

## USER MANUAL

### **MODEL:**

**RTBUS-27xl**

**Round Table Connection Bus**



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# 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!

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## 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.



Go to [www.kramerav.com/downloads/RTBUS-27xl](http://www.kramerav.com/downloads/RTBUS-27xl) to check for up-to-date user manuals, application programs, and to check if firmware upgrades are available (where appropriate).

## Achieving Best Performance

- Use only good quality connection cables (we recommend Kramer high-performance, high-resolution cables) to avoid 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 that may adversely influence signal quality.
- Position your Kramer **RTBUS-27xl** away from moisture, excessive sunlight and dust.

## Safety Instructions



### Caution:

- This equipment is to be used only inside a building. It may only be connected to other equipment that is installed inside a building.
- For products with relay terminals and GPIO ports, please refer to the permitted rating for an external connection, located next to the terminal or in the User Manual.
- There are no operator serviceable parts inside the unit.



### Warning:

- Disconnect the power and unplug the unit from the wall before installing.
- Do not open the unit. High voltages can cause electrical shock! Servicing by qualified personnel only.
- To ensure continuous risk protection, replace fuses only according to the rating specified on the product label which located on the bottom of the unit.

## 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](http://www.kramerav.com/support/recycling).

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## Overview

Congratulations on purchasing your Kramer **RTBUS-27xl Round Table Connection Bus**.

The **RTBUS-27xl** is an elegant furniture-mounted, round connection bus. The **RTBUS-27xl** features a mechanism for pneumatic lifting and smooth closing of its lid. It is easily installed into a table or podium top, and its interface enables you to connect any equipment to systems installed in a room:

- C14 power socket opening, suitable for any of the following power sockets: for the USA, the UK, Germany (the Europlug), Belgium-France, Switzerland, Italy, Australia, Brazil, Israel, South Africa or "Universal" for use anywhere (see [Power Socket Options](#) on page 5).



Power sockets are ordered separately.

- Two pass-through openings for cables, located on the lower surface, enabling closing of the lid while keeping the cables hidden and protected under the surface.

# Defining RTBUS-27xl Round Table Connection Bus

This section defines RTBUS-27xl.

