> <p>1 – On</p>	<p>Set audio MIX: <code>#MIX_1,1<CR></code></p>												
MIX?	Get audio MIX.	<p>COMMAND</p> <p><code>#MIX?_out_index<CR></code></p> <p>FEEDBACK</p> <p><code>~nn@MIX_out_index,mix_mode<CR><LF></code></p>	<p>out_index – Number that indicates the specific output: 1–34</p> <p>mix_mode – On/Off</p> <p>0 – Off</p> <p>1 – On</p>	<p>Get audio MIX for output 1: <code>#MIX?_1<CR></code></p>												
MODEL?	Get device model.	<p>COMMAND</p> <p><code>#MODEL?_<CR></code></p> <p>FEEDBACK</p> <p><code>~nn@MODEL_model_name<CR><LF></code></p>	<p>model_name – String of up to 19 printable ASCII chars</p>	<p>Get the device model: <code>#MODEL?_<CR></code></p>												

Function	Description	Syntax	Parameters/Attributes	Example
MODULE-INFO?	Get module information.	COMMAND #MODULE-INFO?_slot_id<CR> FEEDBACK ~nn@MODULE-INFO,_slot_id,m_direction,channel_start,channel_end,mod_type,fw_ver,upgradable,mod_status<CR><LF>	slot_id – Module ID (slot number): 0 – control module 1–17 – I/O cards 200 – test module 201 – keyboard software application 202 – keyboard hardware m_direction – Transmission direction 0 – input 1 – output 2 – OS system or applications in the control board or unknown channel_start – Start ID of the port in the device 1–34 channel_end – End ID of the port in the device 1–34 mod_type – Module type 18 – VGAA 32 – SDIA 47 – Control module 49 – H2 50 – H2A 57 – DTArC2 59 – DTArD2 203 – Sub-function for control board. 204 – InnerEthSwitcher in the matrix 205 – Power and fan monitor in the matrix 206 – Main board in the matrix fw_ver – Module firmware version XX.XX.XXXX where the digit groups are: major.minor.build version upgradable – Indicates whether the firmware can be upgraded 0 – not upgradable 1 – upgradable mod_status – Module status 0 – OK 1 – unknown error 2 – no communication 3 – module missing or offline	Get information for the module in slot 8: #MODULE-INFO?_8<CR>
MODULE-TYPE?	Get module type.	COMMAND #MODULE-TYPE?_module_id<CR> FEEDBACK ~nn@MODULE-TYPE,_module_id,mod_type,mod_status<CR><LF>	module_id – Number that identifies the module 1–17 mod_type – Module type 18 – VGAA 32 – SDIA 47 – Control module 49 – H2 50 – H2A 57 – DTArC2 59 – DTArD2 mod_status – Module status 0 – OK 1 – Unknown error 2 – No communication 3 – Module missing or offline	Get module type: #MODULE-TYPE?_1<CR>
MODULE-VER?	Get module version. <i>i</i> Some devices do not set the new machine number until the device is restarted. Some devices can change the machine number only from DIP-switches.	COMMAND #MODULE-VER?_module_id<CR> FEEDBACK ~nn@MODULE-VER,_module_id,fw_version<CR><LF>	module_id – Number that identifies the module 0 – control module 1–17 – I/O cards 220 – Linux OS fw_version – XX.XX.XXXX where the digit groups are: major.minor.build version	Get module version: #MODULE-VER?_1<CR>
MUTE	Set audio mute.	COMMAND #MUTE_out_index,mute_mode<CR> FEEDBACK ~nn@MUTE_out_index,mute_mode<CR><LF>	out_index – Number that indicates the specific output: 1–34 mute_mode – On/Off 0 – Off 1 – On	Set Output 1 to mute: #MUTE_1,1<CR>
MUTE?	Get audio mute.	COMMAND #MUTE?_out_index<CR> FEEDBACK ~nn@MUTE_out_index,mute_mode<CR><LF>	out_index – Number that indicates the specific output: 1–34 mute_mode – On/Off 0 – Off 1 – On	Get mute status of output 1 #MUTE?_1<CR>
NAME	Set machine (DNS) name. <i>i</i> 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).	COMMAND #NAME_machine_name<CR> FEEDBACK ~nn@NAME_machine_name<CR><LF>	machine_name – String of up to 15 alphanumeric chars (can include hyphen, not at the beginning or end)	Set the DNS name of the device to room-442: #NAME_room-442<CR>

