



KRAMER ELECTRONICS LTD.

# USER MANUAL

MODEL:

**KDS-EN1**

HD Video Encoder/Streamer

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P/N: 2900-300150 Rev 3

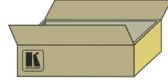
# KDS-EN1 HD Video Encoder/Streamer Quick Start Guide



This guide helps you install and use your product for the first time. For more detailed information, go to [http://www.kramerelectronics.com/support/product\\_downloads.asp](http://www.kramerelectronics.com/support/product_downloads.asp) to download the latest manual or scan the QR code on the left.

## Step 1: Check what's in the box

- KDS-EN1** HD Video Encoder/Streamer
- Power cord
- 4 Rubber feet
- 1 Quick Start Guide
- 2 Rack "ears"



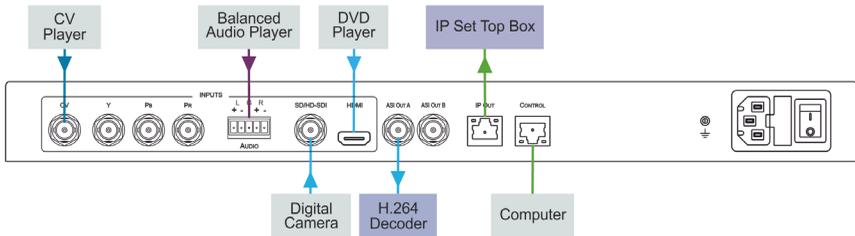
Save the original box and packaging materials in case your Kramer product needs to be returned to the factory for service.

## Step 2: Install the KDS-EN1

Mount the device in a rack (using the supplied rack "ears") or place it on a shelf.

## Step 3: Connect the inputs and outputs

Switch off the power to all devices before connecting them to your **KDS-EN1**.



When connecting AV equipment to the **KDS-EN1** we recommend that you use Kramer high-performance cables for best results.

## Step 4: Connect the power

Connect the **KDS-EN1** to the mains supply using the supplied power cord.



## Step 5: Operate the device

Use the keypad to navigate the menu and modify parameters

Operate the device using the front panel controls and Ethernet



Press ESC to move back one level in the menu

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# 1 Introduction

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

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

Congratulations on purchasing your **KDS-EN1 HD Video Encoder/Streamer** which is ideal for broadcast and production studios as well as digital/analog AV authoring.

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## 2 Getting Started

We recommend that you:

- Unpack the equipment carefully and save the original box and packaging materials for possible future shipment
- Review the contents of this user manual  
Use Kramer high performance, high resolution cables
- Use only the power cord supplied with the device



Go to <http://www.kramerelectronics.com> to check for up-to-date user manuals, application programs and to check whether firmware upgrades are available (where appropriate).

### 2.1 Achieving the Best Performance

To achieve the best performance:

- Use only good quality connection 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 **KDS-EN1** away from moisture, excessive sunlight and dust



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

## 2.2 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 <http://www.kramerelectronics.com/support/recycling/>.

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## 3 Overview

The **KDS-EN1** *HD Video Encoder/Streamer* is ideal as a broadcast quality video scaler and audio embedder/de-embedder for digital signals up to 3G HD-SDI, composite and component video signals, HDMI and balanced audio signals, which are output as an IP stream and as a DVB-ASI signal.

All mentions of SDI in this manual include signals up to and including 3G HD-SDI.

**Note:** If the content is protected by HDCP, the stream is not encoded.

The **KDS-EN1** features:

- A maximum data rate of 3Gpbs
- One SDI video, one HDMI, one composite and one component video input
- One balanced, stereo audio input
- One TCP/IP output
- Two ASI outputs
- The option to select either the embedded audio or to embed two independent audio groups
- An LCD text display for easy configuration and operation

## 4 Defining the KDS-EN1 HD Video Encoder/Streamer

[Figure 1](#) defines the front panel of the **KDS-EN1**.

