

**Kramer Electronics, Ltd.**



# **USER MANUAL**

**Model:**

**VM-100CB**

*1:10 Video Component Distributor*

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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 350-plus different models now appear in 8 Groups<sup>1</sup>, which are clearly defined by function.

Congratulations on purchasing your **VM-100CB 1:10 Video Component Distributor**, which is ideal for the following typical applications:

- Component video signal distribution
- Video duplication studios, delivering undiminished quality duplicates

The package includes the following items:

- **VM-100CB 1:10 Video Component Distributor**
- Power cord
- This user manual<sup>2</sup>

## 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<sup>3</sup>

## 3 Overview

The **VM-100CB** is a high quality 1:10 distributor for component video signals (HDTV compatible). It accepts one input and distributes the signal to 10 identical outputs using BNC connectors. The looping connectors can be used to connect to a local monitor or other component video acceptor, or to create larger systems<sup>4</sup>.

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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 <http://www.kramerelectronics.com>

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

4 For example, you can connect 2 VM-100CB units to make a 1:20 Component Distributor (see section 5.2)

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 **VM-100CB** away from moisture, excessive sunlight and dust

#### 4 Your VM-100CB

Figure 1, Table 1, and Table 2 define the **VM-100CB 1:10 Video Component Distributor**:

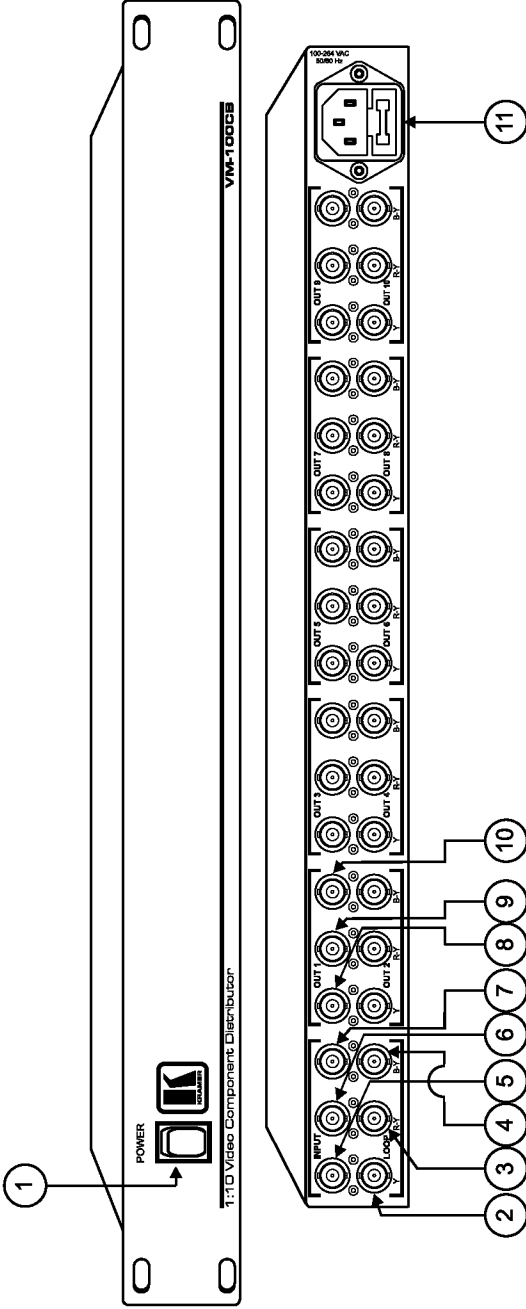


Figure 1: VM-100CB 1:10 Video Component Distributor

*Table 1: Front Panel VM-100CB 1:10 Video Component Distributor Features*

| # | Feature      | Function  |
|---|--------------|---|
| 1 | POWER Switch | Illuminated switch for turning the unit ON or OFF |

*Table 2: Rear Panel VM-100CB 1:10 Video Component Distributor Features*

| #  | Feature                   |                   | Function   |
|----|---------------------------|-------------------|--|
| 2  | LOOP                      | Y BNC Connector   | For looping the inputs (if required)               |
| 3  |                           | R-Y BNC Connector |  |
| 4  |                           | B-Y BNC Connector |  |
| 5  | INPUT                     | Y BNC Connector   | Connects to the component source                   |
| 6  |                           | R-Y BNC Connector |  |
| 7  |                           | B-Y BNC Connector |  |
| 8  | OUT                       | Y BNC Connector   | Connects to the component acceptors (from 1 to 10) |
| 9  |                           | R-Y BNC Connector |  |
| 10 |                           | B-Y BNC Connector |  |
| 11 | Power Connector with Fuse |                   | AC connector enabling power supply to the unit     |

