



KRAMER ELECTRONICS LTD.

# USER MANUAL

MODEL:

**MODULAR TBUS-1 Axi**  
Table Connection Bus

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P/N: 2900-300055 Rev 3

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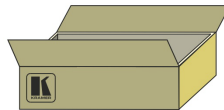
## TBUS-1Axl Quick Start Guide

This page guides you through a basic installation and first-time use of your **TBUS-1Axl**. For more detailed information, see the **TBUS-1Axl** user manual and modular instruction sheets. You can download the latest manual at <http://www.kramerelectronics.com>.

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### Step 1: Check what's in the box

- ✓ **TBUS-1Axl** Table Connection Bus Enclosure
- ✓ 2 table clamps
- ✓ 6 self locking ties
- ✓ 1 Cut out Template
- ✓ 1 Quick start guide
- ✓ 1 User Manual

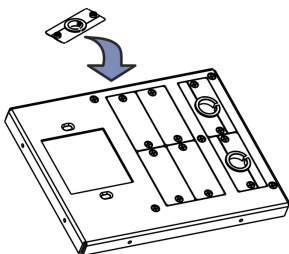


Save the original box and packaging materials in case your Kramer product needs to be returned to the factory for service.

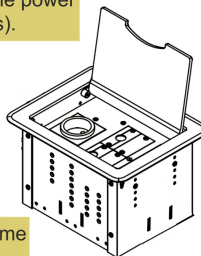
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### Step 2: Prepare the TBUS-1Axl for mounting

Assemble the Inner Frame.



Install the power socket(s).



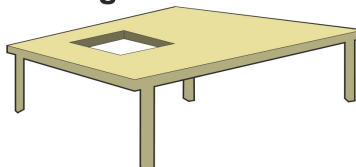
Adjust the height of the Inner Frame.

Mount the Inner Frame into the **TBUS-1Axl** enclosure.

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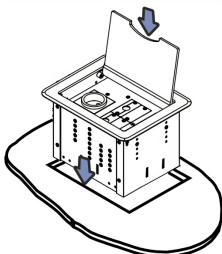
### Step 3: Prepare the table for mounting

Cut out an opening in the table using the cut out template.

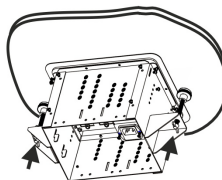


### Step 4: Install the TBUS-1Axl to the table

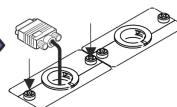
Insert the Unit through the table opening.



Secure the unit to the table.



Connect the cables.



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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 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.

Thank you for purchasing the Kramer **TBUS-1AxI** enclosure, which is ideal for boardrooms, conference and training rooms!



Note that the inner frame, power socket assembly, power cord and other inserts for the **TBUS-1AxI** enclosure are purchased separately.

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## 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



Go to <http://www.kramerelectronics.com> to check for up-to-date user manuals, a complete list of Kramer wall plates and module connectors, 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 **TBUS-1AxI** away from moisture, excessive sunlight and dust

### 2.2 Glossary

<b>Inner frame</b>	The inner frame fits into the TBUS enclosure
<b>Universal socket</b>	The Universal socket fits almost all power cords, worldwide
<b>Insert</b>	The insert is fitted in the inner frame. Go to our Web site to check for a variety of single and dual sized inserts

### 3 Overview

The **TBUS-1Axl** is a modular furniture-mounted connection bus enclosure that is easily installed into a table or podium top. Once assembled, the **TBUS-1Axl** lets you connect any equipment to the room's presentation system installations via cable access or passive interfaces (see [Figure 1](#)). When the cables are not in use, they can be stored inside the unit, covered by the lid and out of sight.

