Kramer Electronics, Ltd.

USER MANUAL

Models:
VM-8H, 1:8 HDMI Distributor
VM-16H, 1:16 HDMI Distributor
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 video, audio, presentation, and broadcasting professionals 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 groups\(^1\) that are clearly defined by function.

Thank you for purchasing your Kramer VM-8H 1:8 HDMI Distributor and/or VM-16H 1:16 HDMI Distributor. The HDMI distributor is ideal for:

- Home theater, presentation and multimedia applications
- Rental and staging
- Retail store displays

The package includes the following items:

- VM-8H 1:8 HDMI Distributor and/or VM-16H 1:16 HDMI Distributor
- Power cord and rack “ears”
- This user manual\(^2\)

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\(^3\)

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\(^1\) GROUP 1: Distribution Amplifiers; GROUP 2: Switchers and Routers; 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

\(^2\) Download up-to-date Kramer user manuals from our Web site at [www.kramerav.com/support/product_downloads.asp](http://www.kramerav.com/support/product_downloads.asp)

\(^3\) The complete list of Kramer cables is on our Web site at [www.kramerav.com](http://www.kramerav.com)
2.1 Quick Start

This section provides initial setup information for the unit.¹

¹ This quick start also applies to the VM-16H which has 16 outputs instead of eight.
3 Overview

The Kramer VM-8H 1:8 HDMI Distributor and the VM-16H 1:16 HDMI Distributor are high quality distributors that accept an HDMI input and distribute the signal to 8/16 outputs respectively, allowing one or more of the outputs to be connected to receiving devices, thus making them a versatile, reliable component in a video system. The VM-8H/VM-16H distribute signals having resolutions up to and including 1080p, and all HDTV formats.

In particular, the HDMI distributors feature:

• Up to 2.25Gbps bandwidth per graphic channel¹
• Data reclocking and equalization
• A default EDID² for fast and efficient connection of the unit³
• I-EDIDPro™ Kramer Intelligent EDID Processing™, an intelligent EDID handling and processing algorithm that ensures Plug and Play operation for HDMI systems
• 3D pass-through
• HDMI Support – HDMI (with Deep Color, x.v.Color™, Lip Sync, HDMI Uncompressed Audio Channels, Dolby TrueHD, DTS-HD, CEC)
• HDMI connectors⁴, output status LEDs⁴, and EDID read and select buttons

The HDMI distributors are housed in a 19" 1U rack-mountable enclosure, and are fed from a 100-264V AC universal switching power supply.

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¹ Suitable for resolutions up to 1080p, and for all HD resolutions
² EDID is Extended Display Identification Data
³ The default EDID feature lets you connect the VM-8H/VM-16H without having to connect a display to the output
⁴ Eight for the VM-8H and 16 for the VM-16H
3.1 Recommendations for Best Performance

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)
- Do not secure the cables in tight bundles or roll the slack into tight coils
- Avoid interference from neighboring electrical appliances and position your HDMI distributors away from moisture, excessive sunlight and dust

This equipment is to be used only inside a building. It may only be connected to other equipment that is installed inside a building.

3.2 Recycling Kramer Products

The Waste Electrical and Electronic Equipment (WEEE) Directive 2002/96/EC aims to reduce the amount of WEEE sent for disposal to landfill or incineration by requiring it to be collected and recycled. To comply with the WEEE Directive, Kramer Electronics has made arrangements with the European Advanced Recycling Network (EARN) and will cover any costs of treatment, recycling and recovery of waste Kramer Electronics branded equipment on arrival at the EARN facility. For details of Kramer’s recycling arrangements in your particular country go to our recycling pages at www.kramerav.com/support/recycling/.

