

Kramer Electronics, Ltd.



USER MANUAL

Models:

OC-1N, Video Isolator

OC-2, Dual Channel Video Isolator

OC-4, Quad Channel Video Isolator

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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 **OC-1N Video Isolator** and/or **OC-2 Dual Channel Video Isolator** and/or **OC-4 Quad Channel Video Isolator**. This product is ideal for:

- Large display systems with sources and displays/projectors on different power circuits
- Video field production sessions
- Hospital and other critical applications requiring complete isolation
- Eliminating video hum bars and noise

The package includes the following items:

- **OC-1N Video Isolator** and/or **OC-2 Dual Channel Video Isolator** and/or **OC-4 Quad Channel Video Isolator**
- Power connector
- 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

2.1 Quick Start

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

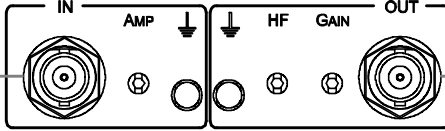
1 GROUP 1: Distribution Amplifiers; GROUP 2: Switchers and Matrix Switchers; GROUP 3: Control Systems; GROUP 4: Format/Standards Converters; GROUP 5: Twisted-Pair Solutions; GROUP 6: Specialty AV Products; GROUP 7: Scan Converters and Scalers; GROUP 8: Cables and Connectors; GROUP 9: Room Connectivity; GROUP 10: Accessories and Rack Adapters; GROUP 11: Sierra Products

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

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

Step 1: Connect the Inputs and the outputs

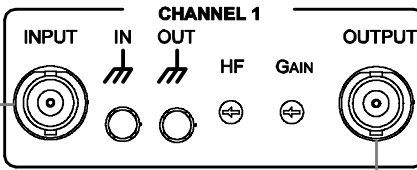
Connect the input.



OC-1N

Connect the output.

Connect the input.



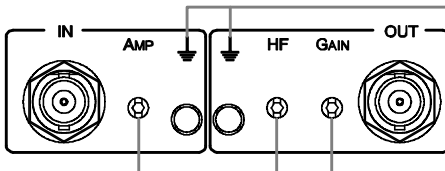
OC-2 (two channels) and OC-4 (four channels)

Connect the output.

Step 2: Connect the power

Step 3: Set the unit

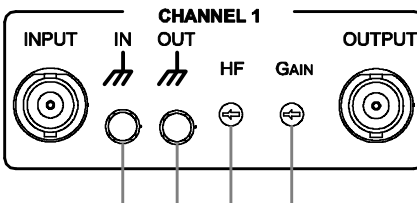
Adjust the AMP, HF and GAIN.



OC-1N

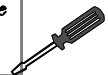
Press/release the ground buttons.

Press/release the ground buttons.



OC-2 (two channels) and OC-4 (four channels)

Adjust the HF and GAIN.



3 Overview

The Kramer **OC-1N**, **OC-2** and **OC-4** are high quality video isolator units for one, two and four video or sync signals, respectively. They provide complete isolation between devices thus eliminating video hum, ground loops, and DC offsets which can degrade picture quality. The video isolators let the user select which GROUND becomes floating - input, output, both or none, using the rear panel buttons.

In addition, the **Video Isolator**:

- Has a bandwidth of 20MHz (-3dB)
- Features Opto-Isolator Circuitry providing an extremely linear response and wide frequency range compared to traditional transformer based units
- Includes Level (Gain) and EQ (Peaking) Controls per channel

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 **Video Isolator** away from moisture, excessive sunlight and dust

4 Your Video Isolators

This section defines the **OC-1N** (see section 4.1), the **OC-2** (see section 4.2) and the **OC-4** (see section 4.3).

