Kramer Electronics, Ltd.

USER MANUAL

Model:

FC-29

IR Learner

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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 groups[1] that are clearly defined by function.

Congratulations on purchasing your Kramer Pico TOOLS **FC-29** *IR Learner*, which is ideal for:

- Learning IR commands and transferring them to your PC
- Setting up multiple room controller systems

The package includes the following items:

- **FC-29** *IR Learner*
- Kramer RC configuration software[2]: the *RC Configuration 2*
- One IR emitter cable[3]
- 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[4]

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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

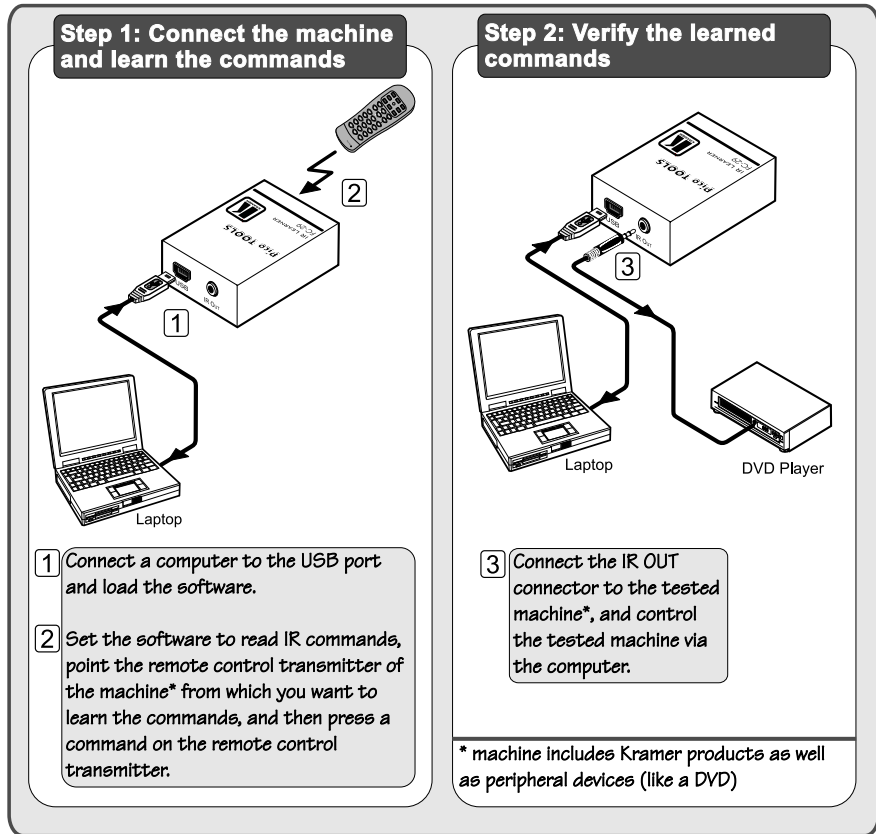2 Download up-to-date Kramer user manuals and guides from the Internet at this URL: http://www.kramerelectronics.com

3 The 3.5mm to IR Emitter Control Cable (C-A35/IRE-10)

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

2.1 Quick Start

This quick start chart summarizes the basic setup and operation

Step 1: Connect the machine and learn the commands

1. Connect a computer to the USB port and load the software.

2. Set the software to read IR commands, point the remote control transmitter of the machine* from which you want to learn the commands, and then press a command on the remote control transmitter.

Step 2: Verify the learned commands

3. Connect the IR OUT connector to the tested machine*, and control the tested machine via the computer.

* machine includes Kramer products as well as peripheral devices (like a DVD)

3 Overview

The **FC-29** *IR Learner* learns and stores IR (infrared) commands on a PC via a USB connection. The stored IR commands can be uploaded later to multiple room controllers.