Function	Description	Syntax	Parameters/Attributes	Example
NAME?	Get machine (DNS) name. <p>i 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).</p>	COMMAND #NAME?_<CR> FEEDBACK ~nn@NAME_machine_name<CR><LF>	machine_name – String of up to 15 alphanumeric chars (can include hyphen, not at the beginning or end)	Get the DNS name of the device: #NAME?_<CR>
NAME-RST	Reset machine (DNS) name to factory default. <p>i Factory default of machine (DNS) name is "KRAMER_" + 4 last digits of device serial number.</p>	COMMAND #NAME-RST<CR> FEEDBACK ~nn@NAME-RST_ok<CR><LF>		Reset the machine name (S/N last digits are 0102): #NAME-RST_kramer_0102<CR>
NET-CONFIG	Set a network configuration. <p>i If the gateway address is not compliant to the subnet mask used for the host IP, the command returns an error. Subnet and gateway compliancy specified by RFC950.</p>	COMMAND #NET-CONFIG_netw_id,net_ip,net_mask,gateway<CR> FEEDBACK ~nn@NET-CONFIG_netw_id,net_ip,net_mask,gateway<CR><LF>	netw_id – Network ID—the device network interface 0 or 100 – control module 1–17 – module cards net_ip – Network IP net_mask – Network mask gateway – Network gateway	Set the device network parameters to IP address 192.168.113.10, net mask 255.255.0.0, and gateway 192.168.0.1: #NET-CONFIG_0,192.168.113.10,255.255.0.0,192.168.0.1<CR>
NET-CONFIG?	Get a network configuration.	COMMAND #NET-CONFIG?_netw_id<CR> FEEDBACK ~nn@NET-CONFIG_netw_id,net_ip,net_mask,gateway<CR><LF>	netw_id – Network ID—the device network interface 0 or 100 – control module 1–17 – module cards net_ip – Network IP net_mask – Network mask gateway – Network gateway	Get network configuration for the module card in slot 2: #NET-CONFIG?_2<CR>
NET-DHCP	Set DHCP mode. <p>i Only 1 is relevant for the mode value. To disable DHCP, the user must configure a static IP address for the device.</p> <p>Connecting Ethernet to devices with DHCP may take more time in some networks.</p> <p>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.</p> <p>For proper settings consult your network administrator.</p>	COMMAND #NET-DHCP_dhcp_state<CR> FEEDBACK ~nn@NET-DHCP_dhcp_state<CR><LF>	dhcp_state – 0 – Do not use DHCP. Use the IP set by the factory or using the NET-CONFIG or NET-IP command. 1 – Try to use DHCP. If unavailable, use the IP address set by the factory or the NET-CONFIG or NET-IP command.	Enable DHCP mode for port 1, if available: #NET-DHCP_1,1<CR>
NET-DHCP?	Get DHCP mode.	COMMAND #NET-DHCP?_<CR> FEEDBACK ~nn@NET-DHCP_dhcp_mode<CR><LF>	dhcp_mode – 0 – Do not use DHCP. Use the IP set by the factory or using the NET-CONFIG or NET-IP command. 1 – Try to use DHCP. If unavailable, use the IP set by the factory or using the NET-CONFIG or NET-IP command.	Get DHCP mode for port 1: #NET-DHCP?_1<CR>
NET-GATE	Set gateway IP. <p>i A network gateway connects the device via another network and maybe over the Internet. Be careful of security issues. For proper settings consult your network administrator.</p>	COMMAND #NET-GATE_ip_address<CR> FEEDBACK ~nn@NET-GATE_ip_address<CR><LF>	ip_address – Format: xxx.xxx.xxx.xxx	Set the gateway IP address to 192.168.0.1: #NET-GATE_192.168.0.001<CR>
NET-GATE?	Get gateway IP. <p>i A network gateway connects the device via another network and maybe over the Internet. Be careful of security issues. For proper settings consult your network administrator.</p>	COMMAND #NET-GATE?_<CR> FEEDBACK ~nn@NET-GATE_ip_address<CR><LF>	ip_address – Format: xxx.xxx.xxx.xxx	Get the gateway IP address: #NET-GATE?_<CR>

