

Kramer Electronics, Ltd.



USER MANUAL

Model:

FC-7501

Analog Video to SDI Converter

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1 Introduction

Dedication by Kramer Electronics since 1981, to the development and manufacture of high quality video/audio equipment, makes the Kramer line an integral part of the finest production and presentation facilities in the world. In recent years, Kramer has redesigned and upgraded most of the line, making the best even better! The Kramer line of professional video/audio electronics is one of the most versatile and complete available, and is a true leader in terms of quality, workmanship, price/performance ratio and innovation.

In addition to our high quality converters, we also offer excellent switchers and matrices, distribution amplifiers, remote controllers, processors, interfaces and computer-related products.

Congratulations on purchasing your Kramer **FC-7501 Analog Video to SDI Converter**, which is ideal for broadcast and production video studios, postproduction and duplication studios, and non-linear editing.

The package includes the following items:

- **FC-7501 Analog Video to SDI Converter**
- Power supply
- This user manual¹
- Kramer concise product catalog/CD

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 cables²

3 Overview

The high quality **FC-7501** is a multi-standard converter that converts professional quality video to serial digital video (SDI).

¹ Download up-to-date Kramer user manuals from the Internet at this URL: <http://www.kramerelectronics.com/manuals.html>

² The complete list of Kramer cables is on our Web site at <http://www.kramerelectronics.com> (click "Cables and Connectors" in the Products section)

The following analog formats are supported:

- Composite video
- s-Video
- Component video (Y, B-Y, R-Y, sometimes called YUV or Y, P_b, P_r)

The **FC-7501** maintains the high level of professional video quality, prevalent with component video output Betacam decks and DVD players, when converting to SDI.

The **FC-7501** automatically detects the input standard, generating the appropriate output:

- For component video input, 50Hz/625 line (interlaced) and 60Hz/525 line (interlaced) are supported
- For YC and CV inputs, all variations of PAL, NTSC and SECAM are supported

In addition, the **FC-7501**:

- Converts the SDI on 2 buffered and reclocked SDI outputs
- Has input looping connectors and a 75 Ω /Hi-Z input termination switch
- Has an RS-232 port
- Can be controlled via a user-friendly Windows® based program that can modify video parameters such as contrast, saturation and hue, which may be stored in non-volatile memory
- Includes true 10-bit digitizing - ideal for broadcast applications

To achieve the best performance:

- Connect 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)
- Avoid interference from neighboring electrical appliances that may adversely influence signal quality and position your Kramer **FC-7501** in a location free from moisture and away from excessive sunlight and dust

4 Your Analog Video to SDI Converter

Figure 1, Table 1, and Table 2, define the **FC-7501**:

Your Analog Video to SDI Converter

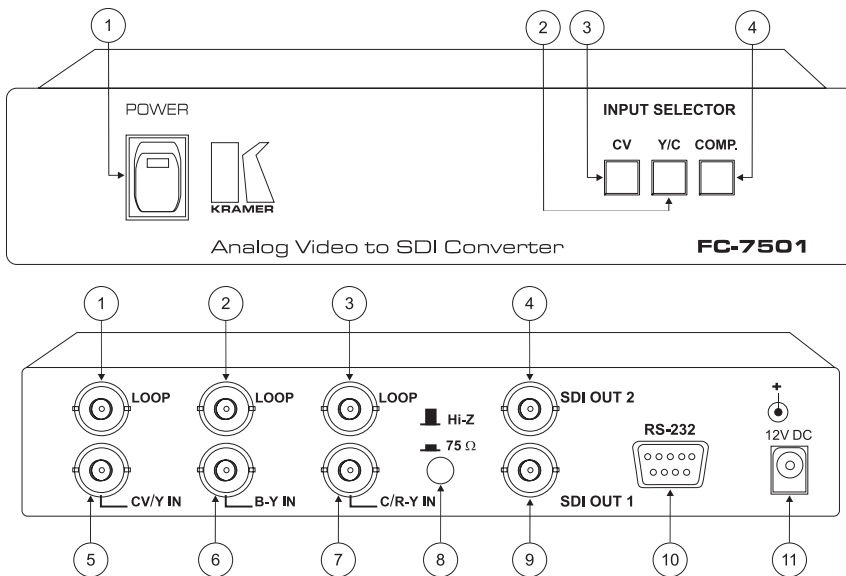


Figure 1: FC 7501 Analog Video to SDI Converter

Table 1: Front Panel FC 7501 Analog Video to SDI Converter

#	Feature	Function
1	POWER Switch	Illuminated switch supplying power to the unit
2	Y/C Button	Press to select the s-Video (Y/C) source
3	CV Button	Press to select the composite video source
4	COMP. Button	Press to select the component source

Table 2: Rear Panel FC 7501 Analog Video to SDI Converter

#	Feature	Function
1	CV/Y LOOP BNC Connector	Connects to the composite, s-Video ¹ or component ² video loop
2	B-Y LOOP BNC Connector	Connects to the component ² video loop
3	C/R-Y LOOP BNC Connector	Connects to the s-Video ¹ or component ² video loop
4	SDI OUT 2 BNC Connector	Connects to the serial digital video acceptor 2
5	CV/Y IN BNC Connector	Connects to the composite, s-Video ¹ or component ² video source
6	B-Y IN BNC Connector	Connects to the component ² video source
7	C/R-Y IN BNC Connector	Connects to the s-Video ¹ or component ² video source
8	Hi-Z / 75 Ω Button	Press to terminate at 75Ω or release for looping ³
9	SDI OUT 1 BNC Connector	Connects to the serial digital video acceptor 1
10	RS-232 Port	Connects to the PC or the Remote Controller
11	12V DC	Power Connector 12VDC, 320mA

1 For s-Video, connect the CV/Y and the C/R-Y connectors

2 For component video, connect all 3 connectors: Y, B-Y, and R-Y

3 Push in to terminate the input. Release when the input extends to another unit

5 Using Your Analog Video to SDI Converter

You can use your **FC-7501**, to convert professional quality composite video, s-Video or component video (as the example in Figure 2 illustrates) to one or two SDI video outputs.