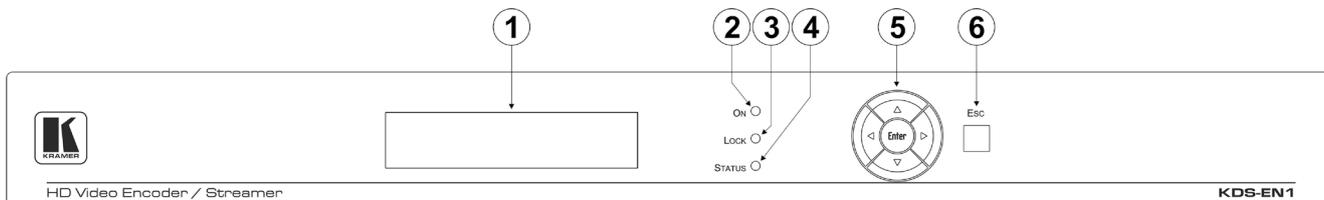


Figure 1: KDS-EN1 HD Video Encoder/Streamer Front Panel

#	Feature	Function
1	LCD Readout	Displays either the input/output resolution currently selected or the menu during configuration
2	ON LED	Lights green when the device is powered on
3	LOCK LED	Lights orange when the front panel buttons are locked. Lights green when the buttons are unlocked (see <a href="#">Section 7.1</a> )
4	STATUS LED	Lights green to indicate that the device is working correctly and that there is a valid input signal. Lights red to indicate a device fault or if there is no valid input signal
5	Menu Navigation Buttons	Press the Enter, up (▲), down (▼), left (◀) and right (▶) buttons to navigate the menu, and modify parameters or values
6	ESC Button	Press to move back one level through the menu

Figure 2 defines the rear panel of the **KDS-EN1**.

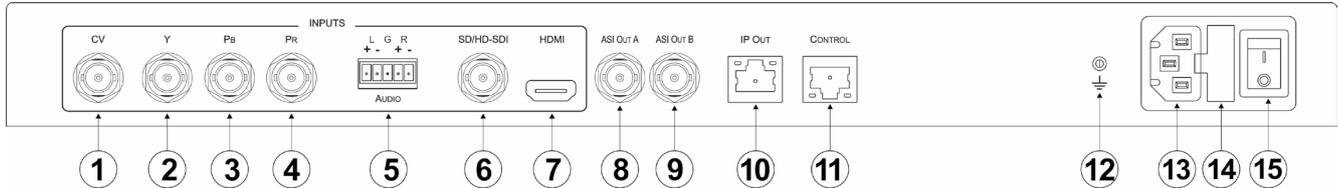


Figure 2: KDS-EN1 HD Video Encoder/Streamer Rear Panel

#	Feature	Function	
1	CV BNC Connector	Connect to a composite video source	
2	INPUTS Component Video	Y BNC Connector	Connect to the Y component of the component video source
3		PB BNC Connector	Connect to the Pb component of the component video source
4		PR BNC Connector	Connect to the Pr component of the component video source
5		AUDIO Balanced Stereo Audio Connector	5-Pin Terminal Block
6	SDI/HD-SDI BNC Connector	Connect to the SDI source	
7	HDMI Connector	Connect to the HDMI source	
8	Outputs	ASI OUT A BNC Connector	Connect to the first ASI acceptor
9		ASI OUT B BNC Connector	Connect to the second ASI acceptor
10		IP OUT RJ-45 Connector	Connect to the IP acceptor
11	CONTROL RJ-45 Connector	Connect to the PC controller via a LAN	
12	Grounding Terminal	Connect to the common system ground	
13	Power Socket	Connect the mains power cord	
14	Fuse	AC mains supply protection fuse	
15	Power Switch	Turn the device on and off	

## 5 Installing the KDS-EN1 in a Rack

This section provides instructions on rack mounting the **KDS-EN1**.

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

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



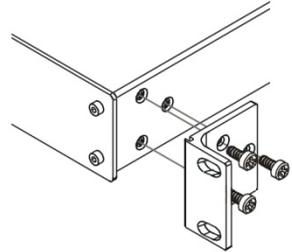
### CAUTION!

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

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

### To rack-mount a machine:

1. Attach both ear brackets to the machine. To do so, remove the screws from each side of the machine (3 on each side), and replace those screws through the ear brackets.



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

#### Note:

- In some models, the front panel may feature built-in rack ears
- Detachable rack ears can be removed for desktop use
- Always mount the machine in the rack before you attach any cables or connect the machine to the power
- If you are using a Kramer rack adapter kit (for a machine that is not 19"), see the Rack Adapters user manual for installation instructions available from our Web site

## 6 Connecting the KDS-EN1



Always switch off the power to any device before connecting it to your **KDS-EN1**. After connecting your **KDS-EN1**, connect its power and then switch on the power to the other devices.