Function	Description	Syntax	Parameters/Attributes	Example
NET-IP	Set IP address. ⓘ For proper settings consult your network administrator.	COMMAND #NET-IP <u>ip_address</u> <CR> FEEDBACK ~nn@NET-IP <u>ip_address</u> <CR><LF>	ip_address – Format: xxx.xxx.xxx.xxx	Set the IP address to 192.168.1.39: #NET-IP <u>192.168.001.039</u> <CR>
NET-IP?	Get IP address.	COMMAND #NET-IP? <u><CR></u> FEEDBACK ~nn@NET-IP <u>ip_address</u> <CR><LF>	ip_address – Format: xxx.xxx.xxx.xxx	Get the IP address: #NET-IP? <u><CR></u>
NET-MAC?	Get MAC address.	COMMAND #NET-MAC? <u><CR></u> FEEDBACK ~nn@NET-MAC <u>mac_address</u> <CR><LF>	mac_address – Unique MAC address. Format: XX-XX-XX-XX-XX-XX where X is hex digit	#NET-MAC? <u>id</u> <CR>
NET-MASK	Set subnet mask. ⓘ For proper settings consult your network administrator.	COMMAND #NET-MASK <u>net_mask</u> <CR> FEEDBACK ~nn@NET-MASK <u>net_mask</u> <CR><LF>	net_mask – Format: xxx.xxx.xxx.xxx	Set the subnet mask to 255.255.0.0: #NET-MASK <u>255.255.00.000</u> <CR>
NET-MASK?	Get subnet mask.	COMMAND #NET-MASK? <u><CR></u> FEEDBACK ~nn@NET-MASK <u>net_mask</u> <CR><LF>	net_mask – Format: xxx.xxx.xxx.xxx	Get the subnet mask: #NET-MASK? <u><CR></u>
PORT-DIRECTION?	Get port direction for video port. ⓘ This command gets the direction of a bidirectional port.	COMMAND #PORT-DIRECTION? <u>port_index</u> <CR> FEEDBACK ~nn@PORT-DIRECTION <u>port_index,direction</u> <CR><LF> >	port_index – Port number 1–34 direction – 0 – Input 1 – Output	Get port direction for port 2: #PORT-DIRECTION? <u>5</u> <CR>
PROT-VER?	Get device protocol version.	COMMAND #PROT-VER? <u><CR></u> FEEDBACK ~nn@PROT-VER <u>3000:version</u> <CR><LF>	version – XX.XX where X is a decimal digit	Get the device protocol version: #PROT-VER? <u><CR></u>
PRST-AUD?	Get audio connections from saved preset. ⓘ Video and audio presets with the same number are stored and recalled together by commands #PRST-STO and #PRST-RCL.	COMMAND #PRST-AUD? <u>presets,out_index</u> <CR> #PRST-AUD? <u>presets,*</u> <CR> FEEDBACK ~@PRST-AUD <u>presets,in_index>out_index</u> <CR><LF> ~@PRST-AUD <u>presets,in_index>1,in_index>2,in_index>3,...</u> <CR><LF>	presets – Preset number in_index – Number that indicates the specific input: 1 – N (N= the total number of inputs) 0 – Output is disconnected > – Connection character between in and out parameters out_index – Number that indicates the specific output: 1 – 34 * – All outputs	Get audio connection for OUT 3 from saved preset 1: #PRST-AUD? <u>1,3</u> <CR>
PRST-LST?	Get saved preset list. ⓘ Video and audio presets with the same number are stored and recalled together by commands #PRST-STO and #PRST-RCL.	COMMAND #PRST-LST? <u><CR></u> FEEDBACK ~nn@PRST-LST <u>presets,presets,...</u> <CR><LF>	presets – Preset number	Show preset list: #PRST-LST? <u><CR></u>
PRST-RCL	Recall saved preset list. ⓘ Video and audio presets with the same number are stored and recalled together by commands #PRST-STO and #PRST-RCL.	COMMAND #PRST-RCL <u>presets</u> <CR> FEEDBACK ~nn@PRST-RCL <u>presets</u> <CR><LF>	presets – Preset number	Recall preset 1: #PRST-RCL <u>1</u> <CR>
PRST-STO	Store current connections, volumes, and modes in preset. ⓘ Video and audio presets with the same number are stored and recalled together by commands #PRST-STO and #PRST-RCL.	COMMAND #PRST-STO <u>presets</u> <CR> FEEDBACK ~nn@PRST-STO <u>presets</u> <CR><LF>	presets – Preset number	Store the current configuration under preset 1: #PRST-STO <u>1</u> <CR>
PRST-VID?	Get video connections from saved preset. ⓘ In most units, video and audio presets with the same number are stored and recalled together by commands #PRST-STO and #PRST-RCL.	COMMAND #PRST-VID? <u>presets,out_index</u> <CR> #PRST-VID? <u>presets,*</u> <CR> FEEDBACK ~nn@PRST-VID <u>presets,in_index>out_index</u> <CR><LF> ~nn@PRST-VID <u>presets,in_index>1,in_index>2,in_index>3,...</u> <CR><LF>	presets – Preset number in_index – Number that indicates the specific input: 1 – 34 0 – Output is disconnected > – Connection character between in and out parameters out_index – Output number 1–34 * for all outputs	Get video connections for preset 3 for all outputs: #PRST-VID? <u>3,*</u> <CR>