4.1 The OC-1N Video Isolator

Figure 1 and Table 1 define the **OC-1N**:

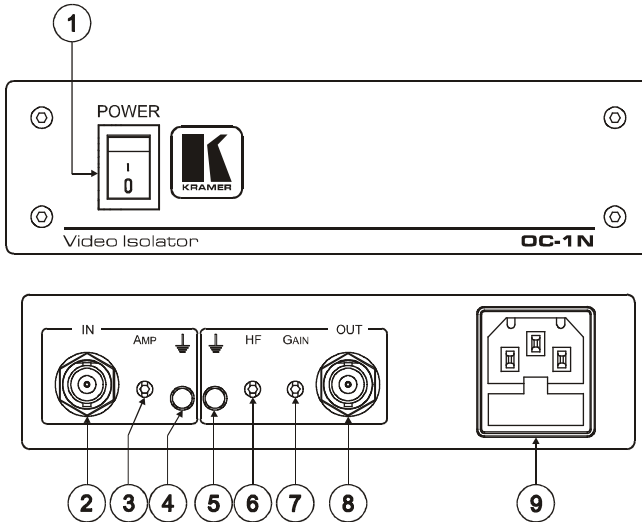


Figure 1: OC-1N Video Isolator

Table 1: OC-1N Video Isolator Features

#	Feature	Function	
1	POWER Switch	Illuminated switch for turning the unit ON or OFF	
2	IN	BNC Connector	Connect to the video source
		AMP Trimmer	Adjust ¹ the video input signal level
		Ground Button	Release to "float" the input signal
5	OUT	Ground Button	Release to "float" the output signal
		HF Trimmer	Adjust ¹ cable equalization level
		GAIN Trimmer	Adjust ¹ the video output gain
		BNC Connector	Connect to the video acceptor
9	Power Connector with Fuse	AC connector enabling power supply to the unit	

¹ Insert a screwdriver into the hole and carefully rotate it, to trim the level

4.2 The OC-2 Dual Channel Video Isolator

Figure 2 and Table 2 define the **OC-2**:

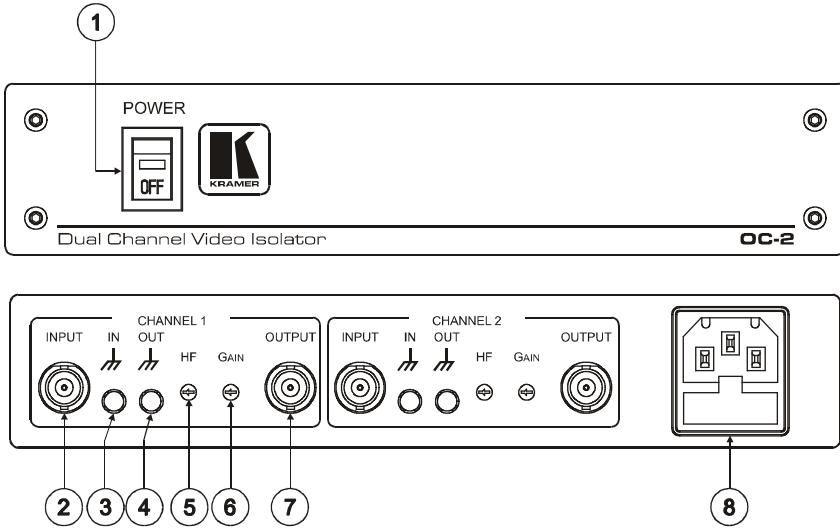


Figure 2: OC-2 Dual Channel Video Isolator

Table 2: OC-2 Dual Channel Video Isolator Features

#	Feature	Function	
1	POWER Switch	Illuminated switch for turning the unit ON or OFF	
2	CHANNEL 1 / CHANNEL 2	INPUT BNC Connector	Connect to the video source
3		IN Ground Button	Release to "float" the input signal
4		OUT Ground Button	Release to "float" the output signal
5		HF Trimmer	Adjust ¹ the cable equalization level
6		GAIN Trimmer	Adjust ¹ the video output gain
7		OUTPUT BNC Connector	Connect to the video acceptor
8	Power Connector with Fuse	AC connector enabling power supply to the unit	

4.3 The OC-4 Quad Channel Video Isolator

Figure 3 illustrates the **OC-4** and Table 3 defines the front and rear panels.

