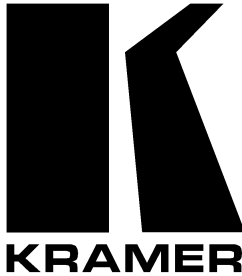


Kramer Electronics, Ltd.



USER MANUAL

Model:

FC-31

UXGA to DVI Converter

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1 Introduction

Welcome to Kramer Electronics (since 1981): a world of unique, creative and affordable solutions to the infinite range of problems that confront the video, audio and presentation professional on a daily basis. In recent years, we have redesigned and upgraded most of our line, making the best even better! Our 500-plus different models now appear in 8 Groups¹, which are clearly defined by function.

Congratulations on purchasing your Kramer MultiTOOLS®: **FC-31 UXGA to DVI Converter**, which is ideal for:

- Home theater, presentation and multimedia applications
- Rental and staging

The package includes the following items:

- **FC-31 UXGA to DVI Converter**
- Power adapter (12V DC Input)
- This user manual²

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 cables³



Caution – No operator-serviceable parts inside unit.

Warning – Use only the Kramer Electronics input power wall adapter that is provided with this unit⁴.

Warning – Disconnect power and unplug unit from wall before installing or removing device or servicing unit.

1 GROUP 1: Distribution Amplifiers; GROUP 2: Video and Audio Switchers, Matrix Switchers and Controllers; GROUP 3: Video, Audio, VGA/XGA Processors; GROUP 4: Interfaces and Sync Processors; GROUP 5: Twisted Pair Interfaces; GROUP 6: Accessories and Rack Adapters; GROUP 7: Scan Converters and Sealers; and GROUP 8: Cables and Connectors

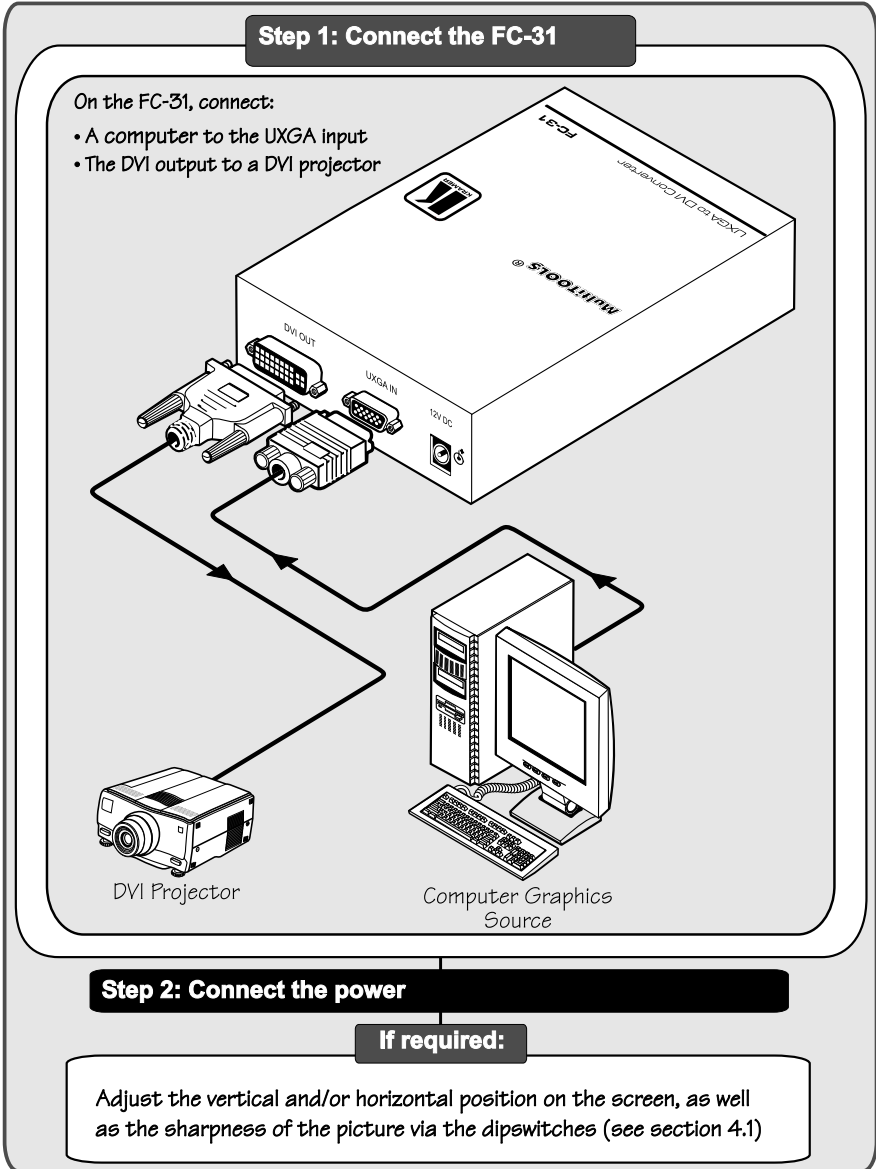
2 Download up-to-date Kramer user manuals from the Internet at this URL: <http://www.kramerelectronics.com>