In addition, the **TBUS-1Axl** features:

- A modular design, letting you tailor the **TBUS-1Axl** according to your requirements
- A black anodized or brushed clear aluminum lid with a special opening for cable pass-through, (note, that other customized colors can also be ordered)
- Height adjustment screw holes to set the inner frame (ordered separately) to the desired height
- Single or dual power socket openings that are suitable for any of the following power sockets: for the USA, Germany (the Europlug), Belgium-France, Italy, Australia, Israel, South Africa or "Universal" for use anywhere (see compatibility restrictions in [Section 7](#))

Order the power sockets separately from Kramer Electronics



Figure 1: TBUS-1Axl inside a Table



Do not place heavy objects on top of the **TBUS-1Axl**.

## 4 Your TBUS-1Axl Enclosure

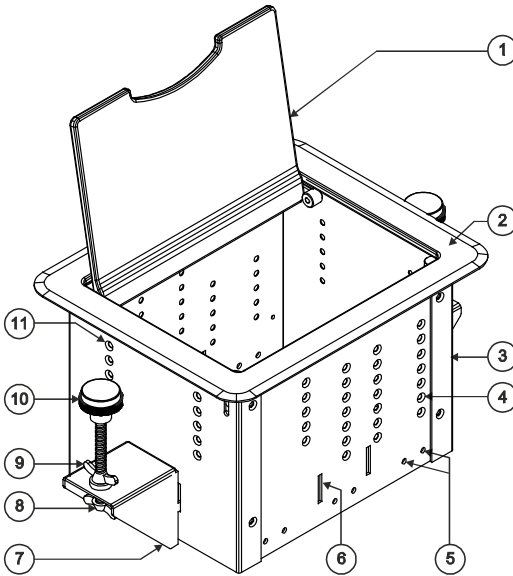
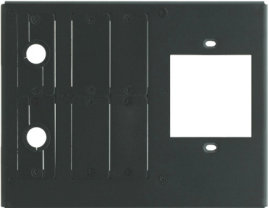
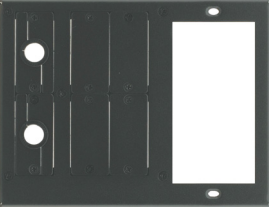
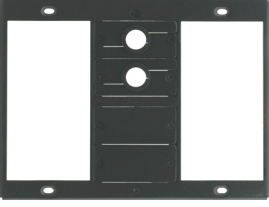
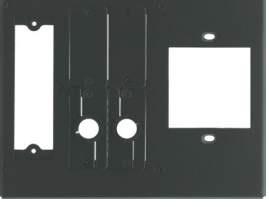


Figure 2: TBUS-1Axl Enclosure Top View

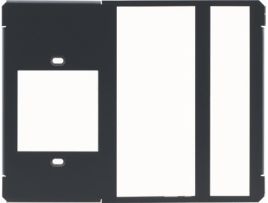
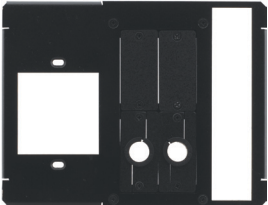
#	Feature	Function	
1	Black Anodized/Brushed Clear Textured Lid	Includes an opening for cable pass-through; covers the inner frame, leaving the table surface neat and tidy	
2	Outer Rim	Fits over the table surface. A protective rubber guard protects the outer rim during shipping. Remove it before installing the unit	
3	Enclosure	Inserted into the table cut out	
4	TOOL Height Adjustment Screw Holes	Used for installing Kramer TOOLS	
5	Tie Holes	Insert the self-locking tie through the holes to fix the pass-through cables to the inside walls of the unit	
6	Bracket Slits	For attaching the two mounting brackets on opposite sides	
7	Table Clamping Set	Rubber Protectors	Protect the table surface when mounting the unit and ensure soft tightening to the table underside (one for each clamp)
8		Locking Butterfly Screws	Tighten to lock the mounting butterfly screw (one for each clamp)
9		Mounting Butterfly Screws	Tighten to secure the unit to the table surface (one for each clamp)
10		Mounting Brackets (2 units)	Place in the bracket slits after inserting the enclosure into the table – for securing the unit to the table surface (one for each clamp)
11	Inner Frame Height Adjustment Screw Holes	For adjusting the height of the mounted inner frame	