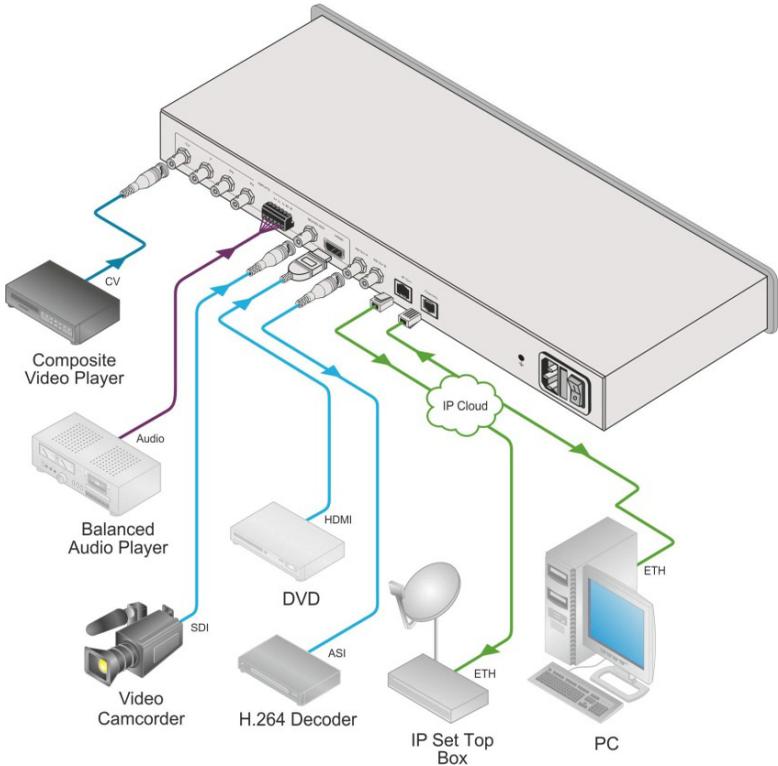


Figure 3: Connecting the KDS-EN1 HD Video Encoder/Streamer

To connect the **KDS-EN1** as illustrated in the example in [Figure 3](#):

1. Connect the composite video source (for example, a composite video player) to the CV INPUT BNC connector.
2. Connect the balanced audio source (for example, a balanced audio player) to the AUDIO INPUT 5-pin terminal block.

3. Connect the SDI source (for example, a video camcorder) to the SD/HD-SDI INPUT BNC connector.
4. Connect the HDMI source (for example, a DVD player) to the HDMI INPUT connector.
5. Connect the ASI OUT A BNC connector to the ASI acceptor (for example, an H.264 decoder).
6. Connect the IP OUT RJ-45 connector to the IP acceptor (for example, an IP set top box).
7. Optional—Connect a PC controller via a LAN to the CONTROL RJ-45 Ethernet connector.

## 6.1 Connecting to the KDS-EN1 via Ethernet

You can connect the **KDS-EN1** via Ethernet via either of the following methods:

- A crossover cable (see [Section 6.1.1](#)) for direct connection to the PC
- A straight through cable (see [Section 6.1.2](#)) for connection via a network hub or network router

After connecting the Ethernet port, you have to install and configure your Ethernet Port. For detailed instructions, see the Ethernet Configuration Guide (Lantronix) in the technical support section on our Web site <http://www.kramerelectronics.com>.

### 6.1.1 Connecting the Ethernet Port directly to a PC

You can connect the Ethernet port on the **KDS-EN1** to the Ethernet port on your PC via a crossover cable with RJ-45 connectors. This type of connection is recommended for identification of the factory default IP Address of the **KDS-EN1** during the initial configuration.

**To configure your PC after connecting the Ethernet port:**

1. Right-click the **My Network Places** icon on your desktop.
2. Select **Properties**.
3. Right-click **Local Area Connection Properties**.

4. Select **Properties**.

The **Local Area Connection Properties** window appears.

5. Select the **Internet Protocol (TCP/IP)** and click the **Properties** Button.

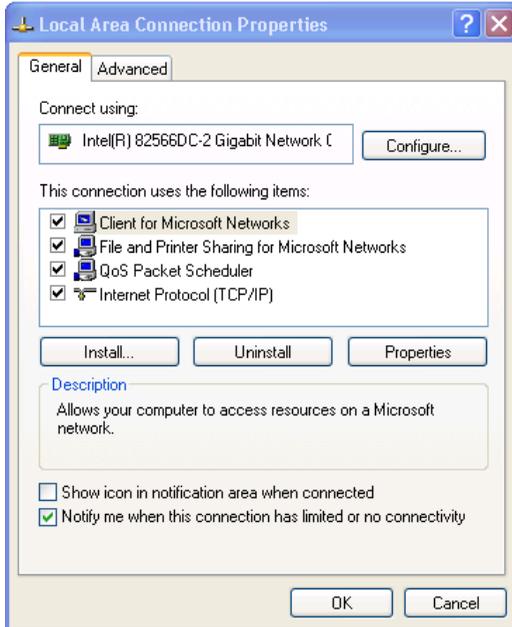


Figure 4: Local Area Connection Properties Window

6. Select **Use the following IP Address** and enter the details as shown in [Figure 5](#). 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.

