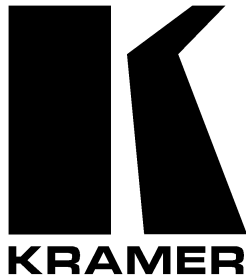


**Kramer Electronics, Ltd.**



# **USER MANUAL**

**Model:**

**104R**

***RF Distribution Amplifier***

**Contents**

<b>1</b>	<b>Introduction</b>	<b>1</b>
<b>2</b>	<b>Getting Started</b>	<b>1</b>
<b>3</b>	<b>Overview</b>	<b>1</b>
<b>4</b>	<b>Your RF Distribution Amplifier</b>	<b>2</b>
<b>5</b>	<b>Connecting the RF Distribution Amplifier</b>	<b>3</b>
<b>6</b>	<b>Technical Specifications</b>	<b>4</b>

**Figures**

Figure 1: 104R RF Distribution Amplifier	3
Figure 2: 104R RF Distribution Amplifier Connections	4

**Tables**

Table 1: Features and Functions of the 104R RF Distribution Amplifier	3
Table 2: Technical Specifications of the 104R RF Distribution Amplifier	4

## 1 Introduction

Dedication by Kramer Electronics since 1981, to the development and manufacture of high quality video/audio equipment, makes the Kramer line an integral part of the finest production and presentation facilities in the world. In recent years, Kramer has redesigned and upgraded most of the line, making the best even better! The Kramer line of professional video/audio electronics is one of the most versatile and complete available, and is a true leader in terms of quality, workmanship, price/performance ratio and innovation. In addition to our high quality distribution amplifiers, we also offer excellent switchers and matrices, remote controllers, presentation processors, interfaces and computer-related products.

Congratulations on purchasing your Kramer Tools **104R RF Distribution Amplifier**. This product is ideal for:

- CATV and MATV systems
- Modulation applications (for example, hotel systems)
- Retail stores, schools, medical facilities
- Home theater systems

The package includes the following items:

- **104R RF Distribution Amplifier**
- Power adapter (12V DC Input)<sup>1</sup>
- Mounting bracket
- This user manual
- Kramer concise product catalog/CD

## 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

## 3 Overview

Your **104R RF Distribution Amplifier** is a high performance 1:4 distribution

---

<sup>1</sup> As an option, you can purchase the Kramer VA-50P 6 Port Universal 12-Volt Power Supply, enabling you to supply power to up to 6 Kramer devices that require 12VDC

amplifier for RF<sup>1</sup> signals.

In addition, the **104R**:

- Accepts a single RF input such as a typical CATV/MATV signal and distributes it to four identical outputs
- With its extra wide bandwidth of up to 3 GHz (3000 MHz), ensures that the unit remains transparent in the most critical applications
- Matches the inputs and outputs to 75 ohms impedance
- Comes with convenient screw-on “F” type connectors

Achieving the best performance means:

- Connecting 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)
- Using good quality sockets and connectors for the sources and acceptors to avoid signal path breaks<sup>2</sup>. Aim for Zero Ohm connection resistance and ensure that sockets and connectors match the required impedance (75 ohms in video)
- Ensuring high quality amplifying circuitry for high linearity, low distortion and low noise operation
- Compensating for extended distances<sup>3</sup> by using line amplifiers between the source and the acceptors
- Avoiding interference from neighboring electrical appliances that may adversely influence signal quality
- Positioning your Kramer **104R** in a location free from moisture and away from excessive sunlight and dust

## 4 Your RF Distribution Amplifier

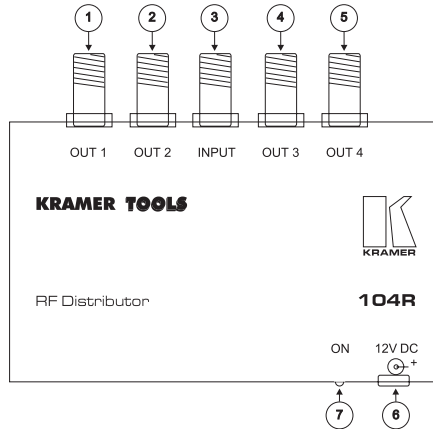
Figure 1 and Table 1 define the **104R**:

---

<sup>1</sup> Radio frequency

<sup>2</sup> Poor quality connectors tend to rust, which may cause breaks

<sup>3</sup> In excess of 15 meters



*Figure 1: 104R RF Distribution Amplifier*

*Table 1: Features and Functions of the 104R RF Distribution Amplifier*

#	Feature	Function
1	OUT 1 "F" type connector	Connects to the RF source 1
2	OUT 2 "F" type connector	Connects to the RF source 2
3	INPUT "F" type connector	Connects to the RF acceptor
4	OUT 3 "F" type connector	Connects to the RF source 3
5	OUT 4 "F" type connector	Connects to the RF source 4
6	12V DC	+12V DC connector for powering the unit
7	ON LED	Illuminates when receiving power

## 5 Connecting the RF Distribution Amplifier

To use your **104R**:

1. Connect the TV Source to the "F" type INPUT connector.
2. Connect one or more of up to 4 of the following "F" type OUT<sup>1</sup> connectors to the respective TV Acceptors:
  - OUT 1 to TV Acceptor 1
  - OUT 2 to TV Acceptor 2
  - OUT 3 to TV Acceptor 3
  - OUT 4 to TV Acceptor 4
3. Connect the 12V DC power adapter to the power socket<sup>2</sup> and connect the adapter to the mains electricity.

<sup>1</sup> You do not have to connect all the outputs

<sup>2</sup> Item 6 in Figure 1

4. Switch on the TV Source and the TV Acceptors.  
The RF INPUT signal automatically distributes to the TV Acceptors.

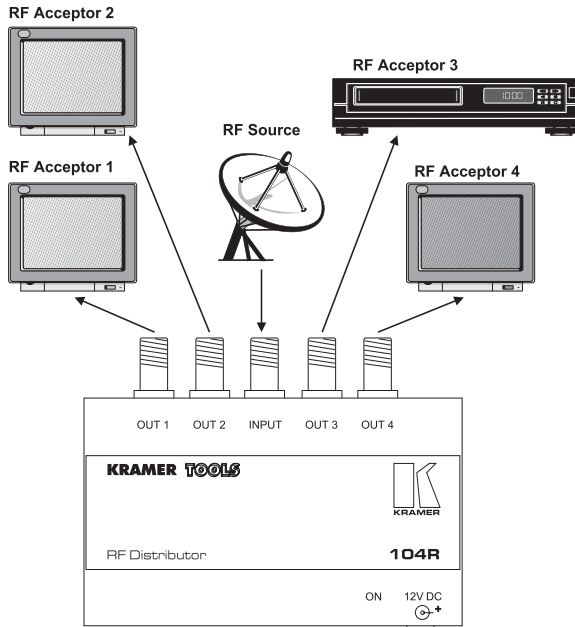


Figure 2: 104R RF Distribution Amplifier Connections

## 6 Technical Specifications

Table 2 includes the technical specifications:

Table 2: Technical Specifications of the 104R RF Distribution Amplifier

Input:	1 RF, / 75 $\Omega$ on an "F" type connector
Outputs:	4 RF, / 75 $\Omega$ on "F" type connectors
Bandwidth:	40 MHz – 3000 MHz (3 GHz) +/-3dB
Coupling:	AC.
RF Gain:	+6 dB typical
Noise Figure:	3.5 dB
Power Source:	12 VDC, 100mA max.
Dimensions:	12cm x 7.5cm x 2.5cm (4.7" x 2.95" x 0.98"), W, D, H
Weight:	0.32 kg. (0.71 lbs.) approx.
Accessories:	Power supply, mounting bracket
Options:	VA-50P 6 Port Universal 12-Volt Power Supply 19" rack adapters RK-T1, RK-T3

---

## 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 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.



**The list of Kramer distributors appears on our web site:  
[www.kramerelectronics.com](http://www.kramerelectronics.com)**

**We welcome your questions, comments and feedback.**

---

**Kramer Electronics, Ltd.**

3 Am VeOlamo Street, Jerusalem 95463, Israel Tel: (+972-2)-654-4000

Fax: (+972-2)-653-5369, E-mail: [kramere@netvision.net.il](mailto:kramere@netvision.net.il)

**P/N: 2900-001010 REV 2**