## 4.1 TBUS-1AxI Optional Inner Frames

The following inner frames can be installed in the **TBUS-1AxI** enclosure:

Inner Frames for TBUS-1A	Specifications (define what you can include in this inner frame):
	<p><b>T1AF-16 (P/N: 80-000299)</b></p> <p>1 opening for 1 power socket            2 cable pass-through inserts            4 blank inserts</p>
	<p><b>T1AF-26 (P/N: 80-000399)</b></p> <p>1 opening for 2 power sockets            2 cable pass-through inserts            4 blank inserts</p>
	<p><b>T1AF-44 (P/N: 80-000499)</b></p> <p>2 openings for 4 power sockets            2 cable pass-through inserts            2 blank inserts</p>
	<p><b>T1AF-14L (P/N: 80-000699)</b></p> <p>1 opening for 1 power socket            1 opening for Kramer <b>SI-1VGA / RC-3TB</b>            2 cable pass-through inserts            2 blank inserts</p>



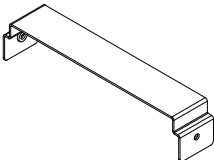


	<p><b>T1AF-1T3 (P/N: 80-005199)</b></p> <p>1 opening for 1 power socket 2 openings for 3 Kramer TOOLS</p>
	<p><b>T1AF-14T (P/N: 80-005299)</b></p> <p>1 opening for 1 power socket 1 opening for 1 Kramer TOOL 2 cable pass-through inserts 2 blank inserts</p>



Custom made inner frames can be designed if required.  
Contact Kramer Electronics for more details.

## 4.2 TBUS-1Axl Accessories

Accessories	Description
<p>Inserts</p>	<p>You can install any wall plate devices as well as any of the single or dual inserts—see our Web site for details.</p>
	<p><b>T-RC8IR (P/N: 80-000599)</b></p> <p>1 special panel to fit the Kramer <b>RC-8IR</b> Control Panel into the appropriate frame (P/N 80-000399 or P/N 80-000499 instead of two power sockets)</p>
	<p><b>T-2INSERT (P/N: 80-00006699)</b></p> <p>The <b>T-2INSERT</b> kit can be installed inside a single power socket opening and includes:</p> <p>1 single cable pass-through insert 1 dual cable pass-through insert</p>
	<p><b>T-TBLANK (P/N: 80-005099)</b></p> <p>This TOOL blank covers a TOOL opening for the <b>T1AF-1T3</b> (P/N: 80-005199) and <b>T1AF-14T</b> (P/N: 80-005299) inner frames</p>

### 4.3 Power Socket Options

A choice of one or more power sockets per inner frame is available in several versions, including power sockets for the USA, Germany (the Europlug), 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).

#### The Single Power Socket Assemblies

Power Socket Type	Power Specs		
Universal: 	<b>TS-1U (80-000899)</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	Power Socket Type	Power Specs
USA: 	<b>TS-1US (80-000999)</b>  100-240V AC, 50/60Hz, 5A  Maximum 5A per power outlet	Italy: 	<b>TS-1IT (80-001499)</b>  100-240V AC, 50/60Hz, 5A  Maximum 5A per power outlet
Germany and EU: 	<b>TS-1DE (80-001299)</b>  100-240V AC, 50/60Hz, 5A  Maximum 5A per power outlet	Australia: 	<b>TS-1AU (80-001599)</b>  100-240V AC, 50/60Hz, 5A  Maximum 5A per power outlet
Belgium and France: 	<b>TS-1FR (80-001399)</b>  100-240V AC, 50/60Hz, 5A  Maximum 5A per power outlet	Israel: 	<b>TS-1IL (80-001799)</b>  220V AC, 50/60Hz, 5A  Maximum 5A per power outlet
South Africa 	<b>TS-1ZA (80-001699)</b>  100-240V AC, 50/60Hz, 5A  Maximum 5A per power outlet		

Dual power sockets are used for **TBUS-1Axi** with two or four power sockets:

Dual Power Socket Assemblies:	Power Specs
Universal: 	<b>TS-2U (80-001899)</b>  100-240V AC, 50/60Hz, 5A Maximum 5A/2.5A per power outlet
USA: 	<b>TS-2US (80-001999)</b>  100-240V AC, 50/60Hz, 5A Maximum 5A/2.5A per power outlet
Germany and EU: 	<b>TS-2DE (80-002199)</b>  100-240V AC, 50/60Hz, 5A Maximum 5A/2.5A per power outlet
France: 	<b>TS-2FR (80-002299)</b>  100-240V AC, 50/60Hz, 5A Maximum 5A/2.5A per power outlet
Italy 	<b>TS-2IT (80-002399)</b>  100-240V AC, 50/60Hz, 5A Maximum 5A/2.5A per power outlet
Australia: 	<b>TS-2AU (80-002499)</b>  100-240V AC, 50/60Hz, 5A Maximum 5A/2.5A per power outlet
Israel: 	<b>TS-2IL (80-002699)</b>  220V AC, 50/60Hz, 5A Maximum 5A/2.5A per power outlet
South Africa: 	<b>TS-2ZA (80-002599)</b>  220V AC, 50/60Hz, 5A Maximum 5A/2.5A per power outlet

## 4.4 Power Cord Options

You can order any of the following power cords to use with a modular TBUS:

Power Cord Type	Description	P/N
6ft/110V (North America)	C-AC/US (110V)	91-000099
6ft/125V (Japan)	C-AC/JP (125V)	91-000699
6ft/220V (Europe)	C-AC/EU (220V)	91-000199
6ft/220V (Israel)	C-AC/IL (220V)	91-000999
6ft/250V (UK)	C-AC/UK (250V)	91-000299
6ft/250V (India)	C-AC/IN (250V)	91-001099
6ft/250V/10A (China)	C-AC/CN (250V)	91-001199
6ft/250V/10A (South Africa)	C-AC/ZA (250V)	91-001299

To use one power cord for a 4-socket configuration, you can order any of the following types of power cords separately:

Power Cord Type	Description	P/N
110V Y-version (6ft), North America	C-ACY/US	91-000399
220V Y-version (6ft), Europe	C-ACY/EU	91-000499
240V Y-version (6ft), UK	C-ACY/UK	91-000599

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## 5 Installing the TBUS-1AxI

To install the **TBUS-1AxI** perform the following steps:

1. Assemble the inner frame (see [Section 5.1](#)).
2. Install the inner frame (see [Section 5.2](#)).
3. Cut an opening in the table (see [Section 5.3](#)).
4. Insert the unit through the opening and secure to the table (see [Section 5.4](#)).
5. Connect the cables (see [Section 5.5](#)).
6. Insert the pass-through cables (see [Section 5.6](#)).
7. Adjust the height of the inner frame (see [Section 5.7](#)).

### 5.1 Assembling the Inner Frame

The modules mounted on the inner frame can include single inserts and/or dual inserts as well as power sockets and various Kramer devices. This section describes how to assemble these modules.



Each module kit comes with detailed assembly instructions.

#### 5.1.1 Mounting the Inserts

You can rearrange or remove any of the plates mounted on the inner frame and replace them with Kramer passive wall plates or connector modules for interfacing A/V type signals.

To mount a Kramer insert or connector module:

1. Unscrew the two screws that fasten the blank plate to the inner frame and remove the blank plate.
2. Place the required Kramer insert over the opening, insert the two screws to fix the Kramer insert in place, and tighten them.