Function	Description	Syntax	Parameters/Attributes	Example
RESET	Reset device.  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.	COMMAND #RESET<CR> FEEDBACK ~nn@RESET_ok<CR><LF>		Reset the device: #RESET<CR>
ROUTE	Set layer routing.  This command replaces all other routing commands.	COMMAND #ROUTE_layer_type,out_index,in_index<CR> FEEDBACK ~nn@ROUTE_layer_type,out_index<CR><LF>	layer_type Layer Enumeration 1 – Video 2 – Audio out_index – Number that indicates the specific output 1–34 * for all outputs in_index – Number that indicates the specific input 0 – disconnect the output 1–34	Route HDMI IN 2 to HDMI OUT 4: #ROUTE_1,2,4<CR>
ROUTE?	Get layer routing.  This command replaces all other routing commands.	COMMAND #ROUTE?_layer_type,out_index<CR> FEEDBACK ~nn@ROUTE_layer_type,out_index,in_index<CR><LF>	layer_type Number that represents the type of signal 1 – Video 2 – Audio out_index – Number that indicates the specific output 1–34 * for all outputs in_index – Number that indicates the specific input 0 – output is disconnected 1–34	Get the video routing for output 2: #ROUTE?_1,2<CR>
SIGNAL?	Get input signal status.	COMMAND #SIGNAL?_in_index<CR> FEEDBACK ~nn@SIGNAL_in_index,status<CR><LF>	in_index – Number that indicates the specific input: 1–34 status – Signal status according to signal validation: 0 – Off 1 – On	Get the input signal status of IN 1: #SIGNAL?_1<CR>
SN?	Get device serial number.	COMMAND #SN?_<CR> FEEDBACK ~nn@SN_serial_num<CR><LF>	serial_num – 14 decimal digits, factory assigned	Get the device serial number: #SN?_<CR>
TEST-MODE	Put device into keyboard testing mode.  Refer to User Manual for test instructions.	COMMAND #TEST-MODE<CR> FEEDBACK ~nn@TEST-MODE_result<CR><LF>	result – OK – Device has entered keyboard testing mode	Put device into keyboard testing mode: #TEST-MODE<CR>
TIME	Set device time and date.  The year must be 4 digits. The device does not validate the day of week from the date. Time format - 24 hours. Date format - Day, Month, Year.	COMMAND #TIME_day_of_week,date,time<CR> FEEDBACK ~nn@TIME_day_of_week,date,time<CR><LF>	day_of_week – One of {SUN,MON,TUE,WED,THU,FRI,SAT} date – Format: DD-MM-YYYY. time – Format: hh:mm:ss where hh = hours mm = minutes ss = seconds	Set device time and date to December 5, 2018 at 2:30pm: #TIME_mon_05-12-2018,14:30:00<CR>
TIME?	Get device time and date.  The year must be 4 digits. The device does not validate the day of week from the date. Time format - 24 hours. Date format - Day, Month, Year.	COMMAND #TIME?_<CR> FEEDBACK ~nn@TIME_day_of_week,date,time<CR><LF>	day_of_week – One of {SUN,MON,TUE,WED,THU,FRI,SAT} date – Format: DD-MM-YYYY where DD = Day MM = Month YYYY = Year time – Format: hh:mm:ss where hh = hours mm = minutes ss = seconds	Get device time and date: #TIME?<CR>
TREBLE	Set audio treble level.	COMMAND #TREBLE_io_index,treble_level<CR> FEEDBACK ~nn@TREBLE_io_index,treble_level<CR><LF>	io_index – Number that indicates the specific input or output port: 1–34 treble_level – Audio parameter in Kramer units, minus sign precedes negative values 0-15 ++ increase current value – decrease current value	Set audio treble level: #TREBLE_1,1<CR>
TREBLE?	Get audio treble level.	COMMAND #TREBLE?_io_index<CR> FEEDBACK ~nn@TREBLE_io_index,treble_level<CR><LF>	io_index – Number that indicates the specific input or output port: 1–34 treble_level – Audio parameter in Kramer units, minus sign precedes negative values 0-15	Get audio treble level: #TREBLE?_1<CR>