4 Your HDMI Distributors

Figure 1 illustrates the VM-8H 1:8 HDMI Distributor, Figure 2 illustrates the VM-16H 1:16 HDMI Distributor, and Table 1 defines both the VM-8H and the VM-16H.
Figure 1: VM-8H 1:8 HDMI Distributor
Your HDMI Distributors

Figure 2: VM-16H 1:16 H Distributor
Table 1: HDMI Distributor Features

<table>
<thead>
<tr>
<th>#</th>
<th>Feature</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>POWER Switch</td>
<td>Illuminated switch for turning the unit ON or OFF</td>
</tr>
<tr>
<td>2</td>
<td>EDID READ Button</td>
<td>Press to read the EDID of the selected display</td>
</tr>
<tr>
<td>3</td>
<td>SELECT Button</td>
<td>Select the desired display for EDID information</td>
</tr>
<tr>
<td>4</td>
<td>OUTPUT STATUS LEDs</td>
<td>LEDs light when an output(s) is connected and active; LEDs flash when selecting the EDID (see Section 6.1)</td>
</tr>
<tr>
<td>5</td>
<td>INPUT HDMI Connector</td>
<td>Connects to the HDMI source</td>
</tr>
<tr>
<td>6</td>
<td>OUTPUT HDMI Connectors</td>
<td>Connect to the HDMI acceptors</td>
</tr>
<tr>
<td>7</td>
<td>Power Connector with Fuse</td>
<td>AC connector enabling power supply to the unit</td>
</tr>
</tbody>
</table>

1 For the VM-8H, from 1 to 8; for the VM-16H, from 1 to 16
5 Installing the VM-8H/VM-16H in a Rack

This section provides instructions for rack mounting the unit.

| Before installing in a rack, be sure that the environment is within the recommended range: |
| OPERATING TEMPERATURE: 0°C to +40°C (32°F to 104°F) |
| STORAGE TEMPERATURE: -40°C to +70°C (-40°F to 158°F) |
| HUMIDITY: 10% to 90%, RHL non-condensing |

![CAUTION!]

When installing on a 19" rack, avoid hazards by taking care that:

1. It is located within the recommended environmental conditions, as the operating ambient temperature of a closed or multi unit rack assembly may exceed the room ambient temperature.
2. Once rack mounted, enough air will still flow around the machine.
3. The machine is placed straight in the correct horizontal position.
4. You do not overload the circuit(s). When connecting the machine to the supply circuit, overloading the circuits might have a detrimental effect on overcurrent protection and supply wiring. Refer to the appropriate nameplate ratings for information. For example, for fuse replacement, see the value printed on the product label.
5. The machine is earthed (grounded) in a reliable way and is connected only to an electricity socket with grounding. Pay particular attention to situations where electricity is supplied indirectly (when the power cord is not plugged directly into the socket in the wall), for example, when using an extension cable or a power strip, and that you use only the power cord that is supplied with the machine.

To rack-mount a machine:

1. Attach both ear brackets to the machine. To do so, remove the screws from each side of the machine (3 on each side), and replace those screws through the ear brackets.

2. Place the ears of the machine against the rack rails, and insert the proper screws (not provided) through each of the four holes in the rack ears.

Note:
- In some models, the front panel may feature built-in rack ears
- Detachable rack ears can be removed for desktop use
- Always mount the machine in the rack before you attach any cables or connect the machine to the power
- If you are using a Kramer rack adapter kit (for a machine that is not 19"), see the Rack Adapters user manual for installation instructions available from our Web site
6 Connecting the VM-8H 1:8 HDMI Distributor

To connect the VM-8H 1:8 HDMI distributor\(^1\), do the following:

1. Connect an HDMI source (for example, a DVD player) to the INPUT connector.
2. Connect the eight OUTPUT connectors to eight\(^2\) HDMI acceptors (for example, plasma displays).
3. Connect the power cord to the mains electricity.
4. Turn ON the POWER.
5. Acquire the EDID (see Section 6.1).