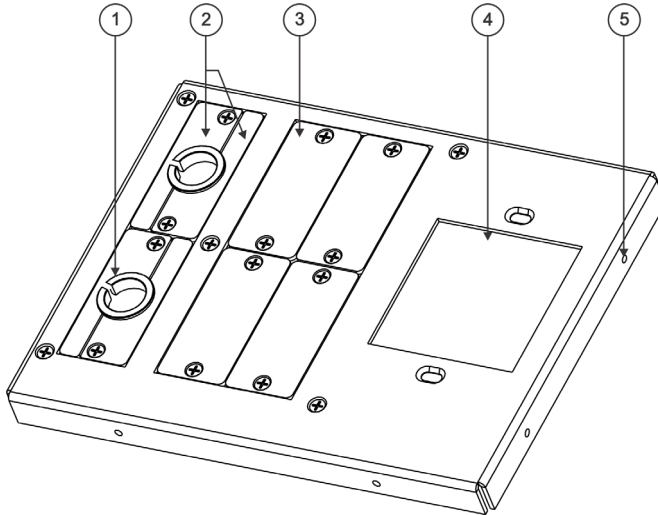


Figure 3: TBUS-1Axl Inner Frame (P/N: 80-000299)

#	Feature	Function
1	Split Grommets	Push apart slightly to insert cables
2	Split Brackets	Support the split grommet for the pass through-cables
3	Blank Plates	Four blank covers that can be replaced with wall plates as required
4	Power Socket Opening	Suitable for a single power socket or the <b>T-2INSERT</b>
5	Adjustable Height Screw Holes	For adjusting the height of the inner frame

### 5.1.2 Mounting the Power Socket Assemblies

To mount the power socket, place the power socket under the frame in its appropriate place and tighten with the two screws (supplied).



Power socket kits come with assembly instructions.

### 5.1.3 Mounting a Kramer TOOL

To mount a TOOL (for example, to the **T1AF-14T**), as shown in [Figure 4](#):

1. Screw the spacers to their designated places (one on each side).
2. Insert the TOOL, from beneath, through the TOOL opening.

3. Screw the screws (one on each side) through the frame holes and spacers.

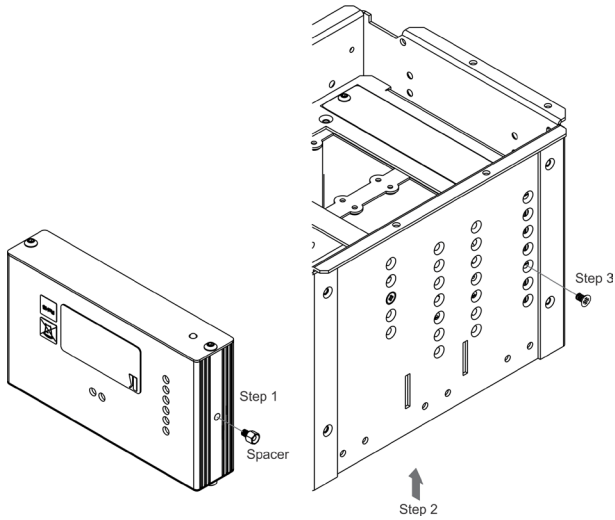


Figure 4: Installing a Kramer TOOL

#### 5.1.4 Installing the TOOL Blank

To install the **T-TBLANK**, as shown in [Figure 5](#):

1. Insert the **T-TBLANK** from beneath, through the TOOL opening.
2. Screw the screws (one on each side) through the frame.

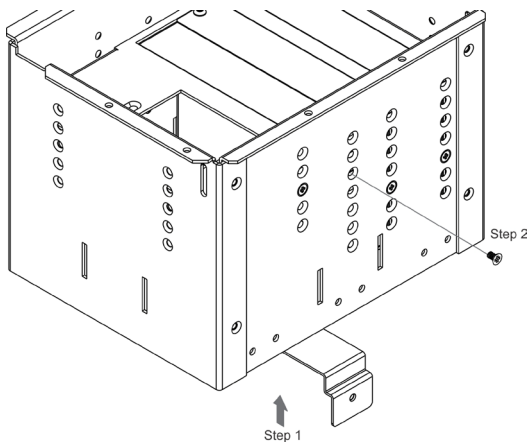


Figure 5: Installing the T-TBLANK TOOL Blank

### 5.1.5 Mounting the Special Panel for RC-8IR

The Kramer **T-RC8IR** for the **TBUS-1AxI** Table Connection bus is used to fit the Kramer **RC-8IR** Control Panel into the appropriate frame (P/N 80-000399 or P/N 80-000499 instead of two power sockets).

