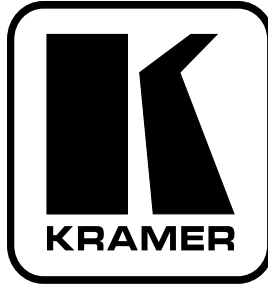


Kramer Electronics, Ltd.



USER MANUAL

Models:

401C, Y/C to Composite Converter / DA

401DN, Composite to Y/C Decoder

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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 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 groups¹ that are clearly defined by function.

Congratulations on purchasing your Kramer **401C** *Y/C to Composite Converter / DA* or the **401DN** *Composite to Y/C Decoder*. These products are ideal for:

- Professional presentation and display systems
- Video duplication studios, delivering high quality s-Video duplications²
- Teleconference systems
- Conversion from s-Video to composite video (using the **401C**) or for conversion from composite video to s-Video (using the **401DN**)

The package includes the following items:

- **401C** or **401DN**
- Power adapter (12V DC Input) and this user manual³

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 cables⁴

2.1 Quick Start

This quick start chart summarizes the basic setup and operation steps for the **401C** and **401DN**.

1 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; GROUP 11: Sierra Products

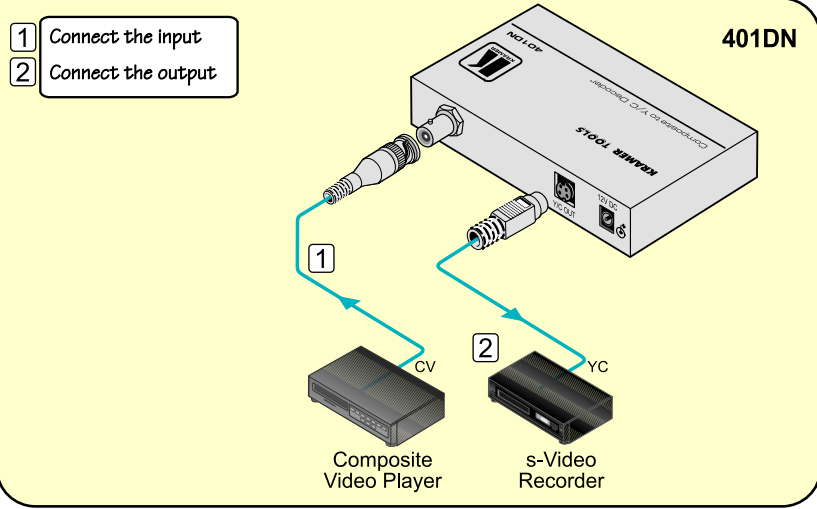
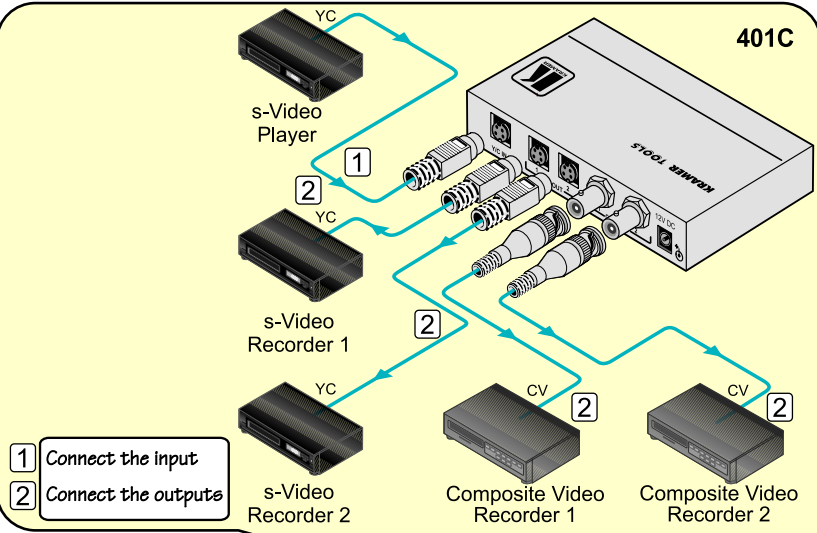
2 The 401C also provides composite video outputs for simple monitoring

3 Download up-to-date Kramer user manuals from our Web site at <http://www.kramerelectronics.com>

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

Step 1: Connect the Machines

Quick Start: 401C, 401DN



Step 2: Connect the power

3 Overview

The Kramer TOOLS **401C** and **401DN** are high performance format converters for s-Video (Y/C) and composite video signals.