To convert component video to 2 SDI video outputs, do the following:

1. Connect a component video source (for example, a Betacam component VCR) to the component video BNC input connectors, Y, B-Y, and R-Y.
2. Connect both SDI outputs to SDI acceptors as follows (when only one SDI output is required, use either of the SDI outputs of the **FC-7501**, and leave the other SDI output unconnected):
 - Connect the SDI OUT 1 BNC connector to an SDI acceptor (for example, a Non-Linear Editor)
 - Connect the SDI OUT 2 BNC connector to the second SDI acceptor (for example, an SDI monitor)
3. Connect the component video loop connectors, LOOP Y, LOOP B-Y, and LOOP R-Y, to a component monitor, and release the Hi-Z/75Ω button to Hi-Z (optional).

When the inputs are not looped, the Hi-Z/75Ω button should be pressed.
4. Connect the 12V DC power adapter to the power socket and connect the adapter to the mains electricity.
5. Turn on the power and press the COMP. (Component video) button.

The component video signal converts to SDI at both SDI OUT 1 and SDI OUT 2.

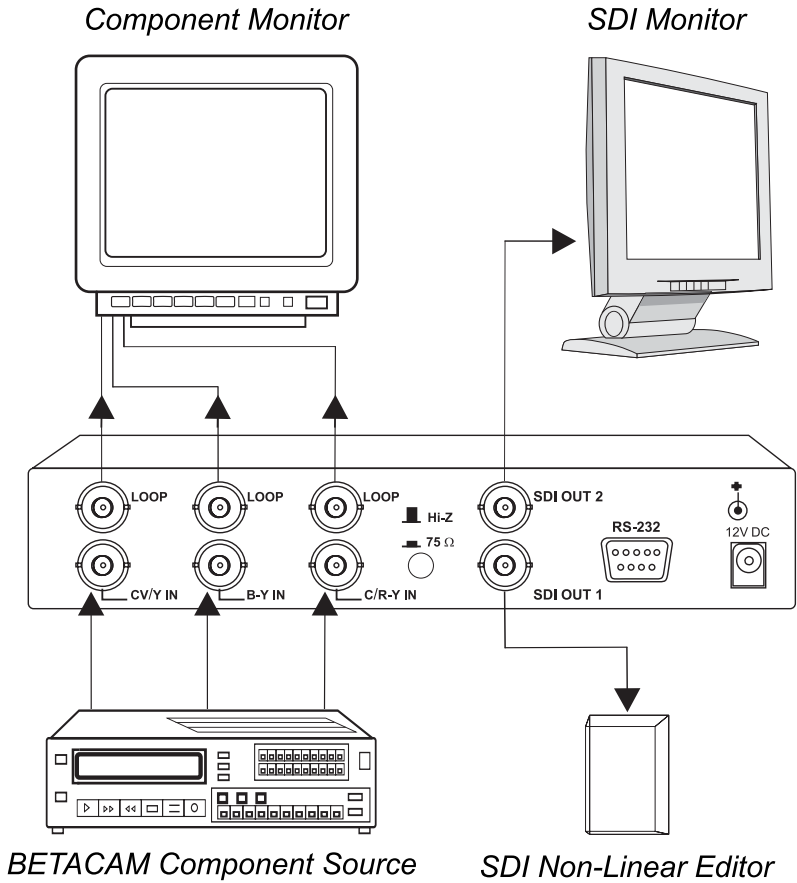


Figure 2: Connecting an FC-7501 Analog Video to SDI Converter

6 Technical Specifications

Table 3 includes the technical specifications:

Table 3: Technical specifications¹ of the FC 7501 Analog Video to SDI Converter

INPUTS:	1 composite video/Y: 1Vpp/75Ω looping on BNC connectors with a termination switch 1 (B-Y): 0.7Vpp/75Ω looping on BNC connectors with a termination switch 1 (R-Y)/C: 0.7Vpp/0.3Vpp/75Ω looping on BNC connectors with a termination switch
VIDEO STANDARDS:	CV, YC: NTSC (M, Japan, 4.43), PAL (B, D, G, H, I, M, N, Nc) and SECAM (B, D, G, K, K1, L) Component: 50 Hz/625 line, 60 Hz/525 line
OUTPUTS:	2 SDI on BNC connectors
BANDWIDTH:	0.2dB to 5MHz; 1dB to 6MHz
LUMINANCE NON-LINERARITY:	1% (worst case)
K-FACTOR:	0.1%
S/N RATIO:	57dB (worst case)
CHROMA/LUMA DELAY:	<10ns
SDI PIXEL JITTER:	<500ps (10Hz HPF) with PLL option board <1ns (10kHz HPF) without PLL option board
INPUT COUPLING:	DC or AC via internal jumpers
POWER SOURCE:	12 VDC, 320mA
DIMENSIONS:	22cm x 18cm x 4.5cm (8.7" x 7" x 1.7") W, D, H.
WEIGHT:	1.3 kg (2.9 lbs.) approx.
ACCESSORIES:	Power supply
OPTIONS:	19" rack adapter RK-80

¹ Specifications are subject to change without notice

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 three 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.

**Updates to this user manual may be found at
<http://www.kramerelectronics.com/manuals.html>.**

We welcome your questions, comments and feedback.

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