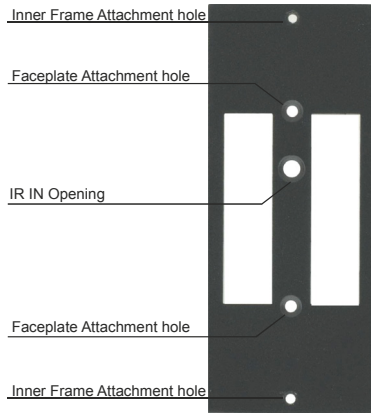


Figure 6: T-RC8IR (P/N: 80-000599)

### Remove the RC-8IR Faceplate

1. Before installing the **T-RC8IR**, unscrew the two faceplate attachment screws and remove the **RC-8IR** faceplate.

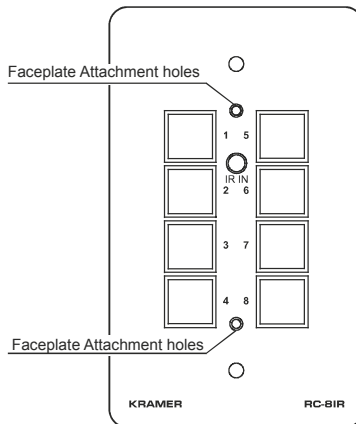


Figure 7: RC-8IR Faceplate holesTable Connection Bus



2. Place the **T-RC8IR** over the **RC-8IR** enclosure so that both face plate holes are aligned with the face plate holes on the **RC-8IR** enclosure and the IR IN receiver fits into the IR IN opening.
3. Insert the faceplate screws through the **T-RC8IR** and **RC-8IR** enclosure faceplate holes, and tighten.

## Installation Instructions

To install the **T-RC8IR**:

1. Insert the **T-RC8IR** assembly through the dual power socket opening from beneath.
2. Use the two power socket screws to tighten the **T-RC8IR** assembly in place.

### 5.1.6 Installing the SI-1VGA / RC-3TB

To install the **SI-1VGA / RC-3TB** module, place it under the designated opening in the **T1AF-14L** (P/N: 80-000699) and then screw and tighten it in place using two screws supplied with the inner frame.

## 5.2 Installing the Inner Frame

To install the inner frame:

1. Place the inner frame inside the **TBUS-1AxI** enclosure.
2. Set the required height using your fingers to bring the inner frame to the desired position, screw and tighten it in place using the height adjustment screws (supplied with the inner frame).



Inner frame kits come with assembly instructions.

## 5.3 Cutting an Opening in the Table

To cut an opening in the table:

1. Place the included cut out template (that is included with your **TBUS-1AxI**) on the surface of the table exactly where you want to install the **TBUS-1AxI**.
2. Attach the template to the table with the included screws (if using the cut out template).
3. Following the **inside** edge of the template, cut a hole in the table surface with a sabre or keyhole saw according to the dimensions shown in [Figure 8](#) (not to scale).



The thickness of the table should be 76.2 mm / 3 inches or less.

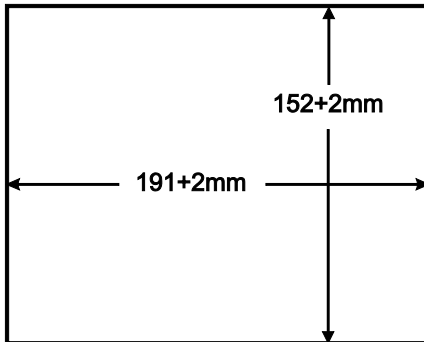


Figure 8: Cut out Dimensions

4. Unscrew and remove the template from the surface of the table and clean the table surface.

Take care not to damage the table.

If needed, you can download a full-scale template from our Web site.



Kramer Electronics is not responsible for any damage caused to the table.