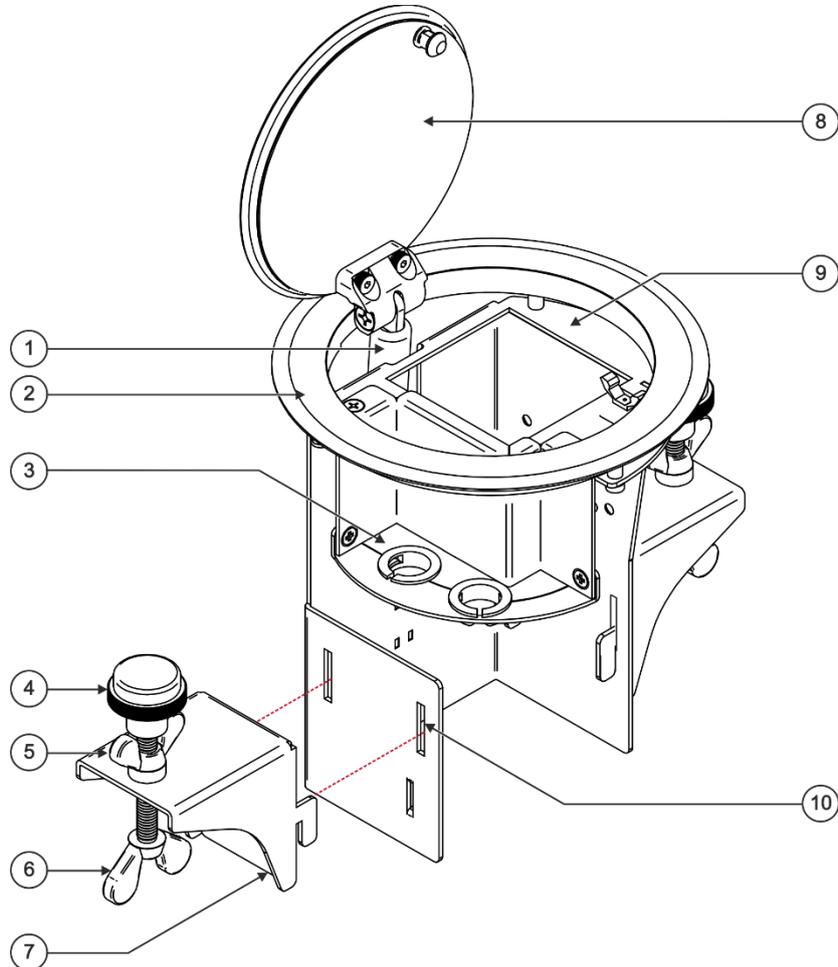


Figure 1: RTBUS-27xl Round Table Connection Bus Front Panel

#	Feature	Function
①	Pneumatic Mechanism	Enables automatic lifting and smooth closing of the lid.
②	Outer Rim	Fits over the table surface.
③	Lower Surface	Includes two pass-through openings (see <a href="#">The RTBUS-27xl Connecting Surface</a> on page 4).
④	Mounting Screws (x2)	For securing the RTBUS-27xl to the table.
⑤	Locking Butterfly Nuts (x2)	Tighten to lock the mounting butterfly screw.
⑥	Mounting Butterfly Nuts (x2)	Tighten to secure the unit to the table surface.
⑦	Mounting Brackets (x2)	Place in the bracket slits after inserting the enclosure into the table – for securing the unit to the table surface.
⑧	Black anodized or brushed aluminum semi-automatic lid	Covers the connecting surface, leaving the table surface neat and tidy.
⑨	Upper Surface	Includes power socket opening (see <a href="#">The RTBUS-27xl Connecting Surface</a> on page 4).
⑩	Mounting Bracket Slits (x2)	Insert the mounting brackets to the slits when installing the RTBUS-27xl (see <a href="#">Mounting the RTBUS-27xl in the Table</a> on page 9).

# The RTBUS-27xl Connecting Surface

Figure 2 defines the connecting surface.

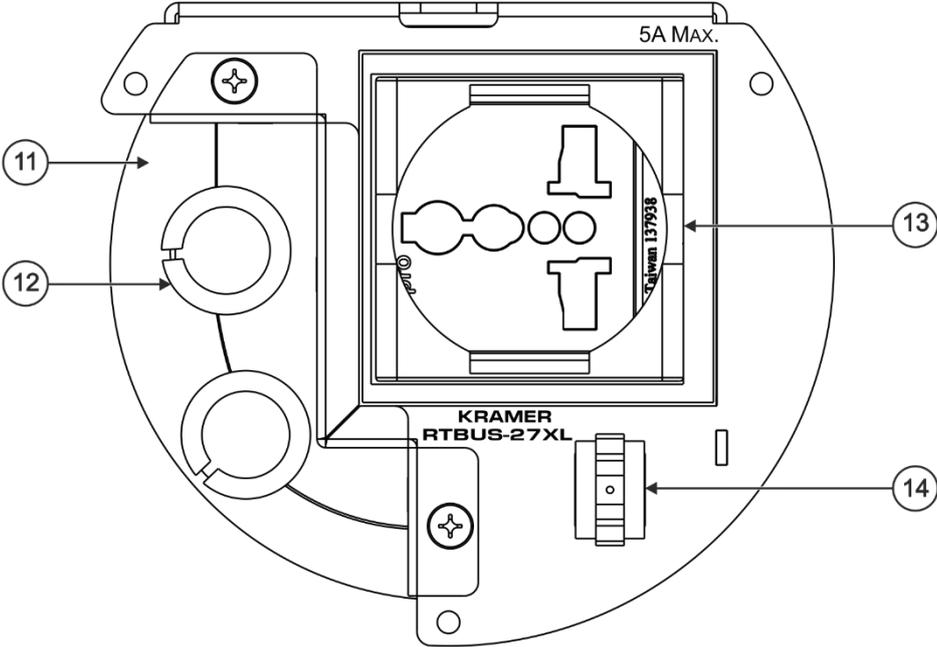


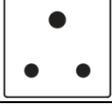
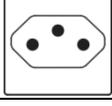
Figure 2: RTBUS-27xl Connecting Surface