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\(^1\) From this section on, all the information is relevant to both the VM-8H and the VM-16H, unless noted otherwise

\(^2\) As required. Up to 8 outputs can be connected on the VM-8H and up to 16 outputs can be connected on the VM-16H. Not all outputs need to be connected
6.1 Acquiring the EDID

The VM-8H initially operates with the default EDID. This means that you can turn ON the power before connecting any of the acceptors or the source.

You can acquire the EDID from:

- One Output (the selected output LED illuminates)
- The Default EDID (all the output LEDs flash)
- Several connected outputs, the Auto-mix Mode\(^1\), (the output LEDs flash in sequence)

To cycle between the different modes (One Output, Default and Auto-mix), press the SELECT button, as defined in Table 2.

Table 2: The EDID Modes

<table>
<thead>
<tr>
<th>Current EDID Mode</th>
<th>Appearance</th>
<th>To cycle to the Default EDID</th>
<th>To cycle to the Auto-mix EDID</th>
<th>To cycle to the One output EDID</th>
</tr>
</thead>
<tbody>
<tr>
<td>One output</td>
<td>The selected output LED illuminates</td>
<td>Press the SELECT button once again after selecting output 8 (for VM-8H) or output 16 (for VM-16H). The output LEDs flash</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Default</td>
<td>The output LEDs flash</td>
<td>Press the SELECT button once</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Auto-mix</td>
<td>The output LEDs flash in sequence</td>
<td>Press the SELECT button to select the required output. The selected output flashes</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

To acquire or change the EDID of a new output display from:

- One output, see Section 6.1.1
- The default EDID, see Section 6.1.2
- Several connected outputs, see Section 6.1.3

6.1.1 Acquiring the EDID from one Output

To acquire the EDID of a new output display, do the following:

1. Press the SELECT button.
   The currently selected OUTPUT LED illuminates.

2. Press the SELECT button again to cycle from one output to another until reaching the desired output.

3. Press the READ button.
   The flashing ceases and the button illuminates. The VM-8H accesses

\(^1\) The EDID acquired is a weighted average of all the connected outputs. For example, if several displays with different resolutions are connected to the outputs, the acquired EDID supports all the resolutions, as well as other parameters included in the EDID
the EDID of the connected output.
The EDID of the selected output is stored in the non-volatile memory when the READ button no longer illuminates.

6.1.2 Acquiring the Default EDID

To acquire the default EDID, do the following:

1. Press the SELECT button.
The OUTPUT LEDs flash simultaneously.

2. Press the READ button.
The flashing ceases and the button illuminates. The VM-8H accesses the default EDID.
The EDID of the selected output is stored in the non-volatile memory when the READ button no longer illuminates.

6.1.3 Acquiring the EDID from Several Outputs

To acquire or change the EDID via several connected outputs, do the following:

1. Press the SELECT button.
The OUTPUT LEDs flash in sequence.

2. Press the READ button.
The flashing ceases and the button illuminates. The VM-8H accesses the EDID of the connected outputs.
The EDID is stored in the non-volatile memory when the READ button no longer illuminates.
# Technical Specifications

Table 3 includes the technical specifications:

Table 3: Technical Specifications\(^1\) of the VM-8H and the VM-16H

<table>
<thead>
<tr>
<th></th>
<th>VM-8H</th>
<th>VM-16H</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>INPUT:</strong></td>
<td>HDMI connector</td>
<td></td>
</tr>
<tr>
<td><strong>OUTPUTS:</strong></td>
<td>8 HDMI connectors</td>
<td>16 HDMI connectors</td>
</tr>
<tr>
<td><strong>BANDWIDTH:</strong></td>
<td>Supports up to 2.25Gbps per graphic channel</td>
<td>Supports HDMI and HDCP</td>
</tr>
<tr>
<td><strong>COMPLIANCE WITH HDMI STANDARD:</strong></td>
<td>Supports HDMI and HDCP</td>
<td></td>
</tr>
<tr>
<td><strong>CONTROLS:</strong></td>
<td>SELECT and READ buttons for selecting and storing EDID information</td>
<td></td>
</tr>
<tr>
<td><strong>INDICATOR LEDS:</strong></td>
<td>OUTPUT STATUS 1 to 8</td>
<td>OUTPUT STATUS 1 to 16</td>
</tr>
<tr>
<td><strong>OPERATING TEMPERATURE:</strong></td>
<td>0° to +40°C (32° to 104°F)</td>
<td></td>
</tr>
<tr>
<td><strong>STORAGE TEMPERATURE:</strong></td>
<td>-40° to +70°C (-40° to 158°F)</td>
<td></td>
</tr>
<tr>
<td><strong>HUMIDITY:</strong></td>
<td>10% to 90%, RHL non-condensing</td>
<td></td>
</tr>
<tr>
<td><strong>POWER CONSUMPTION:</strong></td>
<td>100-264V AC, 50/60Hz, 28VA</td>
<td>100-264V AC, 50/60Hz, 48VA</td>
</tr>
<tr>
<td><strong>DIMENSIONS:</strong></td>
<td>19&quot; x 7&quot; x 1U W, D, H rack mountable</td>
<td></td>
</tr>
<tr>
<td><strong>WEIGHT:</strong></td>
<td>3.5kg (7.7lbs) approx.</td>
<td>4.5kg (9.9lbs) approx.</td>
</tr>
<tr>
<td><strong>ACCESSORIES:</strong></td>
<td>Power cord, rack &quot;ears&quot;</td>
<td></td>
</tr>
<tr>
<td><strong>OPTIONS:</strong></td>
<td>HDMI/HDMI male-to-male cables</td>
<td></td>
</tr>
</tbody>
</table>

**Warning:**

This is a class A product, for professional applications and environments only

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\(^1\) Specifications are subject to change without notice
LIMITED WARRANTY

The warranty obligations of Kramer Electronics for this product are limited to the terms set forth below:

What is Covered

This limited warranty covers defects in materials and workmanship in this product.

What is Not Covered

This limited warranty does not cover any damage, deterioration or malfunction resulting from any alteration, modification, improper or unreasonable use or maintenance, misuse, abuse, accident, neglect, exposure to excess moisture, fire, improper packing and shipping (such claims must be presented to the carrier), lightening, power surges, or other acts of nature. This limited warranty does not cover any damage, deterioration or malfunction resulting from the installation or removal of this product from or into any installation. Kramer Electronics will not be responsible for any costs related to the removal or reinstallation of this product from or into any installation. Kramer Electronics will not be responsible for any costs related to any setting up this product, any adjustment of user controls or any programming required for a specific installation of this product.

How to Obtain a Remedy under this Limited Warranty

To obtain a remedy under this limited warranty, you must contact either the authorized Kramer Electronics reseller from whom you purchased this product or the Kramer Electronics office nearest you. For a list of authorized Kramer Electronics resellers and/or Kramer Electronics authorized service providers, please visit our web site at www.kramerelectronics.com or contact the Kramer Electronics office nearest you.

In order to pursue any remedy under this limited warranty, you must possess an original, dated receipt as proof of purchase from an authorized Kramer Electronics reseller. If this product is returned under this limited warranty, a return authorization number, obtained from Kramer Electronics, will be required. You may also be directed to an authorized reseller or a person authorized by Kramer Electronics to repair the product.

If it is decided that this product should be returned directly to Kramer Electronics, this product should be properly packed, preferably in the original carton, for shipping. Cartons not bearing a return authorization number will not be accepted.

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Kramer Electronics thanks you for purchasing a Kramer Electronics product. We hope it will give you years of satisfaction.
For the latest information on our products and a list of Kramer distributors, visit our Web site: www.kramerav.com, where updates to this user manual may be found. We welcome your questions, comments and feedback.

Safety Warning:
Disconnect the unit from the power supply before opening/servicing.