Figure 2 and Table 3 define the trimmers and switches on the underside of the VM-100CB:

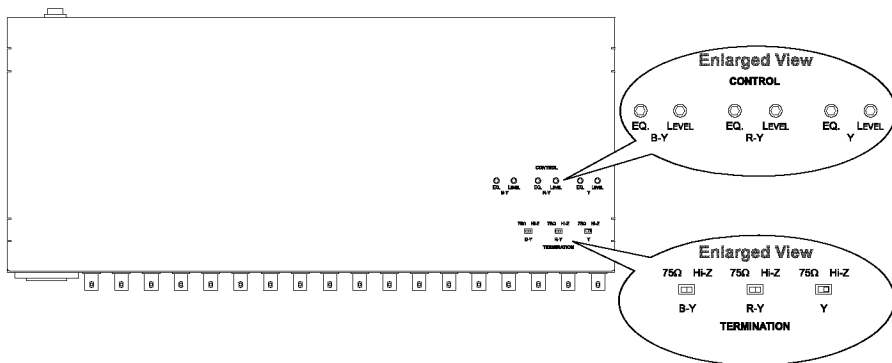


Figure 2: VM-100CB Underside Trimmers

Table 3: VM-100CB Underside Trimmer Features

| Feature     |                   | Function  |
|-------------|-------------------|---|
| CONTROL     | B-Y EQ. Trimmer   | Adjusts <sup>1</sup> the B-Y equalization level (EQ.)                           |
|             | B-Y LEVEL Trimmer | Adjusts <sup>1</sup> the B-Y output signal level                                |
|             | R-Y EQ. Trimmer   | Adjusts <sup>1</sup> the R-Y equalization level (EQ.)                           |
|             | R-Y LEVEL Trimmer | Adjusts <sup>1</sup> the R-Y output signal level                                |
|             | Y EQ. Trimmer     | Adjusts <sup>1</sup> the Y equalization level (EQ.)                             |
|             | Y LEVEL Trimmer   | Adjusts <sup>1</sup> the Y output signal level                                  |
| TERMINATION | B-Y Switch        | Sliding to the left selects 75Ω; sliding to the right selects Hi-Z <sup>2</sup> |
|             | R-Y Switch        | Sliding to the left selects 75Ω; sliding to the right selects Hi-Z <sup>2</sup> |
|             | Y Switch          | Sliding to the left selects 75Ω; sliding to the right selects Hi-Z <sup>2</sup> |

1 Insert a screwdriver into the small hole and carefully rotate it, trimming the OUTPUT level or EQ level

2 For looping select Hi-Z

## 5 Connecting the VM-100CB

This section defines how to connect the **VM-100CB**. In particular, how to connect:

- A single unit (*1:10 Video Component Distributor*), see section 5.1
- Several units, see section 5.2

### 5.1 Connecting a Single VM-100CB Unit

To connect a single **VM-100CB** unit (*1:10 Video Component Distributor*), do the following<sup>1</sup>:

1. Connect a component video source (for example, an HDTV satellite receiver) to the BNC INPUT connectors.
2. Connect the 10 component video output connectors<sup>2</sup> to up to 10 component video acceptors.
3. Leave the LOOP BNC connectors unconnected, and set all three underside TERMINATION switches: B-Y, R-Y, and Y to 75Ω (for termination: slide to the left).

Note: if a loop connection is required, for example, to a local monitor, plug it into the LOOP BNC INPUT connectors and set all three underside TERMINATION switches: B-Y, R-Y, and Y to HI-Z (for looping: slide to the right).

4. Connect the power cord<sup>3</sup> (not illustrated in Figure 3).

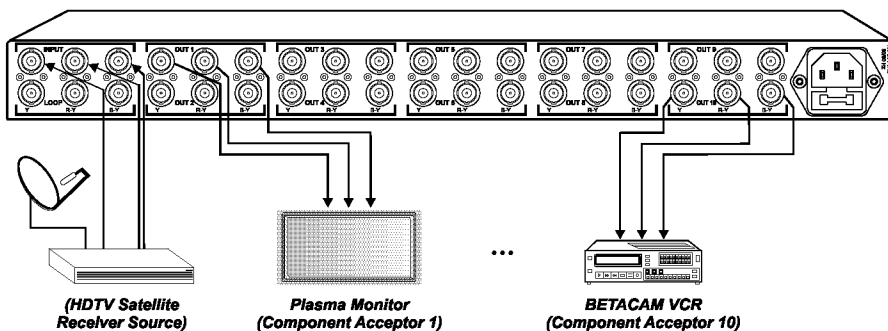


Figure 3: Connecting a VM-100CB Unit

1 Switch OFF the power on each device before connecting it to your VM-100CB. After connecting your VM-100CB, switch on its power and then switch on the power on each device

2 If less than 10 outputs are needed, connect only those outputs of the VM-100CB that are required, and leave the other outputs unconnected

3 We recommend that you use only the power cord that is supplied with this machine



## 5.2 Connecting Several VM-100CB Units

You can connect several **VM-100CB** units to form an expanded video component distributor. For example, as Figure 4 illustrates, connect two **VM-100CB** units to form a *1:20 Video Component Distributor*.