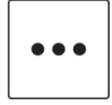
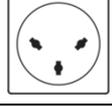
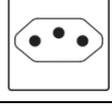
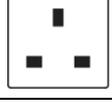
#	Feature	Function
11	Detachable Pass-through Bracket	Remove and re-install to insert cables.
12	Pass-Through Opening and Bushing (x2)	Insert a cable through the opening and the bushing.
13	5A MAX. Power Socket	Connects to 90-240V AC power consuming device (see <a href="#">Power Socket Options</a> on page 5).
14	Lid Latch	For safely closing the lid.

## Power Socket Options

A choice of power sockets is available for purchase in several versions, including power sockets for the USA, Brazil, Germany (the Europlug), UK, Switzerland, Belgium-France, Italy, South Africa, Israel and Australia. A “Universal” socket for general use is also available (see the compatibility restrictions in the table below). Note that the photos below are for illustration purposes only.

Power Socket Type	Power Specs	Description
Universal: 	<b>TS-201U (80-000043)</b> 100-240V AC, 50/60Hz, 5A Maximum 5A per power outlet	<b>Fully compatible</b> with power plugs in the UK, India, Italy and Denmark, as well as with the 2-prong Europlug. <b>Partially compatible</b> (if the polarity is reversed) with plugs in China, Switzerland, Israel and the USA. The universal socket does not supply grounding to plugs in Central Europe and France and so you should order country specific sockets instead. <b>Not compatible</b> with South African plugs.

Power Socket Type	Power Specs
USA: 	<b>TS-201US (80-000046)</b> 100-125V AC, 50/60Hz, 5A Maximum 5A per power outlet
Germany and EU: 	<b>TS-201DE (80-000044)</b> 100-240V AC, 50/60Hz, 5A Maximum 5A per power outlet
Belgium and France: 	<b>TS-201FR (80-000045)</b> 100-240V AC, 50/60Hz, 5A Maximum 5A per power outlet
South Africa 	<b>TS-201ZA (80-000052)</b> 100-240V AC, 50/60Hz, 5A Maximum 5A per power outlet
Switzerland 	<b>TS-201CH (80-000049)</b> 100-240V AC, 50/60Hz, 5A Maximum 5A per power outlet

Power Socket Type	Power Specs
Italy: 	<b>TS-201IT (80-000047)</b> 100-240V AC, 50/60Hz, 5A Maximum 5A per power outlet
Australia: 	<b>TS-201AU (80-000050)</b> 100-240V AC, 50/60Hz, 5A Maximum 5A per power outlet
Israel: 	<b>TS-201IL (80-000053)</b> 100-240V AC, 50/60Hz, 5A Maximum 5A per power outlet
Brazil 	<b>TS-201BR (80-000051)</b> 100-240V AC, 50/60Hz, 5A Maximum 5A per power outlet
England 	<b>TS-21GB (91-000131)</b> 100-240V AC, 50/60Hz, 5A Maximum 5A per power outlet

# Installing the RTBUS-27xl

To install the RTBUS-27xl perform the following steps:

1. Drill a hole in the table (see [Drilling a Hole in the Table](#) on page 6).
2. Install the power socket (see [Installing the Power Socket](#) on page 6).
3. Connect the cables (see [Connecting the Cables](#) on page 7).
4. Secure the unit to the table (see [Mounting the RTBUS-27xl in the Table](#) on page 9).

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## Drilling a Hole in the Table

To drill an opening in the table:

1. Using any standard cup bit drill with a diameter ranging from 111mm to 114mm (4.37in to 4.49in), drill a hole in the table in the desired location.