In particular, the **FC-29**:

- Includes a built-in IR Receiver
- Learns IR commands and stores them on a PC running Kramer's RC Configuration 2 software tool
- Does not require an external power source – it is powered directly from the USB port
- Features an IR OUT port for convenient testing of learned commands

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 **FC-29** away from moisture, excessive sunlight and dust

4 Your FC-29 IR Learner
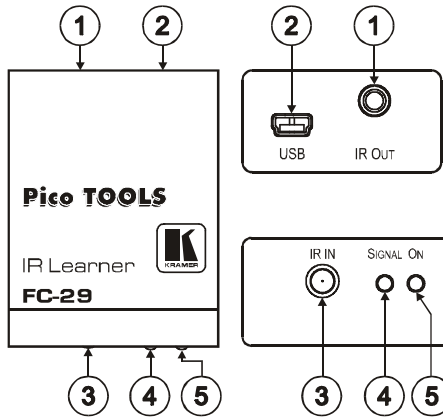
Figure 1 and Table 1 define the **FC-29** unit:

Figure 1: FC-29 IR Learner

Table 1: Features and Functions of the FC-29 IR Learner

#	Feature	Function
1	*IR OUT* 3.5mm Mini Connector	Connect to the IR emitter cable for testing the learned commands
2	*USB* Connector	Connect to store learned commands on a computer, and to power the unit
3	*IR IN* built-in IR receiver	Use to learn the IR commands from a machine's remote control transmitter
4	*SIGNAL* LED	Lights when an IR signal is detected on the IR OUT port
5	*ON* LED	Lights when the unit is powered

5 Using the FC-29 IR Learner

This section describes how to connect the **FC-29**, learn and test the IR commands written to the PC, save them and then export them as a driver file.

> It is recommended to test each IR command directly after it is learned

5.1 Connecting the FC-29 and Learning the IR Commands

To connect the **FC-29** *IR Learner*, as illustrated in the example in Figure 2:

1. Connect the **FC-29** directly to your PC via the USB connector.
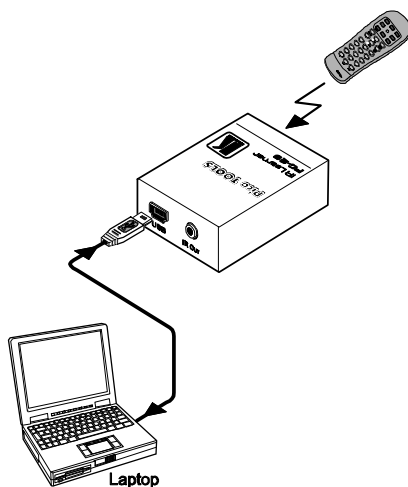   Be sure that the ON LED of the **FC-29** lights.

Figure 2: Connecting the FC-29 IR Learner

2. Install the *RC Configuration 2* software[1].

3. Open the Kramer *RC Configuration 2* program.

4. From the File menu, click Driver Manager.
   The Driver Manager window appears.

5. Create a new vendor, device and revision if you want to keep the IR commands in a separate driver file, or set to an existing vendor, device and revision if you want new IR commands added to them.

6. Click the New button in the IR commands area to type the new command name.
   The following window appears:

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1 Download the Kramer RC-SV Configuration guide from the Internet at this URL: http://www.kramerelectronics.com
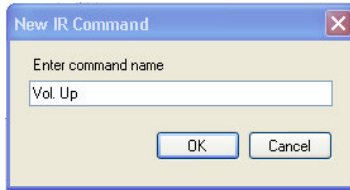
Figure 3: New IR Command Window

7. In the Command area, click the Connect to IR Capture Device button:
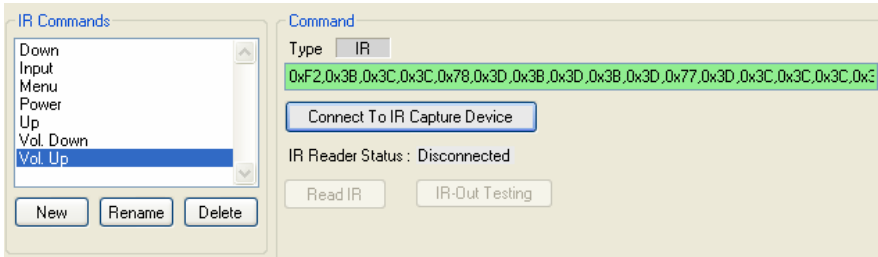

Figure 4: IR Command Area Window
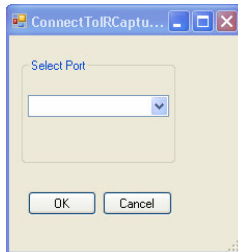
8. Select the port and click OK:

Figure 5: Connect to IR Capture Device Window

9. Click the Read IR button (see Figure 4) to read the command.
    Wait for about 2 seconds for the following message to appear in the command area:
    "Ready for reading IR command. Please send IR command to the device".