The **401C** converts an s-Video input to two composite outputs as well as simultaneously to two s-Video (Y/C) outputs, with no signal degradation.

The **401DN** converts a composite video input to one s-Video (Y/C) output with full compensation for Y/C delay.

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 and position your Kramer **401C/401DN** away from moisture, excessive sunlight and dust



Caution – No operator-serviceable parts inside unit.

Warning – Use only the Kramer Electronics input power wall adapter that is provided with this unit¹.

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

¹ For example: model number AD2512C, part number 2535-000251

4 Your 401C and 401DN

This section describes the **401C** and the **401DN**.

4.1 Your 401C

Figure 1 and Table 1 describe the **401C**:

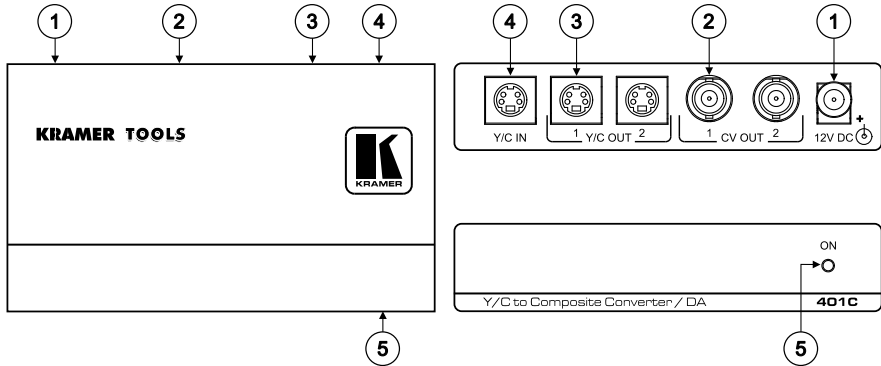


Figure 1: 401C Y/C to Composite Converter / DA

Table 1: 401C Y/C to Composite Converter / DA Features

#	Feature	Function
1	12V DC	+12V DC connector for powering the unit
2	CV OUT BNC Connectors	Connect to the composite video acceptors (1 and 2)
3	Y/C OUT 4-pin Connectors	Connect to the s-Video acceptors (1 and 2)
4	Y/C IN 4-pin Connector	Connect to the s-Video source
5	ON	Lights when the power is connected

4.2 Your 401DN

Figure 2 and Table 2 describe the **401DN**:

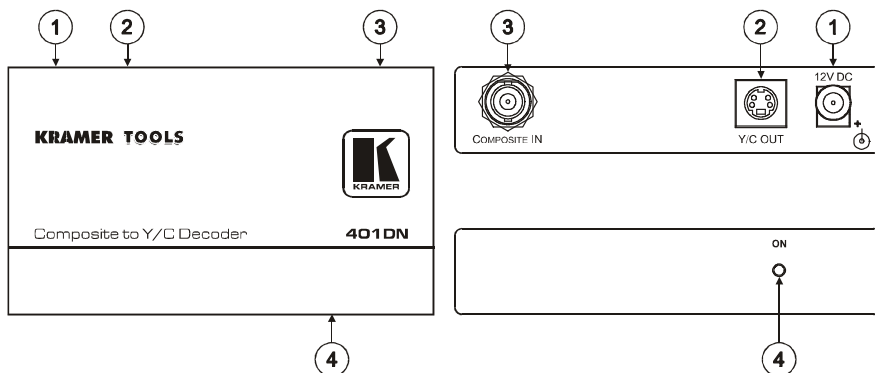


Figure 2: 401DN Composite to Y/C Decoder

Table 2: 401DN Composite to Y/C Decoder Features

#	Feature	Function
1	12V DC	+12V DC connector for powering the unit
2	Y/C OUT 4-pin Connector	Connect to the s-Video acceptor
3	COMPOSITE IN BNC Connector	Connect to the composite video source
4	ON LED	Lights when the power is connected