## 5.4 Inserting the TBUS-1AxI through the Cut Out Opening

To install **TBUS-1AxI** in the opening:

1. Remove the protective rubber guard from around the outer rim of the **TBUS-1AxI** housing. **Beware of the sharp edge!**
2. Carefully insert the unit into the prepared opening (see [Figure 9](#)).
3. Take the support brackets under the table and place them into the support bracket grooves on both sides of the unit (see [Figure 2](#), item 7).
4. Verify proper alignment of the unit before tightening the mounting screws.
5. Tighten both mounting butterfly screws upward until they reach the table surface (from underneath). Tighten firmly (see [Figure 9](#)).
6. Tighten the locking butterfly screws downward until tight against the mounting bracket.

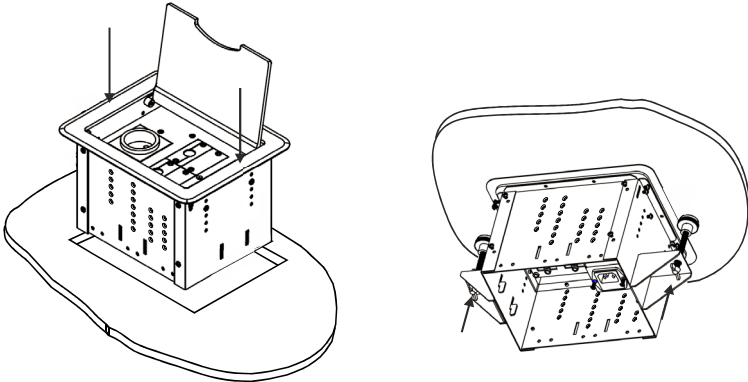


Figure 9: Inserting TBUS-1AxI into the Prepared Opening

## 5.5 Connecting the Cables

When replacing blank inserts with connector inserts (for example, VGA, audio, HDMI and so on):

1. Insert the cables to their appropriate connectors from underneath.

2. Secure the cables to the tie holes on the **TBUS-1Ax1**.  
Do not secure the cables too tightly or too loosely. Leave a small amount of slack.

## 5.6 Inserting the Pass-through Cables

To insert the pass through cables (for example, to connect a laptop) do the following:

1. Remove the two screws attaching the split pass-through bracket.
2. Remove the split grommet.
3. Insert the cable through the rectangular opening.
4. Open the split grommet slightly and insert the required cables.
5. Place the split bracket around the grommet and position this assembly over the inner frame.
6. Place the two screws appropriately and tighten the split bracket together with the grommet and inserted cables to the inner frame.
7. Insert the self-locking ties through the tie holes to secure the cables to the inside walls of the enclosure.

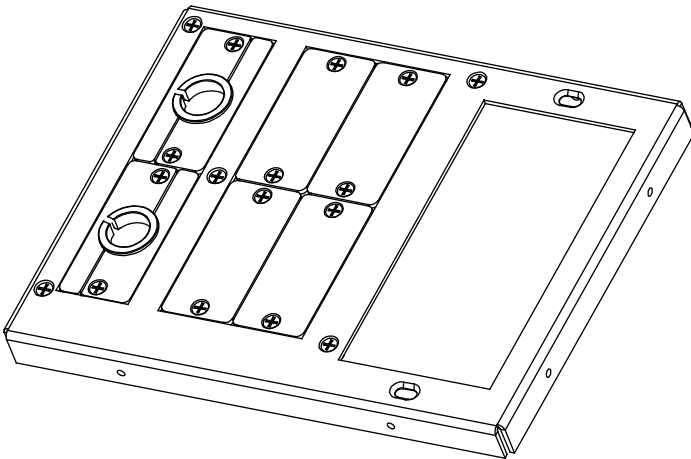


Figure 10: Cable Pass-through Insert (P/N: 80-000399)

## 5.7 Adjusting the Height of the Inner Frame

If needed, you can adjust the inner frame height to accommodate large or bulky cables. To adjust, perform the following:

1. Remove the height adjustment screws, while supporting the surface from underneath with your fingers.
2. Raise or lower the inner frame to the required height, insert the screws, and tighten them in place.

## 6 Using the TBUS-1Axl

Once the **TBUS-1Axl** is installed, you can easily customize it to suit your own requirements by plugging in the required A/V equipment, as illustrated in the example in [Figure 11](#).

