Kramer Electronics, Ltd.

USER MANUAL

Models:

RC-7B, Media / Room Controller
RC-7BE, Media / Room Controller
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 500-plus different models now appear in 8 Groups, which are clearly defined by function.

Congratulations on purchasing your Kramer RC-7B / RC-7BE media / room controller, which is designed to let an instructor enter a multimedia classroom and operate an A/V system with ease.

The package includes the following items:
- **RC-7B** or **RC-7BE**
- This user manual
- Power supply
- Control and configuration software

2 Getting Started

We recommend that you:
- Review the contents of this user manual
- Use Kramer high performance high resolution cables

This user manual is written for the end user and is applicable once the unit is installed and configured. Refer to the separate online RC Configuration and Installation guide for details of how to install and configure the Universal Room (Media / Room) Controller.

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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 Scalers; and GROUP 8: Cables and Connectors
2 Download up-to-date Kramer user manuals from the Internet at this URL: http://www.kramerelectronics.com
3 The complete list of Kramer cables is on our Web site at http://www.kramerelectronics.com
4 Including the hardware installation, connecting the inputs and the display, and configuration via the Windows®-based software and/or the IR learner
5 By authorized Kramer technical personnel or by an external system integrator (refer to the separate online guide)
6 That provides information about how to set up the system. This online guide may well be updated on a regular basis. For the latest online guide, go to http://www.kramerelectronics.com
Overview

The **RC-7B / RC-7BE** is a highly versatile controller interface panel for the control of A/V equipment in any multimedia room, especially the control of a projector or other display device, via RS-232 and/or IR emitter cable. The **RC-7B / RC-7BE** is 12V DC fed. The **RC-7B** is a one-gang wall plate. The **RC-7BE** is two-gang wall plate intended for the European market.

In particular, the **RC-7B / RC-7BE** features:

- VOLUME Up and VOLUME Down buttons
- ON, OFF, PC, DVD and VCR buttons, each of which can be programmed to carry out up to 15 commands, in sequence, with one press of a button

In addition, the **RC-7B / RC-7BE** includes:

- Two IR ports
- Two RS-232 serial ports for universal display
- An RS-485 serial port
- A 3.5mm CONFIG jack connector on the front panel for RS-232 configuration and control
- An IR learner on the front panel for the customized control of external sources, absorbing the IR commands from different remote transmitters
- Control via the front panel buttons, and remotely, via RS-232

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 the **RC-7B / RC-7BE** away from moisture, excessive sunlight and dust

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**Caution** – No operator-serviceable parts inside unit.

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

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

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1 For example: model number AD2512C, part number 2535-000251
4 Your RC-7B / RC-7BE

This section defines the:

- Front panel of the RC-7B (see section 4.1)
- Front panel of the RC-7BE (see section 4.2)
- Side panel of the RC-7B and RC-7BE (see section 4.3)

4.1 Defining the RC-7B Front Panel

Figure 1 and Table 2 define the RC-7B front panel:

![Figure 1: RC-7B Front Panel](image)

<table>
<thead>
<tr>
<th>#</th>
<th>Feature</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>ON Button</td>
<td>Turns ON the power to the display device</td>
</tr>
<tr>
<td>2</td>
<td>Mounting holes (2)</td>
<td>For fastening the controller in place</td>
</tr>
<tr>
<td>3</td>
<td>OFF Button</td>
<td>Turns OFF the power to the display device</td>
</tr>
<tr>
<td>4</td>
<td>Faceplate Attachment Holes (2)</td>
<td>For attaching the faceplate to the controller</td>
</tr>
<tr>
<td>5</td>
<td>CONFIG Port on 3.5mm jack connector</td>
<td>Used for Windows®-based configuration software (driver downloads, firmware updates and so on)</td>
</tr>
<tr>
<td>6</td>
<td>VCR Button</td>
<td>Selects the VCR input source</td>
</tr>
<tr>
<td>7</td>
<td>DVD Button</td>
<td>Selects the DVD input source</td>
</tr>
<tr>
<td>8</td>
<td>PC (includes Mac) Button</td>
<td>Selects the PC input source (desktop or laptop computer)</td>
</tr>
<tr>
<td>9</td>
<td>IR IN Receiver</td>
<td>Accepts IR remote commands (for the IR-learner feature)</td>
</tr>
<tr>
<td>10</td>
<td>VOLUME ▼ Button</td>
<td>Press to lower the volume on the audio amplifier</td>
</tr>
<tr>
<td>11</td>
<td>VOLUME ▲ Button</td>
<td>Press to raise the volume on the audio amplifier</td>
</tr>
</tbody>
</table>