3 The complete list of Kramer cables is on our Web site at <http://www.kramerelectronics.com>

4 For example: model number AD2512C, part number 2535-000251

2.1 Quick Start

This quick start chart summarizes the basic setup and operation steps.



3 Overview

The Kramer MultiTOOLS® **FC-31 UXGA to DVI Converter** is a high quality converter for converting an analog computer graphics signal on an HD15 connector to a digital DVI-D signal. In particular, the **FC-31**:

- Includes dipswitches that let you adjust the horizontal position, the vertical position, and/or the sharpness of the image
- Supports an input resolution of up to UXGA
- Is 12VDC fed

Achieving the best performance means:

- Connecting only good quality connection cables, thus avoiding interference, deterioration in signal quality due to poor matching, and elevated noise levels (often associated with low quality cables)
- Avoiding interference from neighboring electrical appliances and positioning your **FC-31** away from moisture, excessive sunlight and dust

4 Your FC-31 UXGA to DVI Converter

Figure 1 and Table 1 define the **FC-31**:

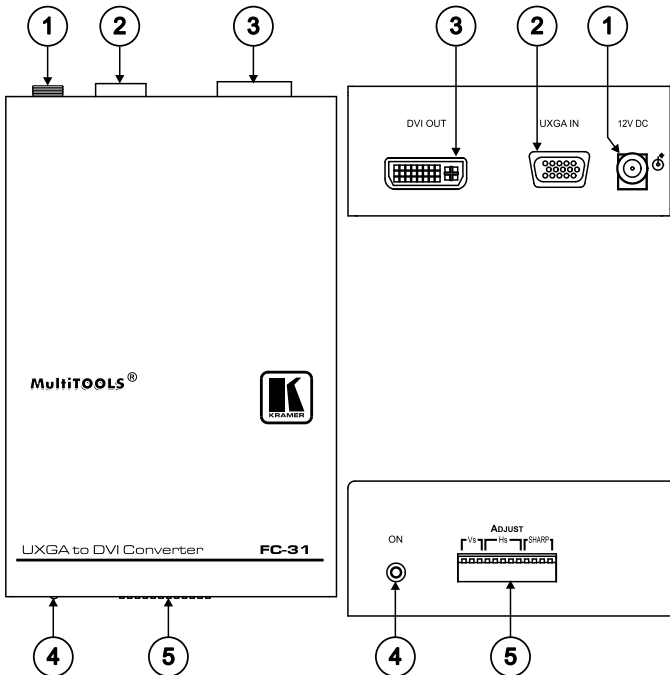


Figure 1: FC-31 UXGA to DVI Converter

Table 1: FC-31 UXGA to DVI Converter Features

#	Feature	Function
1	12V DC	+12V DC connector for powering the unit
2	UXGA IN HD15 Connector	Connects to the computer graphics source
3	DVI OUT Connector	Connects to the DVI acceptor
4	ON LED	Illuminates when receiving power
5	ADJUST Dipswitches	Used to adjust the vertical and/or horizontal position on the screen, and/or the sharpness of the picture (see section 4.1)

4.1 Dipswitch Settings

Figure 2 and Table 2 define the dipswitches:

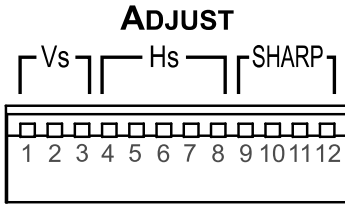


Table 2: Dipswitch Definitions

DIPs	Set to adjust the:
1 to 3	(Vs) Vertical position on the screen
4 to 8	(Hs) Horizontal position on the screen
9 to 12	(SHARP) Sharpness of the picture

