



KRAMER ELECTRONICS LTD.

USER MANUAL

MODEL:

912
Power Amplifier

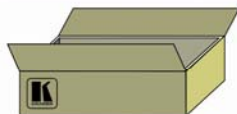
P/N: 2900-000684 Rev 2

912 Quick Start Guide

This page guides you through a basic installation and first-time use of your **912**. For more detailed information, see the **912** User Manual. You can download the latest manual at <http://www.kramerelectronics.com>.

Step 1: Check what's in the box

- 912** Power Amplifier
- 1 Power supply (12V DC)
- 4 Rubber feet
- 1 Quick Start sheet
- 1 User Manual



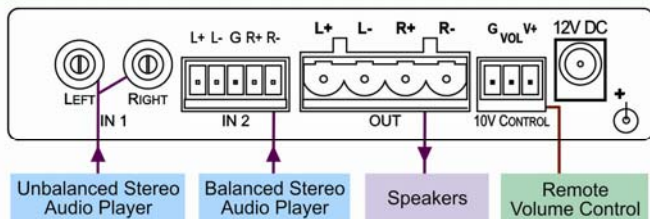
Save the original box and packaging in case your product needs to be returned to the factory for service.

Step 2: Install the 912

Mount the machine in a rack (using the RK-3T rack adapter) or place on a table.

Step 3: Connect the inputs and outputs

Always switch off the power on each device before connecting it to your **912**.



Always use Kramer high-performance cables for connecting AV equipment to the **912**.

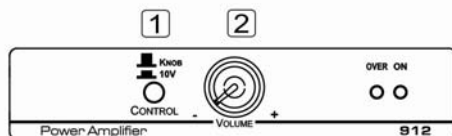
Step 4: Connect the power

Connect the 12V DC power adapter to the **912** and plug the adapter into the mains electricity.



Step 5: Operate the 912

- 1 Select the local/remote volume option
- 2 Adjust the volume using either the knob or the remote control



Contents

1	Introduction	1
2	Getting Started	2
2.1	Achieving the Best Performance	2
3	Overview	3
3.1	Defining the 912 Power Amplifier	3
4	Connecting the 912	5
5	Technical Specifications	7

Figures

Figure 1:	912 Power Amplifier Front and Rear Panels	4
Figure 2:	Connecting the 912 Power Amplifier	6

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 that are clearly defined by function: 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 and GROUP 11: Sierra Products.

Congratulations on purchasing your Kramer **912** *Power Amplifier*, which is ideal for the following typical applications:

- Presentation rooms and multimedia applications for local audio amplification
- Personal audio listening (for example, a PC and portable CD player)

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.
Use only the power cord that is supplied with this machine.



Go to <http://www.kramerelectronics.com> to check for up-to-date user manuals, application programs, and to check if firmware upgrades are available (where appropriate).

2.1 Achieving the Best Performance

To achieve the best performance:

- Use only good quality connection cables to avoid 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
- Position your Kramer **912** away from moisture, excessive sunlight and dust

3 Overview

The Kramer **912** is a high performance power amplifier that can accept a balanced stereo audio input on a 5-pin terminal block, and an unbalanced stereo audio input on two RCA connectors.

Both inputs can be connected simultaneously.

The balanced and unbalanced stereo audio inputs are converted to a differential stereo audio output for speakers on a 4-pin terminal block.

The **912** *Power Amplifier* features:

- An audio level knob to adjust the volume
- The ability to control the volume remotely using a remote 10V volume control
- Mixing of the unbalanced and balanced inputs
- An ON LED indicating that the unit is receiving power
- A 12V power source making it ideal for field operation
- Easy-to-connect, detachable terminal blocks

The **912** *Power Amplifier* is housed in a Kramer TOOLS enclosure.

3.1 Defining the 912 Power Amplifier

[Figure 1](#) defines the **912** *Power Amplifier*.

