KRAMER ELECTRONICS LTD.

USER MANUAL

MODEL:

VP-480
CV to 3G HD-SDI Scaler

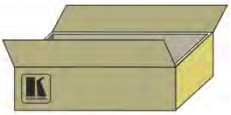
P/N: 2900-000762 Rev 1

VP-480 Quick Start Guide

This page guides you through a basic installation and first-time use of your **VP-480**. For more detailed information see the **VP-480** User Manual, the latest version of which can be downloaded from http://www.kramerelectronics.com.

Step 1: Check what's in the box

- **VP-480** CV to 3G HD-SDI Scaler
- 1 power adapter (5V DC)
- 4 Rubber feet
- 1 Quick Start sheet
- 1 User Manual



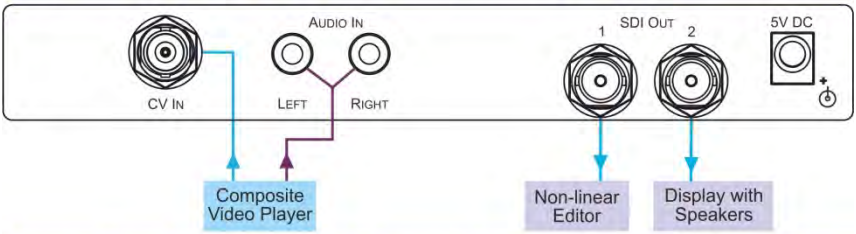
Save the original box and packaging in case your **VP-480** needs to be returned to the factory for service.

Step 2: Install the VP-480

Mount the device in a rack (using the RK-T2B rack adapter) or place the device on a table.

Step 3: Connect the inputs and outputs

Always switch off the power to each device before connecting it to your **VP-480**.



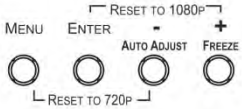
Always use Kramer high-performance cables for connecting AV equipment to the **VP-480**.

Step 4: Connect the power

Connect the 5V DC power adapter to the **VP-480** and plug the adapter into the mains electricity.

Step 5: Operate the VP-480

Set the parameters using the OSD and the front panel buttons.



Contents

Figures

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 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!

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 Matrix Switchers; 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 Products.

Congratulations on purchasing your Kramer **VP-480** *CV to 3G HD-SDI Scaler*, which is ideal for the following typical applications:

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

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

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

2.1 Achieving the Best Performance

To achieve the best performance:

- 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)
- Avoid interference from neighboring electrical appliances that may adversely influence signal quality
- Position your Kramer **VP-480** away from moisture, excessive sunlight and dust

Caution: No operator serviceable parts inside the unit

Warning: Use only the Kramer Electronics input power wall adapter that is provided with the unit

Warning: Disconnect the power and unplug the device from the wall before installing

3 Overview

The Kramer **VP-480** *CV to 3G HD-SDI Scaler* is a high-performance digital scaler for composite video signals. It up-scales to SDI, HD-SDI and 3G HD-SDI signals. The following output resolutions are supported:

- SDTV: 480i and 576i
- HDTV: 720p @60, 1080p SF30/29/25, 1080p 30/29/25/24/23, 1080p @59, 1080i @59, 720p @59, 480i @59, 576i, 1080p @50, 1080i @50, 720p @50, 1080p @60, 1080i @60

The **VP-480** also features:

- A data rate of up to 3Gbps
- A composite video input
- An unbalanced stereo audio input
- Two SDI outputs (up to 3G HD-SDI)
- Multi-standard operation: SDI (SMPTE 259M), HD-SDI (SMPTE 292M) and 3G HD-SDI (SMPTE 424M)
- An OSD (On-screen Display) accessible via the front panel buttons for easy setup and adjustment
- A built-in ProcAmp for convenient signal adjustment
- A non-volatile memory that retains the last settings used
- A freeze button
- An external 5V DC power supply

4 Defining the VP-480 CV to 3G HD-SDI Scaler

Figure 1 defines the front and rear panels of the **VP-480**.