Figure 2: Dipswitch Definitions

To adjust the vertical position of the image, set the dipswitches as required, according to Table 3:

Table 3: (Vs) Vertical Positioning Dipswitch Settings

In this state:	DIP 1	DIP 2	DIP 3
Shift Down (4 steps)	OFF	OFF	OFF
Shift Down (3 steps)	ON	OFF	OFF
Shift Down (2 steps)	OFF	ON	OFF
Shift Down (1 step)	ON	ON	OFF
No shift	OFF	OFF	ON
Shift Up (1 step)	ON	OFF	ON
Shift Up (2 steps)	OFF	ON	ON
Shift Up (3 steps)	ON	ON	ON

To adjust the horizontal position of the image, set the dipswitches as required, according to Table 4:

Table 4: (Hs) Horizontal Positioning Dipswitch Settings

In this state:	DIP 4	DIP 5	DIP 6	DIP 7	DIP 8
Shift Left (16 steps)	OFF	OFF	OFF	OFF	OFF
Shift Left (15 steps)	ON	OFF	OFF	OFF	OFF
Shift Left (14 steps)	OFF	ON	OFF	OFF	OFF
Shift Left (13 steps)	ON	ON	OFF	OFF	OFF
Shift Left (12 steps)	OFF	OFF	ON	OFF	OFF
Shift Left (11 steps)	ON	OFF	ON	OFF	OFF
Shift Left (10 steps)	OFF	ON	ON	OFF	OFF
Shift Left (9 steps)	ON	ON	ON	OFF	OFF
Shift Left (8 steps)	OFF	OFF	OFF	ON	OFF
Shift Left (7 steps)	ON	OFF	OFF	ON	OFF
Shift Left (6 steps)	OFF	ON	OFF	ON	OFF
Shift Left (5 steps)	ON	ON	OFF	ON	OFF
Shift Left (4 steps)	OFF	OFF	ON	ON	OFF
Shift Left (3 steps)	ON	OFF	ON	ON	OFF
Shift Left (2 steps)	OFF	ON	ON	ON	OFF
Shift Left (1 step)	ON	ON	ON	ON	OFF
In this state:	DIP 4	DIP 5	DIP 6	DIP 7	DIP 8
No Shift	OFF	OFF	OFF	OFF	ON
Shift Right (1 step)	ON	OFF	OFF	OFF	ON
Shift Right (2 steps)	OFF	ON	OFF	OFF	ON
Shift Right (3 steps)	ON	ON	OFF	OFF	ON
Shift Right (4 steps)	OFF	OFF	ON	OFF	ON
Shift Right (5 steps)	ON	OFF	ON	OFF	ON
Shift Right (6 steps)	OFF	ON	ON	OFF	ON
Shift Right (7 steps)	ON	ON	ON	OFF	ON
Shift Right (8 steps)	OFF	OFF	OFF	ON	ON
Shift Right (9 steps)	ON	OFF	OFF	ON	ON
Shift Right (10 steps)	OFF	ON	OFF	ON	ON
Shift Right (11 steps)	ON	ON	OFF	ON	ON
Shift Right (12 steps)	OFF	OFF	ON	ON	ON
Shift Right (13 steps)	ON	OFF	ON	ON	ON
Shift Right (14 steps)	OFF	ON	ON	ON	ON
Shift Right (15 steps)	ON	ON	ON	ON	ON

To sharpen the image, adjust the dipswitches, as defined in Table 5:

Table 5: Sharpness Dipswitch Settings

DIP 9	DIP 11	DIP 10	DIP 12
OFF	OFF	OFF	OFF
ON	OFF	OFF	OFF
OFF	ON	OFF	OFF
ON	ON	OFF	OFF
OFF	OFF	ON	OFF
ON	OFF	ON	OFF
OFF	ON	ON	OFF
ON	ON	ON	OFF
OFF	OFF	OFF	ON
ON	OFF	OFF	ON
OFF	ON	OFF	ON
ON	ON	OFF	ON
OFF	OFF	ON	ON
ON	OFF	ON	ON
OFF	ON	ON	ON
ON	ON	ON	ON

5 Connecting the FC-31 UXGA to DVI Converter

To connect your **FC-31 UXGA to DVI Converter**, as the example in Figure 3 illustrates, do the following¹:

1. Connect a computer graphics source (for example, a computer) to the UXGA IN connector.
2. Connect the DVI OUT connector to a DVI projector.
3. Connect the 12V DC power adapter (wall transformer) to the 12V DC socket and connect the transformer to the mains electricity.