The thickness of the table should be 3in (76mm) or less.

2. Clean the table surface.



Take care not to damage the table. Kramer AV is not responsible for any damage caused to the table.

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## Installing the Power Socket

[Figure 3](#) shows an example of the Universal power socket housing which is one of the optional power sockets for the RTBUS-27xl, see [Power Socket Options](#) on page 5.

To install the power socket (purchased separately):

1. Close the RTBUS-27xl lid.
2. Carefully insert the power socket housing so that the power socket fits into the power socket opening on the connecting surface and the four standoffs fit the four screw holes on the RTBUS-27xl.

When positioned correctly, the IEC socket faces forward.

3. Screw the four screws included in the power socket kit into the designated holes to fix the power socket housing in place.
4. Unscrew the power connector lock.
5. Connect the IEC power cord to the IEC socket.

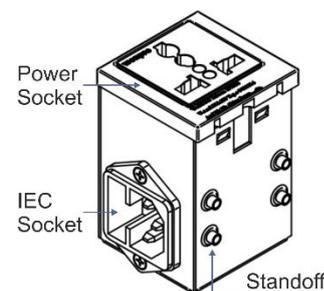


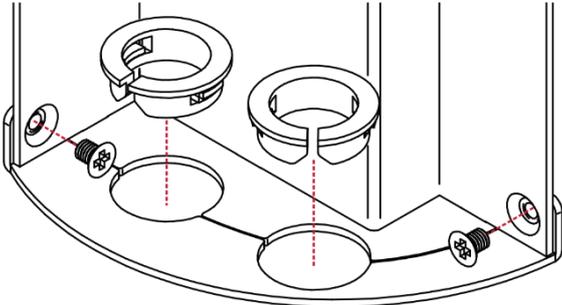
Figure 3: RTBUS-27xl Universal Power Socket Housing

# Connecting the Cables

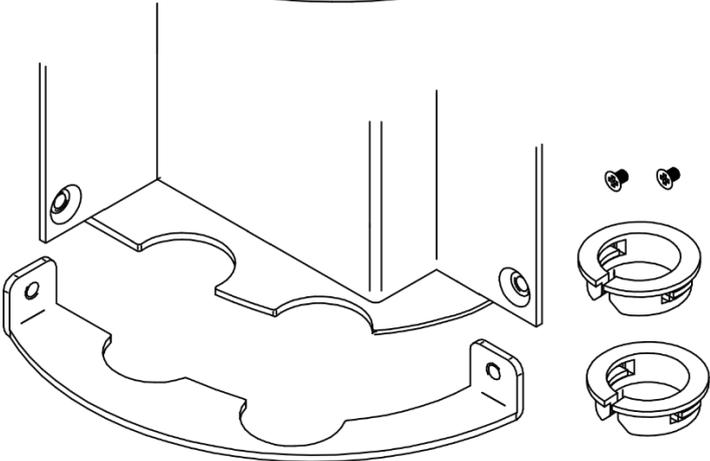
You can install the cables either before mounting the **RTBUS-27xl** on a table, or after it is mounted (usually if the **RTBUS-27xl** is mounted and you need to replace the cables).

### To connect the cables:

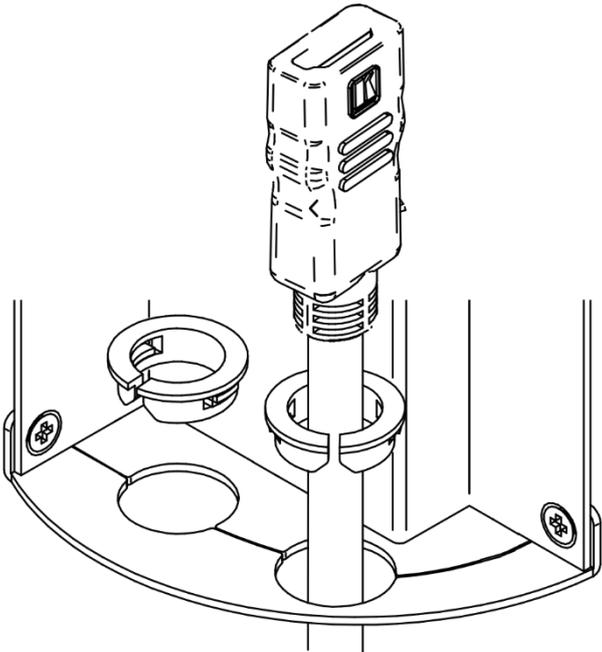
- 1. Unscrew the two detachable bracket screws to remove it from the lower surface.