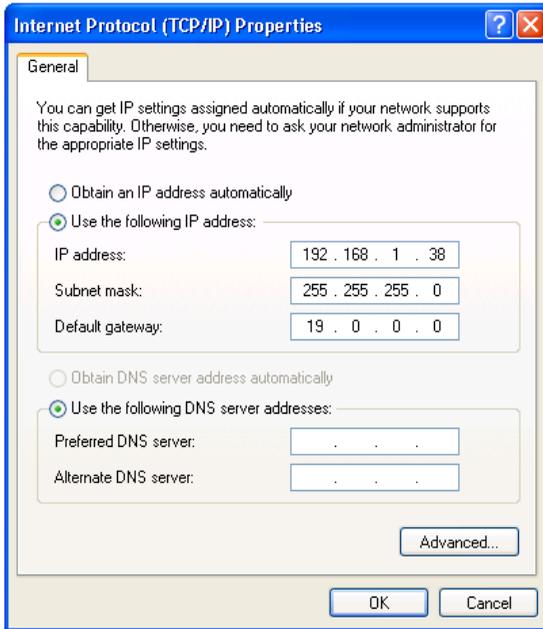


Figure 5: Internet Protocol (TCP/IP) Properties Window

7. Click **OK**.

### 6.1.2 Connecting to the Ethernet Port via a Network Switch/Hub

**To connect to the Ethernet port on the KDS-EN1 via a network switch/hub:**

- Connect the PC to the Ethernet network switch/hub using a straight through cable

## 6.2 Connecting the Balanced/Unbalanced Stereo Audio Input

This section illustrates how to wire the devices to the balanced audio input:

- A balanced stereo input connection, see [Figure 6](#)
- An unbalanced stereo input connection, see [Figure 7](#)

L+ L- G R+ R-

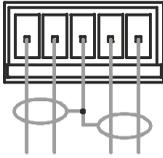


Figure 6: Balanced Stereo Audio Connection

L+ L- G R+ R-

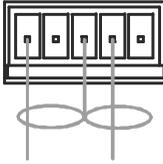


Figure 7: Unbalanced Stereo Audio Connection

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## 7 Operating the KDS-EN1 Using the Front Panel Buttons

Approximately 30 seconds after powering on the **KDS-EN1**, the model name, firmware version and serial number of the device is displayed (standby display). When this display appears, you can operate the **KDS-EN1** via either the front panel buttons or remotely using Ethernet over a LAN (see [Section 8](#)).

### 7.1 Unlocking the Front Panel Buttons

After approximately 30 seconds of no button activity the front panel buttons are locked and the Lock LED lights orange.

**To unlock the front panel buttons:**

1. Press Enter twice in quick succession.
2. Immediately press Esc twice in quick succession.

The front panel buttons are unlocked and the Lock LED lights green.

### 7.2 Using the Menu

The menu is shown on the display when the Enter button is pressed. If there is no button activity for approximately 30 seconds, display reverts back to the standby display.

Navigation through the menu is performed as follows:

- Enter—display the menu, select a parameter/value, save a value
- Up (▲) or Right (▶)—scroll up through the parameter/value list
- Down (▼) or Left (◀)—scroll down through the parameter/value list
- ESC—Move up one level through the menu or exit the menu if at the first menu level

The main menu comprises six sub-menus:

- Video (see [Section 7.2.1](#))
- Audio (see [Section 7.2.2](#))
- System (see [Section 7.2.3](#))
- TS/IP (see [Section 7.2.4](#))
- Host IP (see [Section 7.2.5](#))
- Advanced (see [Section 7.2.6](#))

## 7.2.1 Video Sub-menu

The parameters in the Video sub-menu set the video characteristics.

Parameter	Description	Options
Video Input	Video input port selection	CVBS, YPbPr, HDMI, SDI Default—CVBS
Video Resolution	The current video signal resolution	1920x1080p @50/60Hz (not supported by component input), 1920x1080i @50/60Hz, 1440x1080i @50/60Hz, 1280x720p @50/60Hz, 720x480i @60Hz, 720x576i @50Hz
Video GOP	Video GOP selection	IBBP, IPPP, IBP Default—IBBP
Video Bit Mode	Video bit rate mode selection	CBR, VBR
Average BitRate	Sets the average video bitrate. This is only valid when in VBR mode and must be more than the average video bitrate	From 1000Kbps to 19999Kbps
Max BitRate (VBR)	Sets the maximum video bitrate. This is only valid when in VBR mode and must be more than the average video bitrate	From 10000Kbps to 19999Kbps
Min BitRate (VBR)	Sets the minimum video bitrate. This is only valid when in VBR mode and must be less than the average video bitrate	From 1000Kbps to 7999Kbps

## 7.2.2 Audio Sub-menu

The parameters in the Audio sub-menu set the audio characteristics.

Parameter	Description	Options
Audio Input	Audio input source selection	Analog, HDMI, SDI Default—Analog
Audio Format	Audio format selection	MPEG-I Layer II, S/PDIF AC3 Default—MPEG
Audio BitRate	Audio bitrate selection	32Kbps, 64Kbps, 128Kbps, 192Kbps, 256Kbps, 320Kbps, 384Kbps Default—384Kbps
Audio Gain	Audio gain selection	-12dB, -6dB, 0dB, +6dB, +12dB, Default—0dB

## 7.2.3 System Sub-menu

The parameters in the System sub-menu display the system parameters.