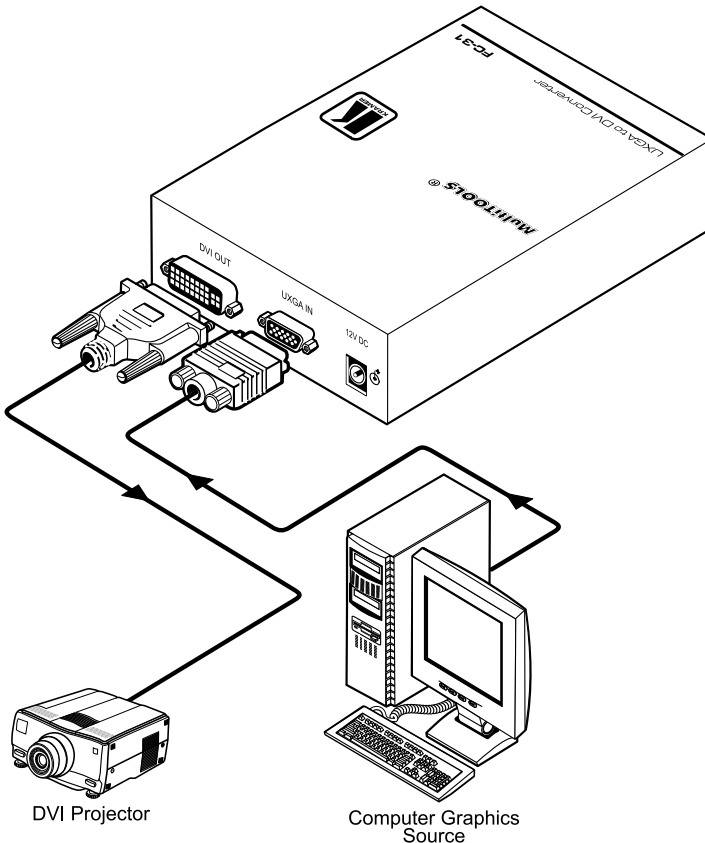


Figure 3: Connecting the FC-31 UXGA to DVI Converter

¹ Switch OFF the power on each device before connecting it to your FC-31. After powering up your FC-31, switch on the power on each device

6 Technical Specifications

Table 6 includes the technical specifications:

Table 6: Technical Specifications¹ of the FC-31 UXGA to DVI Converter

INPUT:	1 UXGA on an HD15F connector
OUTPUT:	1 DVI ² , 1.2Vpp on a DVI Molex 24pin female connector; DDC signal 5Vpp (TTL)
ANALOG RESOLUTION:	VGA70 (720x400) @ 70Hz; VGA (640x480) @ 60Hz / 75Hz; SVGA (800x600) @ 60Hz / 75Hz / 85Hz; XGA (1024x768) @ 60Hz / 75Hz / 85Hz; SXGA (1280x1024) @ 60Hz / 75Hz / 85Hz; UXGA (1600x1200) @ 60Hz
DVI BANDWIDTH:	1.65GHz
CONTROLS:	Dipswitches
COUPLING:	DC
POWER SOURCE:	12V, 230mA
DIMENSIONS:	10.7cm x 4.0cm x 15.9cm (4.20" x 1.59" x 6.26") W, D, H
WEIGHT:	0.15kg. (0.55lbs.) approx.
ACCESSORIES:	Power supply

¹ Specifications are subject to change without notice

² On a DVI-I connector. Note that only the digital signal (DVI-D) is available on the DVI connector

LIMITED WARRANTY

Kramer Electronics (hereafter *Kramer*) warrants 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 Kramer, 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.
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.





For the latest information on our products and a list of Kramer distributors, visit our Web site: www.kramerelectronics.com, where updates to this user manual may be found. We welcome your questions, comments and feedback.



Caution

Safety Warning:

Disconnect the unit from the power supply before opening/servicing.



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