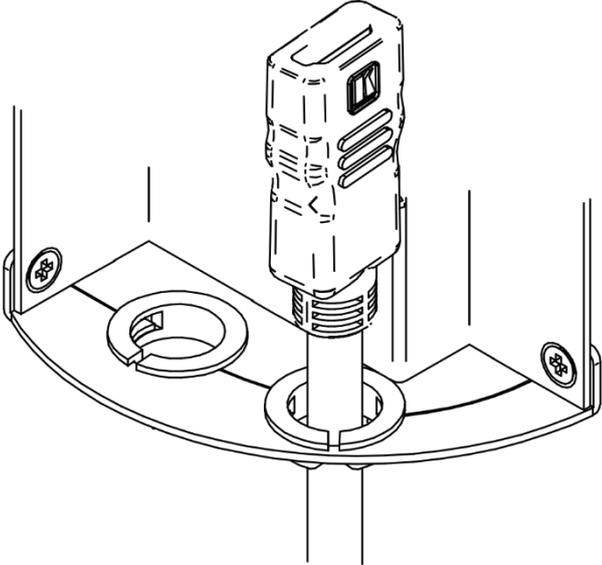
Keep the bushing/s and screws on the side for later.



- 2. Insert a cable into an opening and place the bushing around the cable.



- 3. Replace the detachable bracket and fix using the two screws and push the bushing into the pass-through opening.

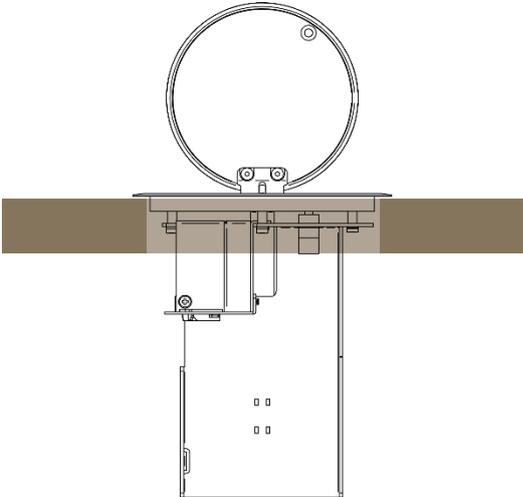


We recommend that you use the Kramer **C-AC** AC Power Cord series to power the unit.

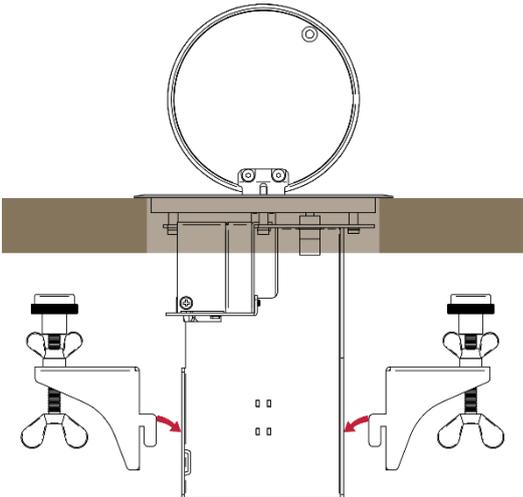
# Mounting the RTBUS-27xl in the Table

To mount the unit:

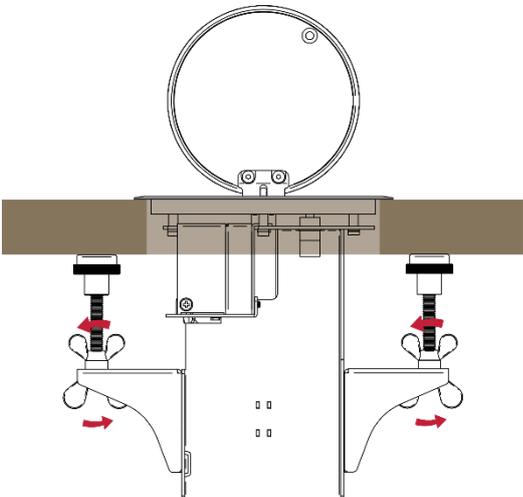
- 1. Insert the RTBUS-27xl into the hole cut into the table making sure the outer rim is firm against the surface of the table.



- 2. From underneath the table, slide the mounting brackets into the appropriate slots.



- 3. **Step 3:** Tighten the butterfly mounting screws securely upward against the table.
- 4. Lock the mounting screws into position with the locking butterfly screws.



# Using the RTBUS-27xl

Once the RTBUS-27xl is installed, you can easily customize it to your own needs by directly plugging in the required AV equipment, as illustrated in [Figure 4](#).