10. Press the appropriate key on the remote control transmitter.
    The command area displays the following message:
    "IR command reading".
    The IR command appears, as illustrated in Figure 4.

5.2 Testing the IR Commands

To test the learned IR commands[1], as illustrated in the example in Figure 7, do the following:

1. Connect the PC to the **FC-29** via the USB connector.

2. Connect the IR OUT 3.5mm mini jack to the tested machine[2] via the IR emitter cable (see Figure 6).
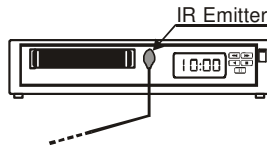

Figure 6: Connecting the IR Emitter

3. In the Command Area, click the Connect to IR Capture Device button (see Figure 4), select the port and click OK.

4. Click the IR-Out Testing button (see Figure 4).
The SIGNAL LED lights.

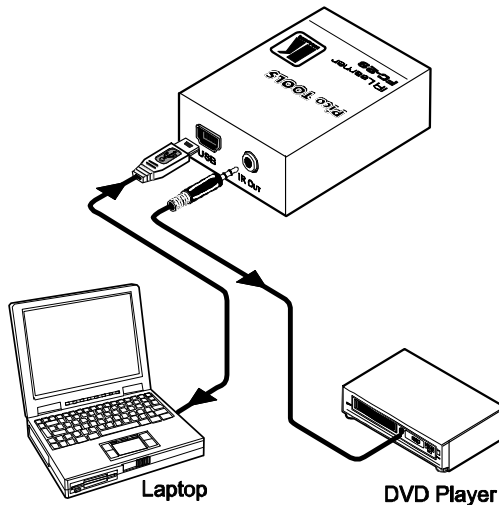*Figure 7: Testing the IR Commands on the PC via the FC-29*

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1 For example, from a Kramer machine or a peripheral machine (like a DVD player)

2 Stick the IR emitter to the IR receiver window (usually located on the front panel of the device)

5.3 Exporting the IR Commands

You can save the IR commands as a driver file. To do so, click the Export Driver button and save the file. The default file name includes the names of the vendor and the device, as well as the revision. You can then upload the learned commands to multiple room controllers by importing the saved driver file.

6 Upgrading Firmware

To upgrade the firmware:

1. Open the Device menu and click Load Firmware.

2. In the Load Firmware Upgrade window, open the Firmware file and then select the **FC-29** from the Machine drop-down list:
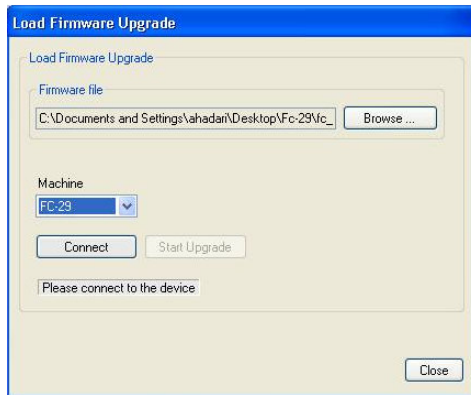

Figure 8: Load Firmware Upgrade Window

3. Connect the PC to the **FC-29** via the USB connector.

4. Click the Connect button and select USB as the connection method, select the port and click OK.
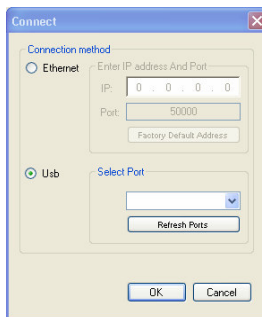

Figure 9: Connect Window

5. Click the Start Upgrade button (see Figure 8).
   The upgrading process takes a few seconds, during which:
   - The computer recognizes a new drive
   - A new window opens that includes the file "Firmware.kbn"
   - After a few seconds, the file name changes to NewFirmware.kbn

6. When the following message appears: "Firmware upgrade successfully done, please safely remove the device", disconnect the USB cable from the **FC-29**.

7 Technical Specifications

Table 2 defines the technical specifications:

Table 2: Technical Specifications[1] of the FC-29

INPUT:	1 IR Receiver
OUTPUTS:	1 IR emitter on a 3.5mm mini connector
POWER SOURCE:	5V DC (USB), 120mA
DIMENSIONS:	4.22cm x 5.18cm x 2.44cm (1.66" x 2.04" x 0.96") W, D, H
WEIGHT:	0.15kg (0.55lbs) approx.
ACCESSORIES:	Power Supply

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.

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