¹ Insert a screwdriver into the hole and carefully rotate it, to trim the level

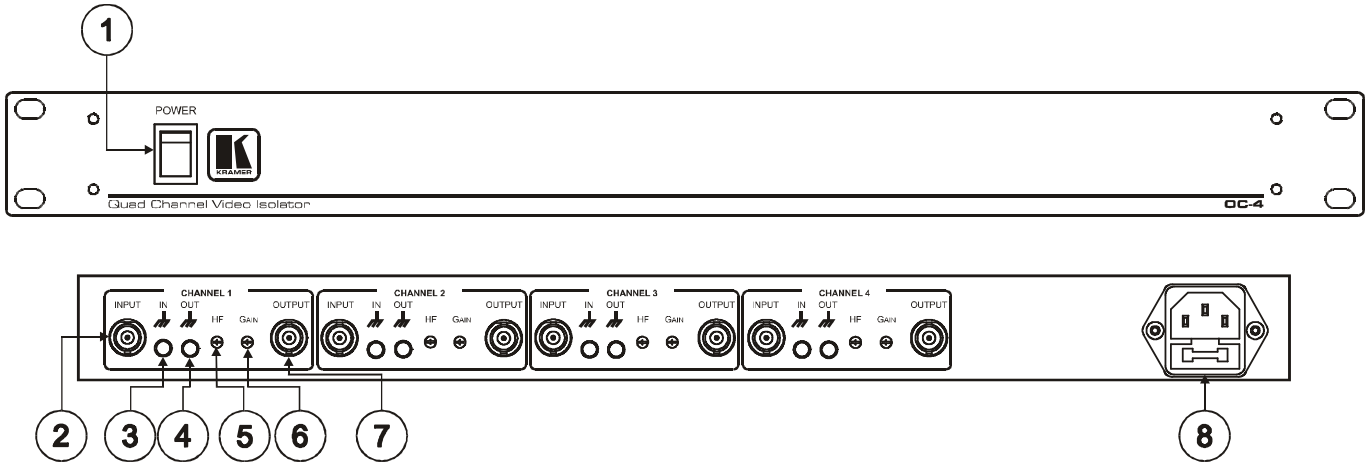


Figure 3: OC-4 Quad Channel Video Isolator

Table 3: OC-4 Quad Channel Video Isolator Features

#	Feature	Function	
1	POWER Switch	Illuminated switch for turning the unit ON or OFF	
2	CHANNEL 1, CHANNEL 2, CHANNEL 3, CHANNEL 4	INPUT BNC Connector	Connect to the video source
3		IN Ground Button	Release to "float" the input signal
4		OUT Ground Button	Release to "float" the output signal
5		HF Trimmer	Adjust ¹ the cable equalization level
6		GAIN Trimmer	Adjust ¹ the video output gain
7		OUTPUT BNC Connector	Connect to the video acceptor
8	Power Connector with Fuse	AC connector enabling power supply to the unit	

5 Connecting the Video Isolator

This section describes how to connect the:

- **OC-1N**, see section 5.1
- **OC-2**, see section 5.2
- **OC-4**, see section 5.3

¹ Insert a screwdriver into the hole and carefully rotate it, to trim the level

5.1 Connecting the OC-1N Video Isolator

To connect the **OC-1N**, as illustrated in the example in Figure 4, do the following¹:

1. Connect a video source (for example, a camcorder) to the IN BNC connector.
2. Connect the OUT BNC connector to a video acceptor (for example, a display).
3. Connect the power.
4. If required:
 - Adjust² the video input AMP level and/or the video output, GAIN and HF levels
 - Press or release the ground input and/or output GND buttons

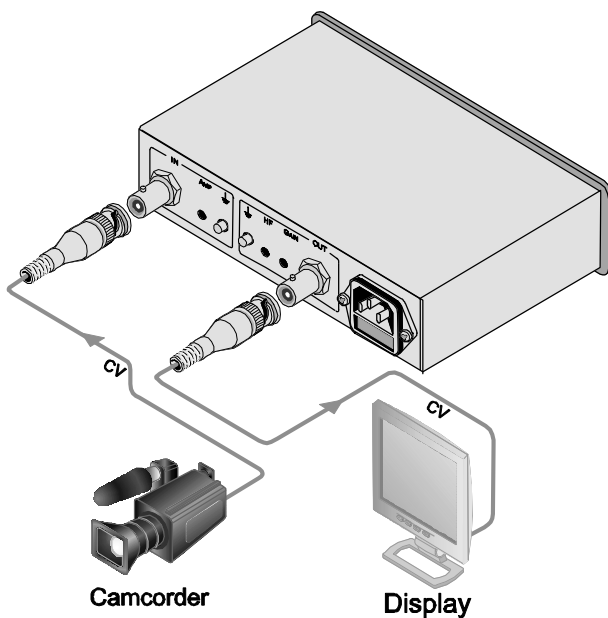


Figure 4: Connecting the OC-1N Video Isolator

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

2 Use a screwdriver to carefully rotate the trimmer, adjusting the appropriate level

5.2 Connecting the OC-2 Dual Channel Video Isolator

To connect the **OC-2**, as illustrated in the example in Figure 5, do the following¹:

1. Connect up to two video sources:
 - A video source (for example, a video player) to the CHANNEL 1 INPUT BNC connector
 - A video source (for example, a camcorder) to the CHANNEL 2 INPUT BNC connector
2. Connect up to two video acceptors:
 - The CHANNEL 1 OUTPUT BNC connector to a video acceptor (for example, a display)
 - The CHANNEL 2 OUTPUT BNC connector to a video acceptor (for example, a projector)
3. Connect the power.
4. If required:
 - Adjust² the video input and/or output GAIN and HF levels
 - Press or release the ground input and/or output GND buttons

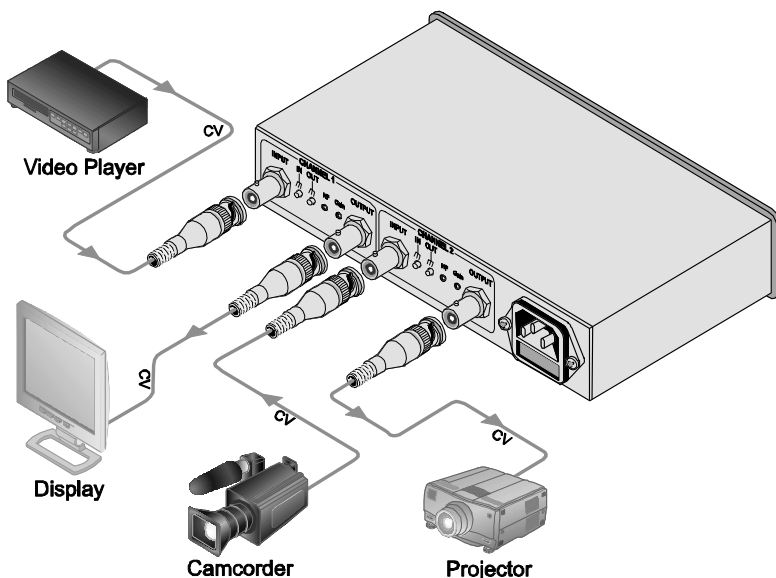


Figure 5: Connecting the OC-2 Dual Channel Video Isolator

1 Switch OFF the power on each device before connecting it to your OC-2. After powering up your OC-2, switch on the power on each device

2 Use a screwdriver to carefully rotate the trimmer, adjusting the appropriate level

5.3 Connecting the OC-4 Quad Channel Video Isolator

To connect¹ the **OC-4**, as illustrated in the example in Figure 6, do the following²:

1. Connect up to four video sources:
 - A video source (for example, a camcorder) to the CHANNEL 1 INPUT BNC connector
 - A video source (for example, a camcorder) to the CHANNEL 4 INPUT BNC connector
2. Connect up to four video acceptors:
 - The CHANNEL 1 OUTPUT BNC connector to a video acceptor (for example, a display)
 - The CHANNEL 4 OUTPUT BNC connector to a video acceptor (for example, a projector)
3. Connect the power.
4. If required:
 - Adjust³ the video input and/or output GAIN and HF levels
 - Press or release the ground input and/or output GND buttons

¹ You do not have to connect all the inputs and outputs

² Switch OFF the power on each device before connecting it to your OC-4. After powering up your OC-4, switch on the power on each device

³ Use a screwdriver to carefully rotate the trimmer, adjusting the appropriate level