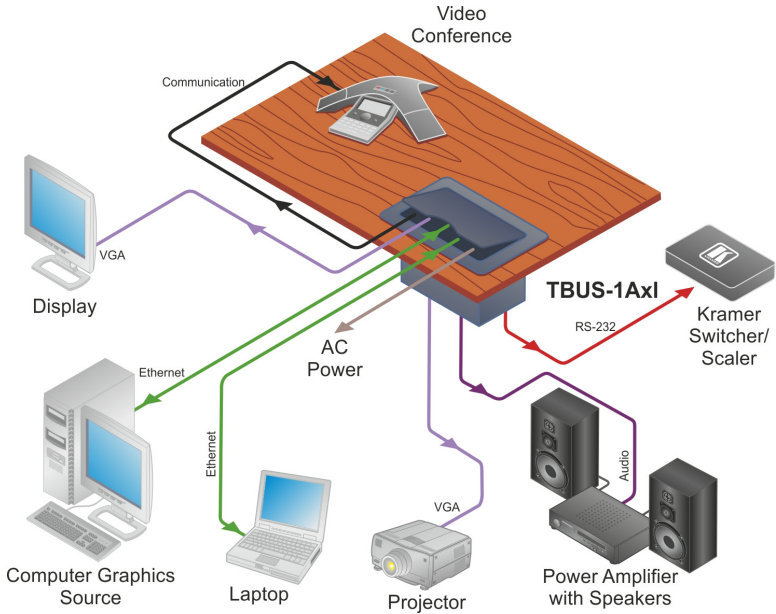


Figure 11: TBUS-1Axl Boardroom Installation

# 7 Technical Specifications of the Assembled TBUS-1Axl

POWER SOURCE (AC power limits):	<b>Single Socket Assemblies:</b>		
	Universal	100-240V AC, 50/60Hz, 5A Maximum 5A per power outlet	
	<p><b>Fully compatible</b> with power plugs in the UK, India, Italy and Denmark, as well as with the 2-prong Europlug.</p> <p><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 (you should order country specific sockets instead).</p> <p><b>Not compatible</b> with South African plugs.</p>		
	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	
	<b>Dual Power Kit Assemblies:</b>		
	Universal	100-240V AC, 50/60Hz, 5A Maximum 5A/2.5A per power outlet	
	USA	100-240V AC, 50/60Hz, 5A Maximum 5A/2.5A per power outlet	
	Germany and EU	100-240V AC, 50/60Hz, 5A Maximum 5A/2.5A per power outlet	
	France	100-240V AC, 50/60Hz, 5A Maximum 5A/2.5A per power outlet	
	Israel	220V AC, 50/60Hz, 5A Maximum 5A/2.5A per power outlet	
	South Africa	220V AC, 50/60Hz, 5A Maximum 5A/2.5A per power outlet	
	FUSE RATING:	T 6.3A 250V	
	OPERATING TEMPERATURE RANGE:	+5 to +45 Deg. Centigrade	
	OPERATING HUMIDITY RANGE:	10 to 90% RHL, non-condensing	
STORAGE TEMPERATURE RANGE:	-20 to +70Deg. C.		
STORAGE HUMIDITY RANGE:	5 to 95% RHL, non-condensing		
DIMENSIONS:	22.1cm x 18.2cm x 13cm (8.17" x 5.88" x 5.13") W, D, H		
WEIGHT:	TBUS-1A: 1.5kg (3.3lbs) approx.; Table clamps: 0.26kg (0.57lbs); Metal template: 0.125kg (0.28lbs)		
ACCESSORIES:	Power cord, six self-locking ties, metal template		
OPTIONS:	Inner frames, passive wall plates and interfaces, power socket kits, power cord		
Specifications are subject to change without notice at <a href="http://www.kramerelectronics.com">http://www.kramerelectronics.com</a>			

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### What is Not Covered

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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.
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**SAFETY WARNING**

Disconnect the unit from the power supply before opening and servicing