Parameter	Description	Options
PMT PID	Sets the video output PMT PID	From 50 to 7999 Default—101
PCR PID	Sets the video output PCR PID	From 100 to 8190 Default—102
VID PID	Sets the video output PID	From 100 to 7999 Default—103
AUD PID	Sets the audio output PID	From 100 to 7999 Default—104
TS ID	Sets the transport stream ID	From 0 to 59999 Default—1
Service ID	Sets the output service ID	From 1 to 59999 Default—1
Service Name	Sets the service name	Textual name Default—TV1
Provider Name	Sets the service provider name	Textual name Default—TV-Channel
Packet Size	Packet size selection	188, 204 FEC OFF, 204 FEC ON Default—188
System Bitrate	Sets the system bitrate	From 2000Kbps to 19999Kbps Default—9500Kbps

## 7.2.4 TS/IP Sub-menu

The parameters in the TS/IP sub-menu set the transport stream IP parameters.

Parameter	Description	Options
Stream IP	Sets the transport stream IP address	Any valid IP address Default—192.168.001.022
Stream Netmask	Sets the transport stream network mask address	Any valid netmask IP address Default—255.255.255.0
Stream Gateway	Sets the transport stream gateway address	Any valid gateway IP address Default—192.168.1.1
Stream MAC	Sets the physical MAC address	Any valid MAC address Default—12-34-56-78-B0-6D
Protocol	Transport stream protocol selection	UDP, RTP, Pro-MPEG Default—UDP
Destination IP	Sets the transport stream destination IP address	Any valid IP address Default—226.1.1.1
Destination Port	Sets the transport stream destination IP port	Any valid IP port Default—1234
IGMP	IGMP enable	Enable, Disable Default—Disable
FEC Col Offset	Sets the FEC col offset	From 4 to 16 Default—10
FEC Col NA	Sets the FEC col NA	From 4 to 16 Default—10

## 7.2.5 Host IP Sub-menu

The parameters in the Host IP sub-menu display the device network IP parameters.

Parameter	Description	Options
Host IP	Sets the IP network address of the device	All valid IP addresses Default—192.168.1.21
Host Netmask	Sets the IP network mask of the device	All valid subnets Default—255.255.255.000
Host Gateway	Sets the IP gateway address of the device	All valid gateway addresses Default—192.168.1.1
Host MAC	Sets the IP port number of the device	All valid TCP ports Default—12-34-56-78-B0-6C

### 7.2.6 Advanced Sub-menu

The parameters in the Advanced Settings sub-menu allow you to save and load configurations, reset to factory defaults, and display the codec version.

Parameter	Description
Save Default	Save the current configuration as the default configuration
Load Default	Load the default configuration
Restore Initial	Load the factory default configuration
Codec Version	Displays the codec version

## 7.3 Changing the Video Input Selection

**To change the video input selection:**

1. Press the Enter button to display the menu.  
The menu is displayed.
2. Press the Enter button to select the Video Input sub-menu.  
The Video Input sub-menu is displayed.
3. Press the Enter button to enable changing the parameter.  
The current video input selection flashes.
4. Using the right (▶) or left (◀) button, move through the parameter options until the required video input is displayed.
5. Press Enter to save the selection.  
The “Updating ...” message flashes for a few seconds and the change is saved.

**Note:** If the media player does not display correctly following input resolution or selection changes, refresh the media player.

## 7.4 To Reset the Device to Factory Default Configuration

**To reset the device to the factory default configuration:**

1. Press Enter.  
The menu is displayed.

2. Press down (▼) repeatedly until the Advanced sub-menu is displayed.
3. Press Enter to enter the Advanced sub-menu.  
The first option in the Advanced sub-menu is displayed.
4. Press down (▼) repeatedly until the Restore Initial option is displayed.
5. Press Enter.  
The “Updating ...” message flashes for a few seconds and the factory defaults are loaded.
6. Press Esc twice to exit the menu.

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## 8 Operating the KDS-EN1 Using the Web Pages

The embedded Web pages can be used to remotely operate the **KDS-EN1** using a Web browser and an Ethernet connection over a LAN. The menu appears on the left side of the screen. There are ten Web pages:

- Video Settings Page (see [Section 8.1.1](#))
- Audio Settings Page (see [Section 8.1.2](#))
- System Settings Page (see [Section 8.1.3](#))
- TS/IP Settings Page (see [Section 8.1.4](#))
- Host IP Settings Page (see [Section 8.1.5](#))
- System Information Page (see [Section 8.1.6](#))
- Saving the Default Configuration Page (see [Section 8.1.7](#))
- Loading the Default Configuration Page (see [Section 8.1.8](#))
- Load the Factory Defaults Page (see [Section 8.1.9](#))
- Software Upgrade Page (see [Section 8.1.10](#))

After making changes on any of the pages click Save to save the changes.