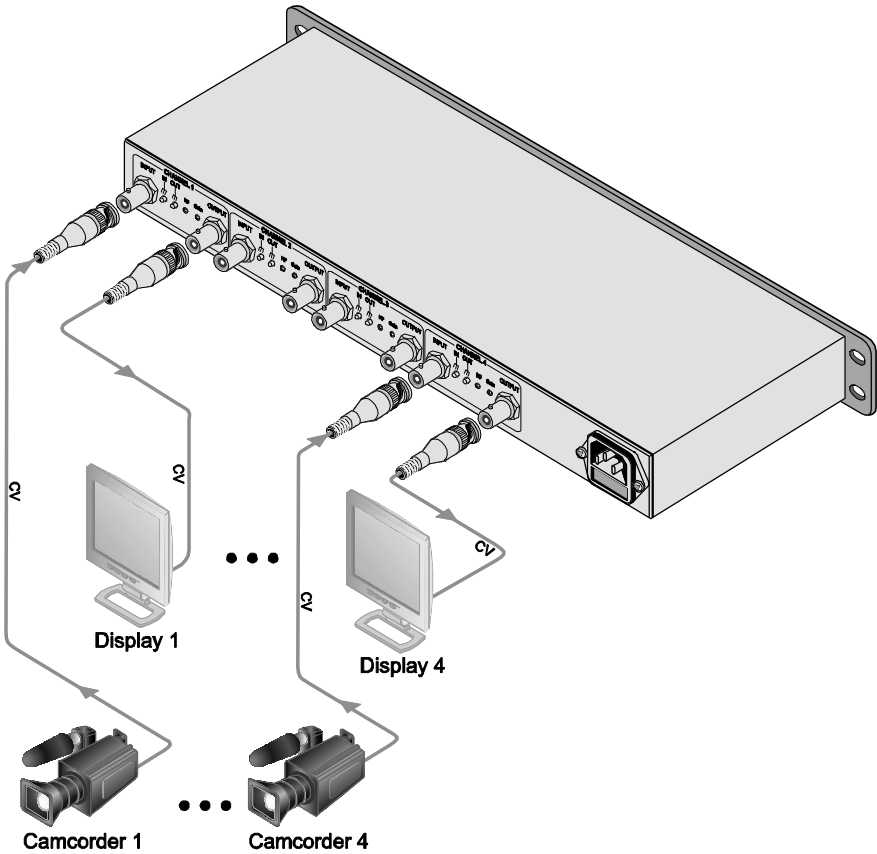


Figure 6: Connecting the OC-4 Quad Channel Video Isolator

6 Technical Specifications

Table 4 includes the technical specifications of the **OC-1N**, **OC-2** and **OC-4**:

Table 4: Technical Specifications¹ of the OC-1N Video Isolator

INPUT:	1 composite video, 1Vpp/75Ω on a BNC connector
OUTPUT:	1 composite video, 1Vpp/75Ω on a BNC connector
S/N RATIO:	69dB
BANDWIDTH(-3dB):	20MHz
POWER SOURCE:	230V AC, 50/60Hz, (115V AC, U.S.A.) 2.3VA
DIMENSIONS:	16.5cm x 12cm x 4.5cm (6.5" x 4.7" x 1.8") W, D, H
WEIGHT:	0.72kg (1.6lbs) approx.
ACCESSORIES:	Power cord
OPTIONS:	RK-1 19" rack adapter

Table 5: Technical Specifications¹ of the OC-2 Dual Channel Video Isolator

INPUT:	2 composite video, 1Vpp/75Ω on BNC connectors
OUTPUT:	2 composite video, 1Vpp/75Ω on BNC connectors
BANDWIDTH (-3dB):	20MHz
S/N RATIO:	69dB
POWER SOURCE:	230V AC, 50/60Hz, (115V AC, U.S.A.) 2.3VA
DIMENSIONS:	22cm x 18cm x 4.5cm (8.7" x 7" x 1.7") W, D, H
WEIGHT:	1.3kg (2.9lbs) approx.
ACCESSORIES:	Power cord
OPTIONS:	RK-1 19" rack adapter

Table 6: Technical Specifications¹ of the OC-4 Quad Channel Video Isolator

INPUT:	4 composite video, 1Vpp/75Ω on BNC connectors
OUTPUT:	4 composite video, 1Vpp/75Ω on BNC connectors
BANDWIDTH (-3dB):	20MHz.
VIDEO S/N RATIO:	69dB.
POWER SOURCE:	230V AC, 50/60Hz, (115V AC, USA)
DIMENSIONS:	19" x 7" x 1U W, D, H, rack mountable
WEIGHT:	3.5kg (7.8lbs) approx.
ACCESSORIES:	Power cord

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.





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.

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P/N: 2900-008001 REV 3