5 Connecting the 401C and the 401DN

The following sections describe how to connect the:

- **401C Y/C to Composite Converter / DA** (see section 5.1)
- **401DN Composite to Y/C Decoder** (see section 5.2)

5.1 Connecting the 401C

To connect your **401C** as illustrated in the example in Figure 3, do the following¹:

1. Connect an s-Video source (for example, an s-Video player) to the Y/C IN 4-pin connector.
2. Connect the outputs² as follows:
 - The Y/C OUT 4-pin connectors to two s-Video acceptors (for example, s-Video recorder 1 and s-Video recorder 2)
 - The COMPOSITE OUT BNC connectors to two CV acceptors (for example, composite video recorder 1 and composite video recorder 2)
3. Connect the 12V DC power adapter to the power socket and connect the adapter to the mains electricity.

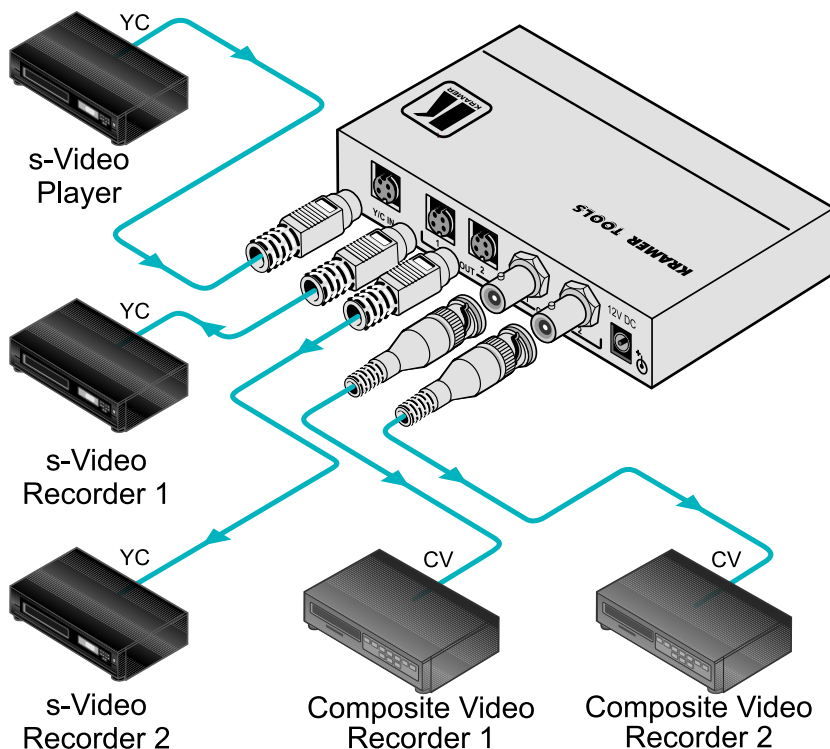


Figure 3: Connecting the 401C

1 Switch OFF the power on each device before connecting it to your 401C. After powering up your 401C, switch on the power on each device

2 You do not have to connect all the outputs

5.2 Connecting the 401DN

To connect your **401DN** as illustrated in the example in Figure 4, do the following¹:

1. Connect a composite video source (for example, a composite video player) to the COMPOSITE IN BNC connector.
2. Connect the Y/C OUT 4-pin connector to an s-Video acceptor (for example, an s-Video recorder).
3. Connect the 12V DC power adapter to the power socket and connect the adapter to the mains electricity.