### 8.1 Accessing the KDS-EN1 Web Pages

**To access the KDS-EN1 Web pages:**

1. Open your Internet browser.
2. Enter the IP address of the device (see [Section 10](#)) in the address bar of your browser (see [Figure 8](#)).

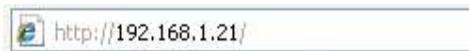


Figure 8: Web Browser Address Bar

The home page similar to that shown in [Figure 9](#) appears.

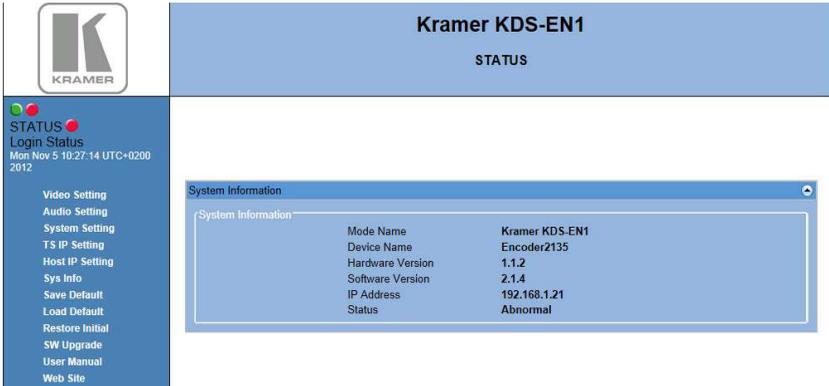


Figure 9: Home Page

### 8.1.1 Video Settings Page

The following video parameters are included:

- Input port selection
- Resolution
- GOP
- Encoding mode
- Average, maximum and minimum bitrates

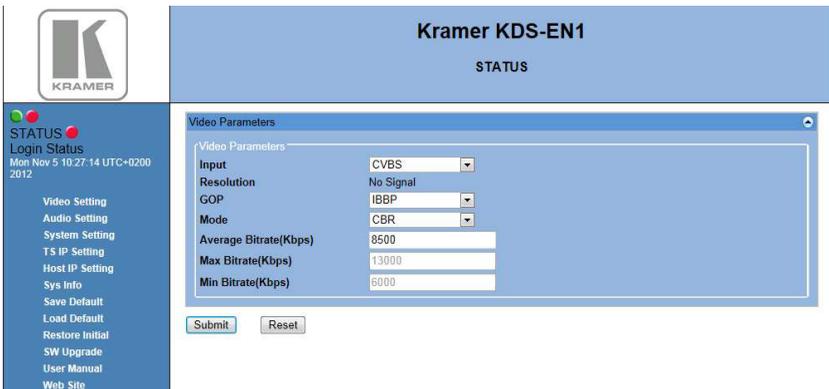


Figure 10: Video Parameters Page

For video parameter descriptions see [Section 7.2.1](#).

## 8.1.2 Audio Settings Page

The following audio parameters are included:

- Input port selection
- Audio format, bitrate and gain



Figure 11: Audio Parameters Page

For audio parameter descriptions see [Section 7.2.2](#).

## 8.1.3 System Settings Page

The following system parameters are included:

- PMT PID
- PCR PID
- VID PID
- AUD PID
- Service name and provider name
- TS ID
- Service ID
- Packet size
- System bitrate

The screenshot shows the Kramer KDS-EN1 STATUS page. On the left is a navigation menu with options like Video Setting, Audio Setting, System Setting, TS IP Setting, Host IP Setting, Sys Info, Save Default, Load Default, Restore Initial, SW Upgrade, User Manual, and Web Site. The main content area is titled 'System Parameters' and contains a table of input fields for various parameters. Below the table are 'Submit' and 'Reset' buttons.

System Parameters			
System Parameters			
PMT PID	101	PCR PID	102
VID PID	103	AUD PID	104
Service Name	TV1	Service Provider Name	TV-Channel
TS ID	1	Service ID	1
Packet Size	188	System Bitrate(Kbps)	9500

Figure 12: System Parameters Page

For system parameter descriptions see [Section 7.2.3](#).

### 8.1.4 TS IP Settings Page

The following TS IP parameters are included:

- Stream IP, netmask and gateway
- MAC address
- Protocol
- Destination IP and port
- Enable/disable IGMP
- FEC column offset
- FEC column Na number

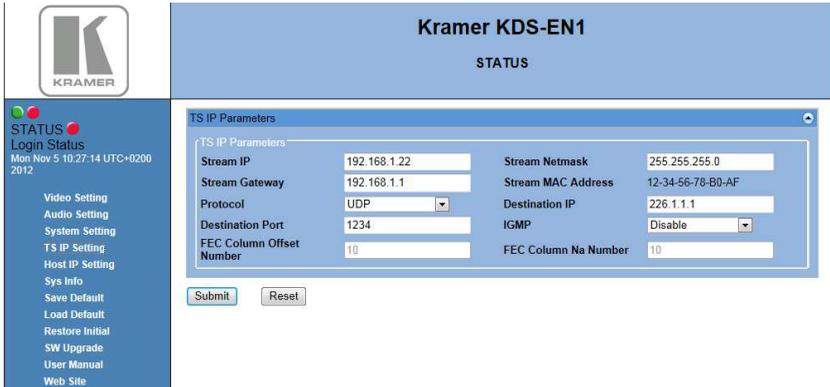


Figure 13: TS IP Parameters Page

For TS IP parameter descriptions see [Section 7.2.4](#).