4.2 Defining the RC-7BE Front Panel

Figure 2 and Table 2 define the RC-7BE front panel:

1 For example, the projector or plasma display panel
2 These screws should not be removed during or after mounting
3 Via the front panel, without having to remove the RC-7B from its mounting
4 Letting you configure the RC-7B directly from the remote transmitter without the need for software
Table 2: RC-7BE Front Panel

<table>
<thead>
<tr>
<th>#</th>
<th>Feature</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>VOLUME ▼ Button</td>
<td>Press to lower the volume on the audio amplifier</td>
</tr>
<tr>
<td>2</td>
<td>Faceplate Attachment Holes (2)</td>
<td>For attaching the faceplate to the controller¹</td>
</tr>
<tr>
<td>3</td>
<td>VOLUME ▲ Button</td>
<td>Press to raise the volume on the audio amplifier</td>
</tr>
<tr>
<td>4</td>
<td>ON Button</td>
<td>Turns ON the power to the display device²</td>
</tr>
<tr>
<td>5</td>
<td>OFF Button</td>
<td>Turns OFF the power to the display device²</td>
</tr>
<tr>
<td>6</td>
<td>CONFIG Port³ on 3.5mm jack connector</td>
<td>Used for Windows®-based configuration software (driver downloads, firmware updates and so on)</td>
</tr>
<tr>
<td>7</td>
<td>IR IN Receiver</td>
<td>Accepts IR remote commands (for the IR-learner feature)⁴</td>
</tr>
<tr>
<td>8</td>
<td>PC (includes Mac) Button</td>
<td>Selects the PC input source (desktop or laptop computer)</td>
</tr>
<tr>
<td>9</td>
<td>DVD Button</td>
<td>Selects the DVD input source</td>
</tr>
<tr>
<td>10</td>
<td>VCR Button</td>
<td>Selects the VCR input source</td>
</tr>
<tr>
<td>11</td>
<td>Mounting holes (4)</td>
<td>For fastening the controller in place</td>
</tr>
</tbody>
</table>

¹ These screws should not be removed during or after mounting
² For example, the projector or plasma display panel
³ Via the front panel, without having to remove the RC-7BE from its mounting
⁴ Letting you configure the RC-7BE directly from the remote transmitter without the need for software
4.3 Defining the RC-7B / RC-7BE Side Panel

Figure 3 illustrates an enlarged view of the side panel of the RC-7B and RC-7BE:

![Figure 3: Side Panel of the RC-7B and RC-7BE (Enlarged View)](image)

Figure 4 defines the side panel of the RC-7B and RC-7BE. For an explanation of how to install and configure, refer to the chapter entitled: Installation of the RC System in the online RC Configuration and Installation guide¹.

¹ Download it from http://www.kamerelectronics.com
To revert to the factory default settings (including all the configured buttons and the network settings with the factory default IP number: 192.168.1.39), press and hold the FACTORY DEFAULT button while connecting the power.

Switch the PROGRAM Switch to OFF for normal operation; to ON for firmware upgrade.

Switch the RS-485 Term Switch to ON for RS-485 line termination.

Connect the RS-485 terminal block connector to the RS-485 port on a switcher or PC.

Connect the RS-232 terminal block connector (1 and 2) to the RS-232 port on the A/V equipment or a PC or other Serial Controller.

Control up to 4 machines via IR Emitters.

Connect the +12VDC IN and the GND pins to the external 12V DC power supply, taking care that the polarity is correct.

Figure 4: Side Panel of the RC-7B and RC-7BE
5 Using Your Media / Room Controller

The example in Figure 5 shows a front view perspective of a typical RC-7BE configuration. It connects to the projector via IR or RS-232:

![Diagram of RC-7BE configuration](image)

*Figure 5: RC-7BE (Front Perspective) Configuration*

The example in Figure 6 shows a rear view perspective of a typical RC-7BE configuration. It connects to the projector via RS-232. Each source—the PC, DVD and VCR—connects to the dedicated video and audio inputs of the projector:

1 From this section on, all the information is relevant to both the RC-7B and the RC-7BE, unless noted otherwise
Figure 7 shows the RC-7BE built into a podium in an auditorium with an overhead projector and a cabinet with a VCR and a DVD inside, all controlled via the RC-7BE. The presenter’s laptop is located on the podium, next to the RC-7BE. It is also controlled by the RC-7BE and is used for presentations and slide shows.
5.1 Operating the RC-7B / RC-7BE

In the example defined in Table 3, the buttons—ON, OFF, PC, DVD and VCR—are programmed by the system integrator to perform several tasks\(^1\).