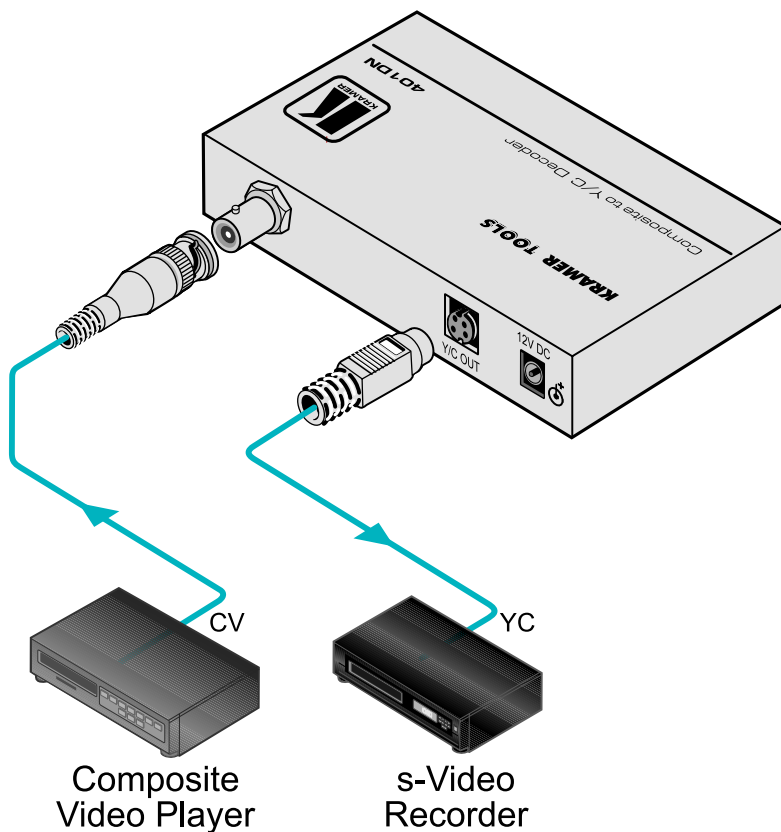


Figure 4: Connecting the 401DN

¹ Switch OFF the power on each device before connecting it to your 401DN. After powering up your 401DN, switch on the power on each device

6 Technical Specifications

Table 3 includes the technical specifications of the **401C**.

Table 3: Technical Specifications¹ of the 401C

INPUT:	1 s-Video, 1Vpp/75Ω (Y), 0.3Vpp/75Ω (C) on a 4-pin connector
OUTPUTS:	2 s-Video, 1Vpp/75Ω (Y), 0.3Vpp/75Ω (C) on 4-pin connectors 2 composite video, 1Vpp/75Ω on BNC connectors
MAX. OUTPUT LEVEL:	1.4Vpp
VIDEO BANDWIDTH (-3dB):	160MHz (Y)
NON-LINEARITY:	0.05%.
DIFF. GAIN:	0.08%
DIFF. PHASE:	0.08 Deg.
K-FACTOR:	0.1%
VIDEO S/N RATIO:	Better than 80dB (Y channel)
POWER SOURCE:	12V DC, 60mA
DIMENSIONS:	12cm x 7.5cm x 2.5cm (4.7" x 2.95" x 0.98") W, D, H.
WEIGHT:	0.28kg (0.62lbs) approx.
ACCESSORIES:	Power adapter, mounting bracket
OPTIONS:	RK-3T 19" rack adapter

Table 4 includes the technical specifications of the **401DN**.

Table 4: Technical Specifications¹ of the 401DN

INPUT:	1 composite video, 1Vpp/75Ω on a BNC connector
OUTPUT:	1 s-Video, 1Vpp/75Ω (Y), 0.3Vpp/75Ω (C) on a 4-pin connector
MAX. OUTPUT LEVEL:	1.5Vpp/75Ω (Y)
BANDWIDTH (-3dB):	3.5MHz (Y)
DIFF. GAIN:	0.8%
DIFF. PHASE:	0.1 Deg.
K-FACTOR:	2%
LUMA S/N RATIO:	77dB
COUPLING:	AC
POWER SOURCE:	12V DC, 90mA
DIMENSIONS:	12cm x 7.5cm x 2.5cm (4.7" x 2.95" x 0.98") W, D, H.
WEIGHT:	0.3kg. (0.66lbs.) approx.
ACCESSORIES:	Power adapter, mounting bracket
OPTIONS:	RK-3T 19" rack adapter

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 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, 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: 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.



Kramer Electronics, Ltd.

Web site: www.kramerelectronics.com

E-mail: info@kramerel.com

P/N: 2900-000158 REV 3