Function	Description	Syntax	Parameters/Attributes	Example
VERSION?	Get firmware version number.	COMMAND #VERSION?_<CR> FEEDBACK ~nn@VERSION_firmware_version<CR><LF>	firmware_version – XX.XX.XXXX where the digit groups are: major.minor.build version	Get the device firmware version number: #VERSION?_<CR>
VID	Set video switch state.	COMMAND #VID_in_id>out_id<CR> FEEDBACK ~nn@VID_in_id>out_id<CR><LF>	in_id – Indicates the ID of the input: 0 – Disconnect output 1–34 > – Connection character between in and out parameters out_id – Output number 1–34 * for all outputs	Switch IN 1 to OUT 3: #VID_1>3<CR>
VID?	Get video switch state. ⓘ 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).	COMMAND #VID?_out_id<CR> FEEDBACK ~nn@VID_out_id<CR><LF>	in_id – Indicates the ID of the input: 0 – Output disconnected 1–34 > – Connection character between in and out parameters out_id – Output number 1–34 * for all outputs	Get video switch state: #VID?_2<CR>
X-MUTE	Set mute ON/OFF on a specific signal. ⓘ This command is designed to Mute a Signal. This means that it could be applicable on any type of signal. Could be audio, video and maybe IR, USB, or data if this capability is supported by the product.	COMMAND #X-MUTE_<direction_type>.<port_format>.<port_index>.<signal_type>.<index>,state<CR> FEEDBACK ~nn@X-MUTE_<direction_type>.<port_format>.<port_index>.<signal_type>.<index>,state<CR><LF>	The following attributes comprise the signal ID: ▪ <direction_type> – Direction of the port: o IN – Input o OUT – Output ▪ <port_format> – Type of signal on the port: o ANALOG_AUDIO ▪ <port_index> – The port number as printed on the front or rear panel ▪ <signal_type> – Signal ID attribute: o AUDIO ▪ <index> – 1 state – OFF/ON (not case sensitive)	Mute the video on HDMI OUT 2: #X-MUTE_out.hdmi.2.video.1,0n<CR>
X-MUTE?	Get mute ON/OFF state on a specific signal.	COMMAND #X-MUTE?_<direction_type>.<port_format>.<port_index>.<signal_type>.<index><CR> FEEDBACK ~nn@X-MUTE_<direction_type>.<port_format>.<port_index>.<signal_type>.<index>,state<CR><LF>	The following attributes comprise the signal ID: ▪ <direction_type> – Direction of the port: o IN – Input o OUT – Output ▪ <port_format> – Type of signal on the port: o ANALOG_AUDIO ▪ <port_index> – The port number as printed on the front or rear panel ▪ <signal_type> – Signal ID attribute: o AUDIO ▪ <index> – 1 state – OFF/ON (not case sensitive)	Get the mute ON/OFF state on a specific signal: #X-MUTE?_out.hdmi.4.video.1<CR>