To connect several **VM-100CB** units, do the following<sup>1</sup>:

1. Connect a component video source (for example, a Betacam VCR) to the BNC INPUT connectors on the first **VM-100CB** unit.
2. Connect the LOOP BNC INPUT connectors on the first **VM-100CB** unit to the BNC INPUT connectors on the second **VM-100CB** unit.
3. Set all three underside TERMINATION switches: B-Y, R-Y, and Y to HI-Z (for looping; slide to the right) on the first **VM-100CB** unit, and set all three underside TERMINATION switches: B-Y, R-Y, and Y to 75Ω (for termination; slide to the left) on the second **VM-100CB** unit.
4. Connect the component video output connectors<sup>2</sup>, as follows:
  - On the first **VM-100CB** unit, to component video acceptors 1 to 10
  - On the second **VM-100CB** unit, to component video acceptors 11 to 20
5. Connect both power cords<sup>3</sup> (not illustrated in Figure 4).

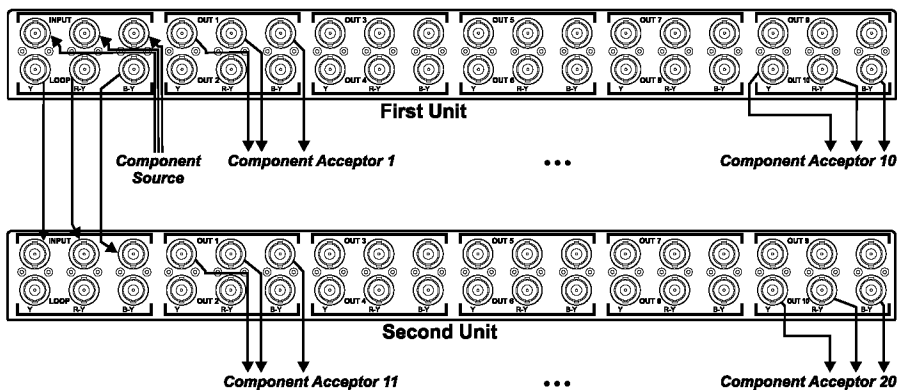


Figure 4: Connecting Several VM-100CB Units

1 Switch OFF the power on each device before connecting it to a VM-100CB unit. After connecting all VM-100CB units, switch on their power and then switch on the power on each device

2 When less than the maximum outputs are required, connect only those outputs that are required, and leave the other outputs unconnected

3 We recommend that you use only the power cords that are supplied with these machines

## 6 Technical Specifications

Table 4 includes the technical specifications:

*Table 4: Technical Specifications<sup>1</sup> of the VM-100CB 1:10 Video Component Distributor*

|                          |  |
|--------------------------|--|
| INPUTS:                  | 1 set of component video (Y, Pb/Cb, Pr/Cr) on BNC connectors   |
| OUTPUTS:                 | 10 sets of component video (Y, Pb/Cb, Pr/Cr) on BNC connectors |
| MAX. OUTPUT LEVEL:       | 2.2Vpp   |
| BANDWIDTH (-3dB):        | 450MHz   |
| DIFF. GAIN:              | 0.03%  |
| DIFF. PHASE:             | 0.03 Deg   |
| K-FACTOR:                | <0.05%   |
| S/N RATIO:               | 74dB   |
| CROSSTALK (all hostile): | -56dB @ 5MHz   |
| CONTROLS:                | Level: -1dB to +6.4dB; Equalization: 0dB to +7.5dB             |
| COUPLING:                | DC   |
| POWER SOURCE:            | 100-264 VAC, 50/60 Hz; 48mA                                    |
| DIMENSIONS:              | 19-inch (W), 7-inch (D) 1U (H) rack-mountable                  |
| WEIGHT:                  | 2.7 kg (6 lbs.) approx.  |
| ACCESSORIES:             | Power cord   |

<sup>1</sup> Specifications are subject to change without notice

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## 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](http://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](http://www.kramerelectronics.com), where updates to this user manual may be found. We welcome your questions, comments and feedback.**



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**Kramer Electronics, Ltd.**

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**P/N: 2900-00018 REV 1**