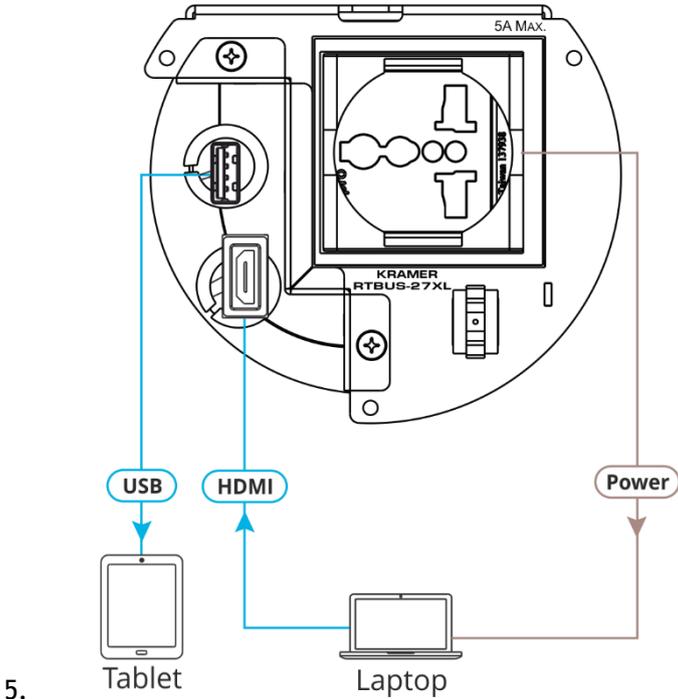


Figure 4: RTBUS-25xl Boardroom Installation

# Technical Specifications

Ports	2 pass-through openings	In lower surface
Power	Power socket assemblies:	Universal, 100–240V AC, 50/60Hz, 5A; maximum 5A per power outlet Fully compatible with power plugs in the UK, India, Italy and Denmark, as well as with the 2-prong Europlug Partially compatible (if the polarity is reversed) with plugs in China, Switzerland, Israel and the USA. The universal socket does not supply grounding to plugs in Central Europe and France (you should order country specific sockets instead). Not compatible with South African plugs
		USA — 100–240V AC, 50/60Hz, 5A, maximum 5A per power outlet
		Germany and EU — 100–240V AC, 50/60Hz, 5A, maximum 5A per power outlet
		Belgium and France — 100–240V AC, 50/60Hz, 5A, maximum 5A per power outlet
		Italy — 100–240V AC, 50/60Hz, 5A, maximum 5A per power outlet
		Australia — 100–240V AC, 50/60Hz, 5A, maximum 5A per power outlet
		Israel — 220V AC, 50/60Hz, 5A, maximum 5A per power outlet
		South Africa — 220V AC, 50/60Hz, 5A, maximum 5A per power outlet
		Switzerland — 220V AC, 50/60Hz, 5A, maximum 5A per power outlet
		England — 220V AC, 50/60Hz, 5A, maximum 5A per power outlet
		Brazil — 220V AC, 50/60Hz, 5A, maximum 5A per power outlet
		Fuse Rating
Options	TBUS AC Power Cord (C-AC/POWERCORD) power socket kits	
Environmental Conditions	Operating Temperature	0° to +40°C (32° to 104°F)
	Storage Temperature	-40° to +70°C (-40° to 158°F)
	Humidity	10% to 90%, RHL non-condensing
Regulatory Compliance	Safety	CE, UL
	Environmental	RoHs, WEEE
General	Net Dimensions (W, D, H)	13cm x 16cm x 15.4cm (6.18" x 5.04" x 6.04")
	Shipping Dimensions (W, D, H)	36.5cm x 17cm x 17cm (14.4" x 6.7" x 6.7")
	Net Weight	0.85kg (1.9lbs) approx.
	Shipping Weight	1.3 kg (2.9lbs) approx. with mounting brackets
Specifications are subject to change without notice at <a href="http://www.kramerav.com">www.kramerav.com</a>		

The warranty obligations of Kramer Electronics Inc. ("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), lightning, 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 any installation, any unauthorized tampering with this product, any repairs attempted by anyone unauthorized by Kramer Electronics to make such repairs, or any other cause which does not relate directly to a defect in materials and/or workmanship of this product. This limited warranty does not cover cartons, equipment enclosures, cables or accessories used in conjunction with this product. Without limiting any other exclusion herein, Kramer Electronics does not warrant that the product covered hereby, including, without limitation, the technology and/or integrated circuit(s) included in the product, will not become obsolete or that such items are or will remain compatible with any other product or technology with which the product may be used.

**How Long this Coverage Lasts**

The standard limited warranty for Kramer products is seven (7) years from the date of original purchase, with the following exceptions:

1. All Kramer VIA hardware products are covered by a standard three (3) year warranty for the VIA hardware and a standard three (3) year warranty for firmware and software updates; all Kramer VIA accessories, adapters, tags, and dongles are covered by a standard one (1) year warranty.
2. Kramer fiber optic cables, adapter-size fiber optic extenders, pluggable optical modules, active cables, cable retractors, ring mounted adapters, portable power chargers, Kramer speakers, and Kramer touch panels are all covered by a standard one (1) year warranty.
3. All Kramer Cobra products, all Kramer Calibre products, all Kramer Minicom digital signage products, all HighSecLabs products, all streaming, and all wireless products are covered by a standard three (3) year warranty.
4. All Sierra Video MultiViewers are covered by a standard five (5) year warranty.
5. Sierra switchers & control panels are covered by a standard seven (7) year warranty (excluding power supplies and fans that are covered for three (3) years).
6. K-Touch software is covered by a standard one (1) year warranty for software updates.
7. All Kramer passive cables are covered by a ten (10) year warranty.

**Who is Covered**

Only the original purchaser of this product is covered under this limited warranty. This limited warranty is not transferable to subsequent purchasers or owners of this product.

**What Kramer Electronics Will Do**

Kramer Electronics will, at its sole option, provide one of the following three remedies to whatever extent it shall deem necessary to satisfy a proper claim under this limited warranty:

1. Elect to repair or facilitate the repair of any defective parts within a reasonable period of time, free of any charge for the necessary parts and labor to complete the repair and restore this product to its proper operating condition. Kramer Electronics will also pay the shipping costs necessary to return this product once the repair is complete.
2. Replace this product with a direct replacement or with a similar product deemed by Kramer Electronics to perform substantially the same function as the original product. If a direct or similar replacement product is supplied, the original product's end warranty date remains unchanged and is transferred to the replacement product.
3. Issue a refund of the original purchase price less depreciation to be determined based on the age of the product at the time remedy is sought under this limited warranty.