Result and Error Codes

Syntax

In case of an error, the device responds with an error message. The error message syntax:

- **~NN@ERR XXX<CR><LF>** – when general error, no specific command
- **~NN@CMD ERR XXX<CR><LF>** – for specific command
- **NN** – machine number of device, default = 01
- **XXX** – error code

Error Codes

Error Name	Error Code	Description
P3K_NO_ERROR	0	No error
ERR_PROTOCOL_SYNTAX	1	Protocol syntax
ERR_COMMAND_NOT_AVAILABLE	2	Command not available
ERR_PARAMETER_OUT_OF_RANGE	3	Parameter out of range
ERR_UNAUTHORIZED_ACCESS	4	Unauthorized access
ERR_INTERNAL_FW_ERROR	5	Internal FW error
ERR_BUSY	6	Protocol busy
ERR_WRONG_CRC	7	Wrong CRC
ERR_TIMEOUT	8	Timeout
ERR_RESERVED	9	(Reserved)
ERR_FW_NOT_ENOUGH_SPACE	10	Not enough space for data (firmware, FPGA...)
ERR_FS_NOT_ENOUGH_SPACE	11	Not enough space – file system
ERR_FS_FILE_NOT_EXISTS	12	File does not exist
ERR_FS_FILE_CANT_CREATED	13	File can't be created
ERR_FS_FILE_CANT_OPEN	14	File can't open
ERR_FEATURE_NOT_SUPPORTED	15	Feature is not supported
ERR_RESERVED_2	16	(Reserved)
ERR_RESERVED_3	17	(Reserved)
ERR_RESERVED_4	18	(Reserved)
ERR_RESERVED_5	19	(Reserved)
ERR_RESERVED_6	20	(Reserved)
ERR_PACKET_CRC	21	Packet CRC error
ERR_PACKET_MISSED	22	Packet number isn't expected (missing packet)
ERR_PACKET_SIZE	23	Packet size is wrong
ERR_RESERVED_7	24	(Reserved)
ERR_RESERVED_8	25	(Reserved)
ERR_RESERVED_9	26	(Reserved)
ERR_RESERVED_10	27	(Reserved)
ERR_RESERVED_11	28	(Reserved)
ERR_RESERVED_12	29	(Reserved)
ERR_EDID_CORRUPTED	30	EDID corrupted
ERR_NON_LISTED	31	Device specific errors
ERR_SAME_CRC	32	File has the same CRC – no changed
ERR_WRONG_MODE	33	Wrong operation mode
ERR_NOT_CONFIGURED	34	Device/chip was not initialized

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 all covered by a standard one (1) year warranty.
3. All Kramer Cobra products, all Kramer Calibre products, all Kramer Minicom digital signage products, all HighSecLabs products, all streaming, and all wireless products are covered by a standard three (3) year warranty.
4. All Sierra Video MultiViewers are covered by a standard five (5) year warranty.
5. Sierra switchers & control panels are covered by a standard seven (7) year warranty (excluding power supplies and fans that are covered for three (3) years).
6. K-Touch software is covered by a standard one (1) year warranty for software updates.
7. All Kramer passive cables are covered by a ten (10) year warranty.

Who is Covered

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

What Kramer Electronics Will Do

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

1. Elect to repair or facilitate the repair of any defective parts within a reasonable period of time, free of any charge for the necessary parts and labor to complete the repair and restore this product to its proper operating condition. Kramer Electronics will also pay the shipping costs necessary to return this product once the repair is complete.
2. Replace this product with a direct replacement or with a similar product deemed by Kramer Electronics to perform substantially the same function as the original product. 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

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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.



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.

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