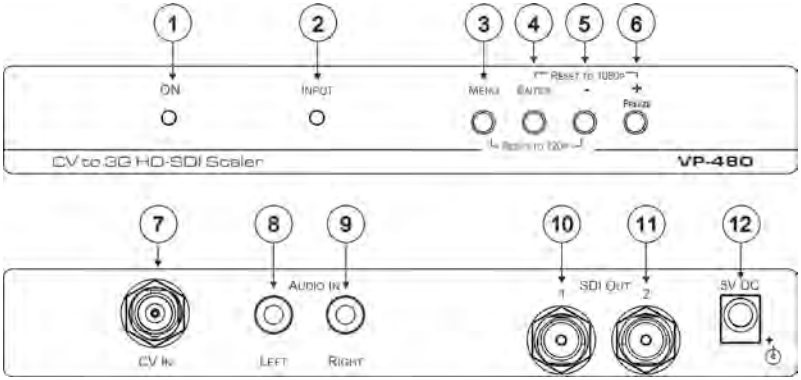


Figure 1: VP-480 CV to 3G HD-SDI Scaler

#	Feature	Function
1	*ON* LED	Lights green when the device is powered on
2	*INPUT* LED	Lights green when a composite video signal is detected on the input
3	*MENU* Button	Press to display the OSD (On-screen Display) menu. When the OSD is not displayed, press together with the – button to set he output resolution to 720p (1280x720)
4	*ENTER* Button	In the OSD, press to select the highlighted menu item. When the OSD is not displayed, press together with the + button to set the output resolution to 1080p (1920x1080)
5	– Button	In the OSD, press to step up through the options or to decrement the parameter value
6	+ / *FREEZE* Button	In the OSD, press to step down through the options or to increment the parameter value. When the OSD is not displayed, press to freeze the display
7	*CV IN* BNC connector	Connect to a composite video source
8	*AUDIO IN LEFT* RCA Connector	Connect to the left channel of the unbalanced stereo audio source
9	*AUDIO IN RIGHT* RCA Connector	Connect to the right channel of the unbalanced stereo audio source
10	*SDI OUT 1* BNC Connector	Connect to SDI acceptor 1. The signal is re-clocked and equalized
11	*SDI OUT* 2 BNC Connector	Connect to SDI acceptor 2. The signal is re-clocked and equalized
12	*5V DC*	Connect to the +5V DC power adapter, center pin positive

5 Connecting the VP-480

Always switch off the power to each device before connecting it to your **VP-480**. After connecting your **VP-480**, connect its power and then switch on the power to each device.

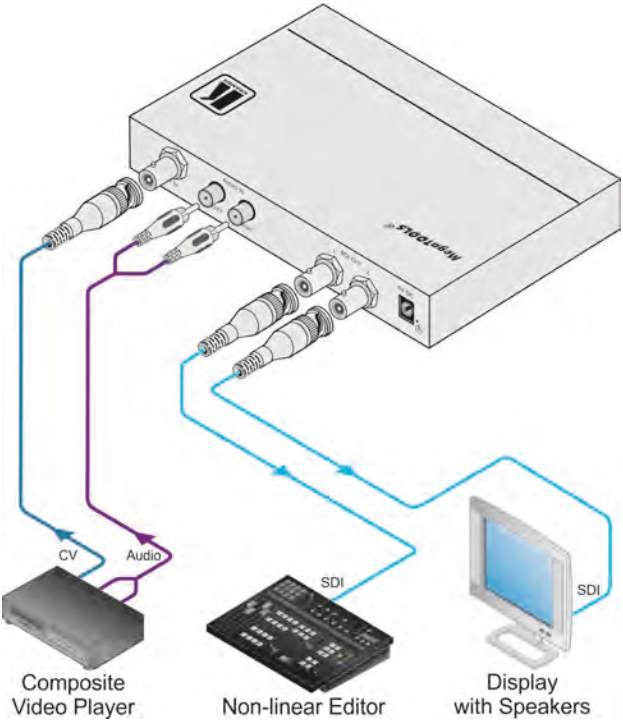


Figure 2: Connecting the VP-480 CV to 3G HD-SDI Scaler

To connect the VP-480 as illustrated in the example in Figure 2:

1. Connect a composite video source (for example, a composite video player) to the CV IN BNC connector.

2. Connect an unbalanced stereo audio source (for example, the audio output from the composite video player) to the LEFT and RIGHT AUDIO IN RCA connectors.

3. Connect the SDI OUT 1 BNC connector to an SDI acceptor (for example, a non-linear editor).

4. Connect the SDI OUT 2 BNC connector to an SDI acceptor (for example, an SDI display with speakers).

5. Connect the 5V DC power adapter to the 5V DC power socket and to the mains electricity (not shown in the illustration).

6 Operating the VP-480 CV to 3G HD-SDI Scaler

The **VP-480** is operated directly via the front panel buttons and via the OSD menu.