### 8.1.5 Host IP Settings Page

The following host IP parameters are included:

- Host IP, netmask and gateway
- MAC address

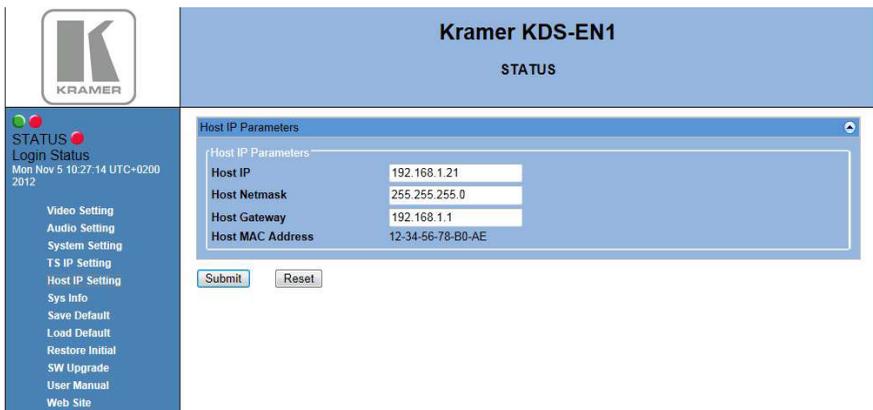


Figure 14: Host IP Parameters Page

For host IP parameter descriptions see [Section 7.2.5](#).

## 8.1.6 System Information Page

The following system details are displayed (all fields are read only):

- Device and model name
- Hardware and software versions
- IP address
- Device status

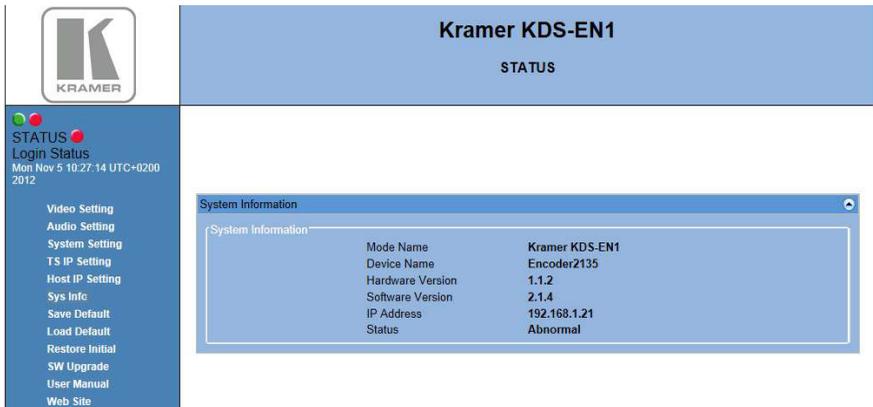


Figure 15: System Information Page

## 8.1.7 Saving the Default Configuration Page

The Save Default page allows you to store the current configuration. The message shown in [Figure 16](#) is displayed before the operation is executed.

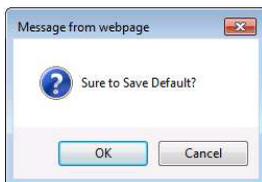


Figure 16: Save Default Confirmation Message

## 8.1.8 Loading the Default Configuration Page

The Load Default page allows you to retrieve a previously stored configuration. The message shown in [Figure 17](#) is displayed before the operation is executed.

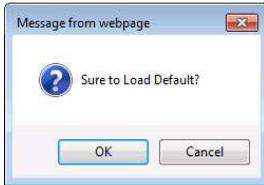


Figure 17: Load Default Confirmation Message

### 8.1.9 Loading the Factory Defaults Page

The Restore Initial page allows you to load the factory default parameters. The message shown in [Figure 17](#) is displayed before the operation is executed.

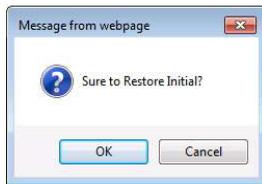


Figure 18: Restore Initial Settings Confirmation Message

### 8.1.10 Software Upgrade Page

The Software Upgrade page allows you to upgrade the firmware of the device. Prior to performing this operation, you must download the latest firmware version to your PC. The latest version is available from <http://www.kramerelectronics.com>.