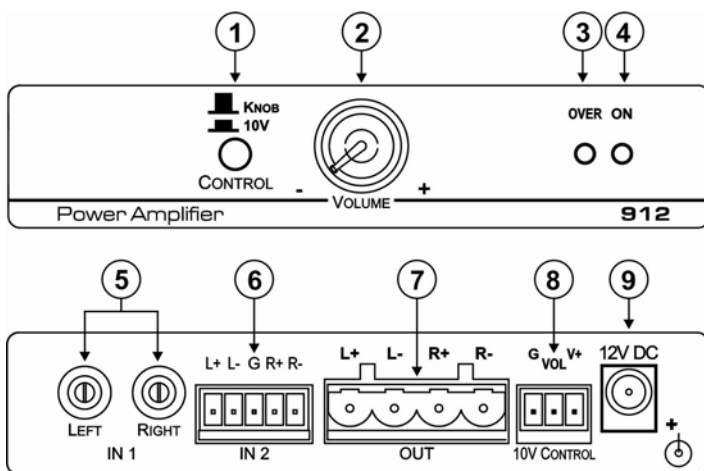


Figure 1: 912 Power Amplifier Front and Rear Panels

Front and Rear Panel Features			
#	Feature	Function	
1	CONTROL Button	Press in for remote volume control using the 10V Control connection, release to control the volume using the front panel Volume knob (see item 2). Warning: When a remote volume control is connected, switching between the volume controls may cause a sudden, large volume level change	
2	VOLUME Control Knob	Turn clockwise to increase the volume, anticlockwise to decrease the volume	
3	OVER LED	Lights red when the amplifier overheats Overheating causes the amplifier to automatically reduce power to protect the unit from damage. Once the unit cools down, full power is restored	
4	ON LED	Lights green when the unit receives power	
5	IN 1 Unbalanced Stereo Audio Input	LEFT RCA Connector	Connect to the unbalanced stereo audio source You can connect both the unbalanced and the balanced inputs simultaneously—the inputs will be mixed
		RIGHT RCA Connector	
6	IN 2 (L+ L- G R+ R-) Balanced Stereo Audio Input Removable Terminal Block	Connect to the balanced stereo audio source You can connect both the unbalanced and the balanced inputs simultaneously—the inputs will be mixed	
7	OUT (L+ L- R+ R-) Stereo Output Terminal Block Connector	Connect to the speakers	
8	10V CONTROL (GND VOL V+) Control Removable Terminal Block	Connect to a remote 10V volume control (see Section 4). Connect G to one end of the potentiometer, VOL to the wiper, V+ to the opposite end of the potentiometer	
9	12V DC	Connect to the supplied power adapter, center pin positive	

4 Connecting the 912

This section explains how to connect and operate your **912**.



Always switch off the power to each device before connecting it to your **912**. After connecting your **912**, connect its power and then switch on the power to each device.

To connect the **912**, as illustrated in the example in [Figure 2](#):

1. Connect the unbalanced stereo audio source (for example, a stereo audio player) to the LEFT and RIGHT IN 1 RCA connectors.
Or alternatively, connect the balanced stereo audio source to the GND, left (L+ L-) and right (R+ R-) input terminal block
2. Connect the OUT speaker terminal block to a pair of speakers. Connect the left speaker to the L+ and L- pins, and the right speaker to the R+ and R- pins.
Note: Do not ground the speakers.
3. Optional—Connect the G, 2 and V+ pins on the 10V CONTROL terminal block connector to a remote 10V volume control.
4. Select the volume control method using the CONTROL button on the front panel. Press CONTROL (10V position) to select the remote 10V volume control.
5. Connect the 12V DC power adapter to the **912** power socket and to the mains electricity (not shown in [Figure 2](#)).
6. Adjust the volume using the method selected in [Step 4](#).

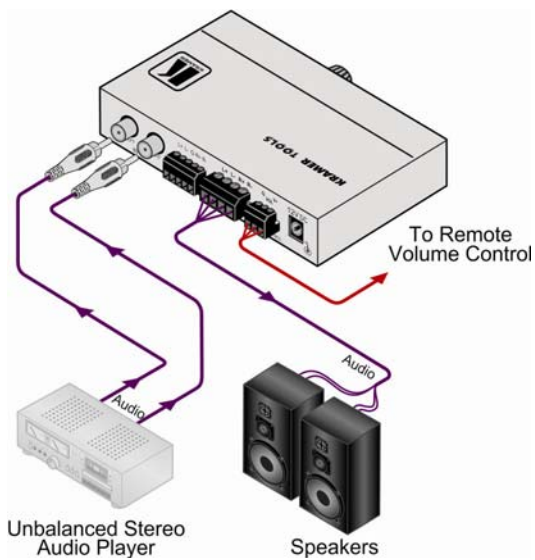


Figure 2: Connecting the 912 Power Amplifier

5 Technical Specifications

INPUTS:	1 unbalanced stereo 1Vpp/10kΩ on 2 RCA connectors 1 balanced stereo +4dBu/10kΩ on a 5-pin removable terminal block
OUTPUT:	1 stereo speaker output on a 4-pin removable large terminal block
INPUT SENSITIVITY:	Unbalanced: 440mVpp Balanced: 105mVpp
OUTPUT POWER:	5.5W RMS power per channel into a 8Ω load 8.4W RMS power per channel into a 4Ω load
AMPLIFIER TYPE:	Class D
MAXIMUM VOLTAGE GAIN:	Unbalanced: 32.6dB (x43) Balanced: 36.2dB (x65)
BANDWIDTH (-3dB):	>20kHz
S/N RATIO:	Unbalanced 60dB Balanced 63dB
CONTROLS:	8Ω: Unbalanced <-68 to 33dB, Balanced -60 to 36dB 4Ω: Unbalanced -48 to 40dB, Balanced -60 to 38dB
COUPLING:	Input: Unbalanced DC (internal AC path), Balanced AC Output: DC
AUDIO THD + NOISE:	8Ω: Unbalanced 2.3%, Balanced 2.5% 4Ω: Unbalanced 3.1%, Balanced 4.3%
AUDIO 2nd HARMONIC:	8Ω: Unbalanced 1.4%, Balanced 1.4% 4Ω: Unbalanced 2.7%, Balanced 3.5%
POWER SOURCE:	12V DC, 2.8A Full load 4Ω @10% THD+N
DIMENSIONS:	12cm x 8.5cm x 2.5cm (4.7" x 3.4" x 1") W, D, H
WEIGHT:	0.3kg (0.67lbs) approx.
ACCESSORIES:	Power supply, mounting bracket
OPTIONS:	RK-3T 19" rack adapter
Specifications are subject to change without notice at http://www.kramerelectronics.com	

LIMITED WARRANTY

We warrant 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 us 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 your 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 where updates to this user manual may be found.

We welcome your questions, comments, and feedback.

Web site: www.kramerelectronics.com

E-mail: info@kramerel.com



SAFETY WARNING

Disconnect the unit from the power supply before opening and servicing