**What Kramer Electronics Will Not Do Under This Limited Warranty**

If this product is returned to Kramer Electronics or the authorized dealer from which it was purchased or any other party authorized to repair Kramer Electronics products, this product must be insured during shipment, with the insurance and shipping charges prepaid by you. If this product is returned uninsured, you assume all risks of loss or damage during shipment. Kramer Electronics will not be responsible for any costs related to the removal or re-installation 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, visit our web site at [www.kramerav.com](http://www.kramerav.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 (RMA number). 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 be refused.

**Limitation of Liability**

THE MAXIMUM LIABILITY OF KRAMER ELECTRONICS UNDER THIS LIMITED WARRANTY SHALL NOT EXCEED THE ACTUAL PURCHASE PRICE PAID FOR THE PRODUCT. TO THE MAXIMUM EXTENT PERMITTED BY LAW, KRAMER ELECTRONICS IS NOT RESPONSIBLE FOR DIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM ANY BREACH OF WARRANTY OR CONDITION, OR UNDER ANY OTHER LEGAL THEORY. Some countries, districts or states do not allow the exclusion or limitation of relief, special, incidental, consequential or indirect damages, or the limitation of liability to specified amounts, so the above limitations or exclusions may not apply to you.

**Exclusive Remedy**

TO THE MAXIMUM EXTENT PERMITTED BY LAW, THIS LIMITED WARRANTY AND THE REMEDIES SET FORTH ABOVE ARE EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, REMEDIES AND CONDITIONS, WHETHER ORAL OR WRITTEN, EXPRESS OR IMPLIED. TO THE MAXIMUM EXTENT PERMITTED BY LAW, KRAMER ELECTRONICS SPECIFICALLY DISCLAIMS ANY AND ALL IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. IF KRAMER ELECTRONICS CANNOT LAWFULLY DISCLAIM OR EXCLUDE IMPLIED WARRANTIES UNDER APPLICABLE LAW, THEN ALL IMPLIED WARRANTIES COVERING THIS PRODUCT, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, SHALL APPLY TO THIS PRODUCT AS PROVIDED UNDER APPLICABLE LAW.

IF ANY PRODUCT TO WHICH THIS LIMITED WARRANTY APPLIES IS A "CONSUMER PRODUCT" UNDER THE MAGNUSON-MOSS WARRANTY ACT (15 U.S.C.A. §2301, ET SEQ.) OR OTHER APPLICABLE LAW, THE FOREGOING DISCLAIMER OF IMPLIED WARRANTIES SHALL NOT APPLY TO YOU, AND ALL IMPLIED WARRANTIES ON THIS PRODUCT, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR THE PARTICULAR PURPOSE, SHALL APPLY AS PROVIDED UNDER APPLICABLE LAW.

**Other Conditions**

This limited warranty gives you specific legal rights, and you may have other rights which vary from country to country or state to state.

This limited warranty is void if (i) the label bearing the serial number of this product has been removed or defaced, (ii) the product is not distributed by Kramer Electronics or (iii) this product is not purchased from an authorized Kramer Electronics reseller. If you are unsure whether a reseller is an authorized Kramer Electronics reseller, visit our web site at [www.kramerav.com](http://www.kramerav.com) or contact a Kramer Electronics office from the list at the end of this document.

Your rights under this limited warranty are not diminished if you do not complete and return the product registration form or complete and submit the online product registration form. Kramer Electronics thanks you for purchasing a Kramer Electronics product. We hope it will give you years of satisfaction.



P/N:



2900-301349

Rev:



1



## SAFETY WARNING

Disconnect the unit from the power supply before opening and servicing

For the latest information on our products and a list of Kramer distributors, visit our website where updates to this user manual may be found.

We welcome your questions, comments, and feedback.

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