**Table 3: The Commands Configuration**

<table>
<thead>
<tr>
<th>ON Button Macro Sequence</th>
<th>OFF Button Macro Sequence</th>
<th>DVD Button Macro Sequence</th>
<th>VCR Button Macro Sequence</th>
<th>PC Button Macro Sequence</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Power up the projector</td>
<td>1. Power down the projector</td>
<td>1. Stop the VCR</td>
<td>1. Stop the DVD</td>
<td>1. Stop the DVD</td>
</tr>
<tr>
<td>2. Power up the DVD</td>
<td>2. Stop the DVD</td>
<td>2. The projector selects the DVD input</td>
<td>2. The projector selects the VCR input</td>
<td>2. Stop the VCR</td>
</tr>
<tr>
<td>3. Power up the VCR</td>
<td>3. Power down the DVD</td>
<td>3. Play the DVD</td>
<td>3. Play the VCR</td>
<td>3. The projector selects the PC input</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\(^1\) A macro sequence, including up to 15 commands per button, carried out in sequence with one press of a button.
5.2 Using the Macro Buttons

Pressing any button initiates a macro sequence\(^1\), during which the button blinks (as programmed by the system integrator). If during the macro sequence the button blinks faster than usual\(^2\), this indicates that a malfunction has been detected\(^3\) and the **RC-7B / RC-7BE** exits the macro sequence.

To stop a macro sequence, press and hold that button for 5 seconds. The sequence will come to an end. You can resume operation by pressing any of the buttons\(^4\). The unit will carry out the macro sequence commands from the beginning.

5.3 An Example of Operating the RC-7B / RC-7BE

Figure 8 shows an example of how to operate the **RC-7B / RC-7BE**:  

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Operating Example

The lecture includes an introduction, a slide show presentation via the laptop, a DVD program, more slides, a video film, and some final slides to conclude the lecture. Following the introduction, the presenter presses the buttons in the following sequence:

- **ON**
  - Turn on the projector, DVD player, video player and start the slide show via the laptop.
- **DVD**
  - Select the DVD input on the projector and play the DVD.
- **PC**
  - Select the PC input on the projector and resume the slide show.
- **VCR**
  - Select the VCR input on the projector and show the video film.
- **PC**
  - Select the PC input on the projector and show the last few slides of the presentation.
- **OFF**
  - Power down the projector, DVD player and the video player.
```

*Figure 8: RC-7B / RC-7BE Operation Example*

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1. The macro sequence can be carried out instantly or can take a while, depending on the delay times included in the sequence
2. Six times per second, as compared with twice per second during normal operation
3. For example, when pressing ON to power up the projector while the projector is still in the power down process
4. Including the button you kept pressed to stop the macro sequence
## 6 Technical Specifications

Table 4 defines the technical specifications:

*Table 4: Technical Specifications\(^1\) of the RC-7B / RC-7BE*

<table>
<thead>
<tr>
<th>Specification</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PORTS:</strong></td>
<td>2 bi-directional RS-232 on terminal block connectors; 1 RS-485 on a terminal block connector; Config. jack connector for RS-232 configuration and control</td>
</tr>
<tr>
<td><strong>OUTPUTS:</strong></td>
<td>4 (2x2) IR emitters on terminal block connectors</td>
</tr>
<tr>
<td><strong>POWER SOURCE:</strong></td>
<td>12 VDC, 155mA</td>
</tr>
<tr>
<td><strong>DIMENSIONS:</strong></td>
<td>RC-7B: 7.1cm x 4.4cm x 13.7cm (2.8&quot; x 1.75&quot; x 5.39&quot;, W, D, H)</td>
</tr>
<tr>
<td></td>
<td>RC-7BE: 15.1cm x 4.4cm x 8.6cm (5.94&quot; x 1.75&quot; x 3.39&quot;, W, D, H)</td>
</tr>
<tr>
<td><strong>WEIGHT:</strong></td>
<td>0.3 kg (0.67 lbs.) approx</td>
</tr>
<tr>
<td><strong>ACCESSORIES:</strong></td>
<td>Power supply, Windows®-based Kramer control and configuration software, Config. cable</td>
</tr>
<tr>
<td><strong>OPTIONS:</strong></td>
<td>Dual IR emitter cable, single IR emitter cable, IR extension cable, CONFIG. cable</td>
</tr>
</tbody>
</table>

\(^1\) 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 on the Web site www.kamerelectronics.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!
 반드시 서비스를 주문한 오너의 키램어 전문가가 해야합니다. 이용자가 변경을 만들어 사용자에게 사용을 허용할 권리. 본 제품을 조작하기 전에 해당 주의사항을 확인하는 것이 중요합니다.

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.

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

Kramer Electronics, Ltd.
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P/N: 2900-000254 REV 1