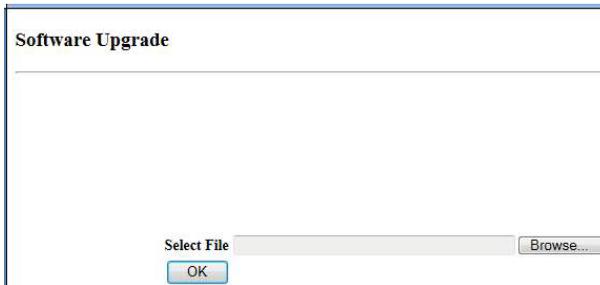


Figure 19: Software Upgrade Page

## 9 Technical Specifications

INPUTS:	Digital Video	1 SDI serial video, 75Ω on BNC connectors	SD	SMPTE-259M	SMPTE-125M ITU-R BT.656-5	480i-59.94 576i-50
			HD	SMPTE-292	SMPTE-296M	720p-59.94/60/50
					SMPTE-274M	1080i-59.94/60/50 1080p-29.97/30/2 23.98/24 23.98sF/24sF
			3G	SMPTE-424M	SMPTE-296M	1080p-59.94/60/50
	1 HDMI					
Analog Video	1 Composite video on a BNC connector					
	1 Component video (Y, Pb, Pr) on 3 BNC connectors. Supported resolutions: 1920x1080i @50/60Hz, 1440x1080i @50/60Hz, 1280x720p @50/60Hz, 720x480i @60Hz, 720x576i @50Hz					
Analog Audio	1 Stereo balanced audio on a 5-pin terminal block					
OUTPUTS:	Digital Video	2 DVB-ASI on BNC connectors	Max. data rate		72Mbps	
			Packet length		188 bytes	
	IP	1 IP UDP transport stream on an RJ-45 connector				
CONTROL:	1 TCP/IP on an RJ-45 Connector					
POWER CONSUMPTION:	100-240V AC 50/60Hz 24VA					
OPERATING TEMPERATURE:	0° to +40°C (32° to 104°F)					
STORAGE TEMPERATURE:	-40° to +70°C (-40° to 158°F)					
HUMIDITY:	10% to 90%, RHL non-condensing					
DIMENSIONS:	19" x 9.41" x 1U (W, D, H) rack mountable					
WEIGHT:	1.8kg (3.97lbs) approx.					
ACCESSORIES:	Power cord, rack "ears"					

---

## 10 Default Communication Parameters

Ethernet	
IP Address	192.168.1.39
Subnet mask	255.255.255.0
Default gateway	0.0.0.0

---

# 11 Default EDID

## Monitor

Model name..... KDS EN1  
Manufacturer..... KRM  
Plug and Play ID..... KRM0619  
Serial number..... 1  
Manufacture date..... 2013, ISO week 9  
Filter driver..... None

-----  
EDID revision..... 1.3  
Input signal type..... Digital  
Color bit depth..... Undefined  
Display type..... RGB color  
Screen size..... 1020 x 570 mm (46.0 in)  
Power management..... Not supported  
Extension blocs..... 1 (CEA-EXT)  
-----  
DDC/CI..... n/a

## Color characteristics

Default color space..... Non-sRGB  
Display gamma..... 2.20  
Red chromaticity..... Rx 0.625 - Ry 0.340  
Green chromaticity..... Gx 0.280 - Gy 0.595  
Blue chromaticity..... Bx 0.155 - By 0.070  
White point (default).... Wx 0.283 - Wy 0.298  
Additional descriptors... None

## Timing characteristics

Horizontal scan range.... 15-68kHz  
Vertical scan range..... 50-80Hz  
Video bandwidth..... 150MHz  
CVT standard..... Not supported  
GTF standard..... Not supported  
Additional descriptors... None  
Preferred timing..... Yes  
Native/preferred timing., 1280x720p at 60Hz  
Modeline..... "1280x720" 74.250 1280 1390 1430 1650 720 725 730 746 +hsync -vsync  
Detailed timing #1..... 1280x720p at 50Hz (16:9)  
Modeline..... "1280x720" 74.250 1280 1720 1760 1980 720 725 730 750 -hsync -vsync

## Standard timings supported

720 x 400p at 70Hz - IBM VGA  
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  
1024 x 768p at 60Hz - VESA  
1024 x 768p at 70Hz - VESA  
1024 x 768p at 75Hz - VESA  
1280 x 1024p at 75Hz - VESA

## EIA/CEA-861 Information

Revision number..... 3  
IT underscan..... Not supported  
Basic audio..... Supported  
YCbCr 4:4:4..... Supported  
YCbCr 4:2:2..... Supported  
Native formats..... 0  
Detailed timing #1..... 1920x1080i at 60Hz (16:9)



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### What is Not Covered

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**SAFETY WARNING**

Disconnect the unit from the power supply before opening and servicing



P/N: 2900-300150



Rev: 3