6.1 Using the Front Panel Buttons

During normal operation (without the OSD), the front panel buttons operate in the following manner:

- **MENU**: Press once to display the OSD Main Menu (see Section 6.2). Press again to close the OSD
- **FREEZE**: Press once to freeze the display. Press again to unfreeze the display
- **MENU** and **–**: Press together to set the output to 720p
- **ENTER** and **FREEZE**: Press together to set the output to 1080p

6.2 Using the OSD

The OSD is used to set a variety of parameters (see Sections 6.2.1 to 6.2.5). When using the OSD, the front panel buttons operate in the following manner:

- **MENU**: Press once to open the OSD main menu. Press again to close the OSD
- **ENTER**: Press to select the highlighted menu item or parameter
- **–** : Press to step up through the menu list or decrement the parameter value
- **+** : Press to step down through the menu list or increment the parameter value

Note: After a period of 10 sec with no button activity, the OSD menu automatically turns off. This can be changed using the **OSD** > **Timer setting** parameter.

To change settings:

1. From normal operation, press MENU.
   The OSD main menu appears on the screen.

2. Press the **+** or **–** button to move up or down the list or highlight the main menu item in green.

3. Press Enter.
   If the menu item has a parameter after it, the parameter changes to red and the **+** and **–** buttons are used to cycle through the available parameters.
   If there is no parameter after the menu item, a submenu appears.

4. Press ENTER to set the value.

5. Press the **+** or **–** button to move up or down the list and highlight the submenu item in green.

6. Press ENTER.
   The submenu parameter changes to red.

7. Press the **+** or **–** button to increase or decrease the value of the parameter.

8. Press ENTER to set the value.

9. To return to the main menu, select EXIT and press ENTER.

10. To return to normal operation, select EXIT from the main menu and press ENTER.

To exit from the OSD at any point, press the MENU button. Unsaved values return to their previous value.

6.2.1 OSD Main Menu

Main Menu	Function	Value Range	Factory Default
CONTRAST	Sets the output contrast	0-100	48
BRIGHTNESS	Sets the output brightness	0-100	35
SIZE	Sets the output size/aspect ratio	FULL, PANSCAN, LETTERBOX, UNDERSCAN, OVERSCAN	FULL
OUTPUT	Sets the output resolution	720p @60, 1080p SF30/29/25, 1080p 30/29/25/24/23, 1080p @59, 1080i @59, 720p @59, 480i @59, 576i, 1080p @50, 1080i @50, 720p @50, 1080p @60, 1080i @60	1080p @60
FACTORY RESET	Resets all parameters to factory defaults		YES
INFORMATION	Displays current input resolution, output resolution and firmware revision	SOURCE, INPUT, OUTPUT, VERSION	
AUTO SYNC OFF	When on, de-activates the output after a few minutes if no input is present. For example, when the output is connected to a projector, the projector shuts down automatically when there is no input	ON, OFF	OFF
EXIT	Closes the OSD and returns to normal operation		

6.2.2 Finetune Sub-menu

Options	Function	Value Range	Factory Default
HUE	Sets the output hue	0-100	50
SATURATION	Sets the output saturation	0-100	53
SHARPNESS	Sets the output sharpness	0-100	48
EXIT	Returns to the main menu		

6.2.3 Color Sub-menu

Options	Function	Value Range	Factory Default
RED	Sets the output red value	0-100	48
GREEN	Sets the output green value	0-100	48
BLUE	Sets the output blue value	0-100	52
EXIT	Returns to the main menu		

6.2.4 Audio Sub-menu

Options	Function	Value Range	Factory Default
DELAY	Sets the audio delay	OFF, 40ms, 110ms, 150ms	OFF
SOUND	Turns the sound on or off	ON, MUTE	ON
EXIT	Returns to the main menu		

6.2.5 OSD Sub-menu

Main Menu Submenu	Function	Value Range	Factory Default
H-POSITION	Sets the right/left position of the OSD on the screen	0-100	10
V-POSITION	Sets the up/down position of the OSD on the screen	0-100	90
TIMER	Sets the length of ime (in seconds) that the OSD remains visible on the screen	0-100	10
BACKGROUND	Sets the darkness of the OSD background	0-100	63
DISPLAY	Displays the input signal state and current output resolution on the output	INFO, ON, OFF	INFO
EXIT	Returns to the main menu		

7 Technical Specifications

INPUTS:	1 composite video on a BNC connector 1 unbalanced stereo audio on 2 RCA connectors
OUTPUTS:	2 3G HD-SDI on BNC connectors
INPUT RESOLUTIONS:	See the document “Kramer Scalers Input Output Resolutions” available for download from http://www.kramerelectronics.com
OUTPUT RESOLUTIONS:	720p @60, 1080p SF30/29/25, 1080p @30/29/25/24/23, 1080p @59, 1080i @59, 720p @59, 480i @59, 576i, 1080p @50, 1080i @50, 720p @50, 1080p @60, 1080i @60
OUTPUT SIZE:	Full, panscan, letterbox, underscan, overscan
PROCESSING DELAY:	30ms
CONTROLS:	Menu, Enter, “–“ and +/Freeze front panel buttons
POWER SOURCE:	5V DC, 1.55A
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
DIMENSIONS:	18.8cm x 11.4cm x 2.5cm (7.4” x 4.5” x 1”) W, D, H
WEIGHT:	0.47kg (1.04lbs) approx.
ACCESSORIES:	Power supply
OPTIONS:	RK-T2B 19" rack adapter
Specifications are subject to change without notice at http://www.kramerelectronics.com	

LIMITED WARRANTY

We warrant this product free from defects in material and workmanship under the following terms.

HOW LONG IS THE WARRANTY

Labor and parts are warranted for seven years from the date of the first customer purchase.

WHO IS PROTECTED?

Only the first purchase customer may enforce this warranty.

WHAT IS COVERED AND WHAT IS NOT COVERED

Except as below, this warranty covers all defects in material or workmanship in this product. The following are not covered by the warranty:

1. Any product which is not distributed by us or which is not purchased from an authorized Kramer dealer. If you are uncertain as to whether a dealer is authorized, please contact Kramer at one of the agents listed in the Web site www.kramerelectronics.com.
2. Any product, on which the serial number has been defaced, modified or removed, or on which the WARRANTY VOID IF TAMPERED sticker has been torn, reattached, removed or otherwise interfered with.
3. Damage, deterioration or malfunction resulting from:
   i) Accident, misuse, abuse, neglect, fire, water, lightning or other acts of nature
   ii) Product modification, or failure to follow instructions supplied with the product
   iii) Repair or attempted repair by anyone not authorized by Kramer
   iv) Any shipment of the product (claims must be presented to the carrier)
   v) Removal or installation of the product
   vi) Any other cause, which does not relate to a product defect
   vii) Cartons, equipment enclosures, cables or accessories used in conjunction with the product

WHAT WE WILL PAY FOR AND WHAT WE WILL NOT PAY FOR

We will pay labor and material expenses for covered items. We will not pay for the following:

1. Removal or installations charges.
2. Costs of initial technical adjustments (set-up), including adjustment of user controls or programming. These costs are the responsibility of the Kramer dealer from whom the product was purchased.
3. Shipping charges.

HOW YOU CAN GET WARRANTY SERVICE

1. To obtain service on you product, you must take or ship it prepaid to any authorized Kramer service center.
2. Whenever warranty service is required, the original dated invoice (or a copy) must be presented as proof of warranty coverage, and should be included in any shipment of the product. Please also include in any mailing a contact name, company, address, and a description of the problem(s).
3. For the name of the nearest Kramer authorized service center, consult your authorized dealer.

LIMITATION OF IMPLIED WARRANTIES

All implied warranties, including warranties of merchantability and fitness for a particular purpose, are limited in duration to the length of this warranty.

EXCLUSION OF DAMAGES

The liability of Kramer for any effective products is limited to the repair or replacement of the product at our option. Kramer shall not be liable for:

1. Damage to other property caused by defects in this product, damages based upon inconvenience, loss of use of the product, loss of time, commercial loss; or:
2. Any other damages, whether incidental, consequential or otherwise. Some countries may not allow limitations on how long an implied warranty lasts and/or do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations and exclusions may not apply to you.

This warranty gives you specific legal rights, and you may also have other rights, which vary from place to place.

NOTE: All products returned to Kramer for service must have prior approval. This may be obtained from your dealer.

This equipment has been tested to determine compliance with the requirements of:

EN-50081:	"Electromagnetic compatibility (EMC); generic emission standard. Part 1: Residential, commercial and light industry"
EN-50082:	"Electromagnetic compatibility (EMC) generic immunity standard. Part 1: Residential, commercial and light industry environment".
CFR-47:	FCC* Rules and Regulations: Part 15: “Radio frequency devices Subpart B Unintentional radiators”

CAUTION

- Servicing the machines can only be done by an authorized Kramer technician. Any user who makes changes or modifications to the unit without the expressed approval of the manufacturer will void user authority to operate the equipment.
- Use the supplied DC power supply to feed power to the machine.
- Please use recommended interconnection cables to connect the machine to other components.

  * FCC and CE approved using STP cable (for twisted pair products)

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

We welcome your questions, comments, and feedback.
Web site: www.kramerelectronics.com
E-mail: info@kramerel.com

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