# KRAMER



# **USER MANUAL**

# **MODEL:**

PT-871/2-KIT, PT-871/2xr-KIT, WP-871xr, WP-872xr, PT-871xr, PT-872xr HDMI Line Transmitters and Receivers over Long-Reach DGKat

















P/N: 2900-300716 Rev 2 www.kramerAV.com

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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!

# **Getting Started**

Achieving Best Performance on page 1

Safety Instructions on page 1

Recycling Kramer Products on page 2

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 <u>k.kramerav.com/support/product\_downloads.asp</u> 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 PT-871/2-KIT, PT-871/2xr-KIT, WP-871xr, WP-872xr, PT-871xr, PT-872xr away from moisture, excessive sunlight and dust.



This equipment is to be used only inside a building. It may only be connected to other equipment that is installed inside a building.

# **Safety Instructions**



Caution: There are no operator serviceable parts inside the unit

Warning: Use only the Kramer Electronics power supply that is provided with the unit

Warning: Disconnect the power and unplug the unit from the wall before installing

# **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 <a href="https://www.kramerav.com/support/recycling">www.kramerav.com/support/recycling</a>.

# Overview

Congratulations on purchasing your Kramer PT-871/2-KIT, PT-871/2xr-KIT, WP-871xr, WP-872xr, PT-871xr, PT-872xr HDMI Line Transmitters and Receivers over Long-Reach DGKat. PT-871/2-KIT, PT-871/2xr-KIT, WP-871xr, WP-872xr, PT-871xr, PT-872xr are high-performance, long-reach DGKat™ 2.0 transmitters and receivers for 4K@60Hz (4:4:4) HDR, HDMI™, HDCP 2.2 signals and 2-way powering over twisted pair. The transmitters convert the HDMI input signal into a DGKat™ 2.0 signal. The receivers convert the transmitted DGKat™ 2.0 signal into an HDMI signal.

- High Performance Extender Professional DGKat<sup>™</sup> 2.0 extender for providing longreach signals over twisted pair copper infrastructures. These devices employ lowlevel video compression technology that delivers visually lossless performance for 4K@60Hz (4:4:4) HDR signals with near-zero latency.
- HDMI Signal Extension HDCP 2.2 compliant. Support HDR, deep color, x.v.Color™, lip sync, HDMI uncompressed audio channels, Dolby TrueHD, DTS-HD, 2K, 4K, and 3D as specified in HDMI 2.0. EDID signals are passed through from the source to the display.
- EDID Pass-through pass-through algorithm ensures Plug and Play operation for HDMI source and display systems.
- Multi-channel Audio Extension Up to 32 channels of digital stereo uncompressed signals for supporting studio-grade surround sound.
- Cost-effective Maintenance Status LED indicators for power and connectivity facilitate easy local maintenance and troubleshooting.
- Easy and Cost-effective Installation Installation is fast and cost-effective via a single twisted pair cable, providing both video signal and power (PoC) connections.
   PT-871/2-KIT, PT-871/2xr-KIT, PT-871xr, and PT-872xr are designed with Compact Pico TOOLS™ fan-less enclosure for device-back mounting, or side-by-side mounting of 4 units in a 1U rack space with the recommended rack adapter. The WP-871xr and WP-872xr wall plates compactly fit into a standard US, EU and UK 1-gang in-wall box size, supporting decorative integration with room-deployed user interfaces such as electrical switches.

# **Typical Applications**

PT-871/2-KIT, PT-871/2xr-KIT, WP-871xr, WP-872xr, PT-871xr, PT-872xr are ideal for the following typical applications:

- Long-distance AV signal extension for large room connectivity.
- AV extension in meeting rooms, boardrooms, hotels and corporate facilities.

# Defining PT-871/2-KIT, PT-871/2xr-KIT, WP-871xr, WP-872xr, PT-871xr, PT-872xr

(i)

PT-871/2-KIT includes PT-871 and PT-872. PT-871/2xr-KIT includes PT-871xr and PT-872xr.

PT-871

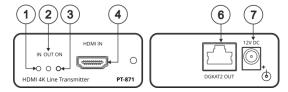


Figure 1: PT-871 Line Transmitter

#### PT-872

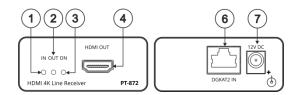
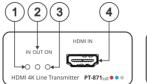


Figure 2: PT-872 Line Receiver

## PT-871xr



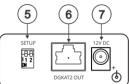
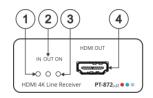


Figure 3: PT-871xr Line Transmitter

# PT-872xr



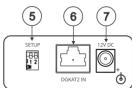


Figure 4: PT-872xr Line Receiver

#	Feature		Function	
1	1 LED IN Indicators		Lights when an active source is connected to HDMI IN on the transmitter.	
2		OUT	Lights when an active ac	ceptor is connected to HDMI OUT on the receiver.
3		ON	Lights when power is con	nnected to the device.
4	4 HDMI IN Connector (PT-871, PT-871xr)		Connect to an HDMI source.	
	HDMI OUT Connector (PT-872, PT-872xr)		Connect to an HDMI acceptor.	
5			Always set DIP-switch 1 identically on both devices.	
(PT-871xr, PT-872xr)		DIP-switch 1: Compression Options	OFF (up) – Standard compression level (default). ON (down) – High compression level for additional range extension.	
			DIP-switch 2:	Must be set to OFF (up).
		Connect to the DGKat- pair cable.	2.0 IN connector on the PT-872xr using twisted	
	IN (PT-872, PT- 872xr)		Connect to the DGKat- twisted pair cable.	2.0 OUT connector on the PT-871xr using
7	7 12V DC Connector		Connect to the power a	dapter of one of the devices.

## **WP-871xr**

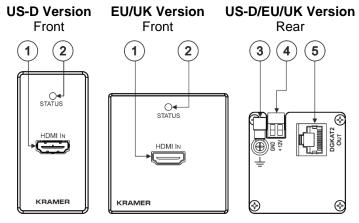


Figure 5: WP-871xr Line Transmitter Wall-plate

## **WP-872xr**

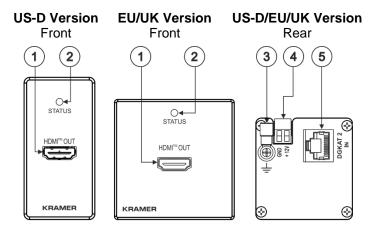


Figure 6: WP-872xr Line Receiver Wall-plate

#	Feature	Function
(1)	HDMI IN Connector (WP-871xr)	Connect to an HDMI source.
	HDMI OUT Connector (WP-872xr)	Connect to an HDMI acceptor.
2	STATUS LED	Lights green when power is connected to the device.  Lights blue when powered and both active source and acceptor are detected.
3	Ring Tongue Terminal Grounding Screw	Connect to grounding wire (optional).
4	Power Supply 2-pin Terminal Block Connector	Connect to the power adapter (if required). Connect GND to GND, +12V to +12V.
5	DGKAT2 OUT RJ-45 Connector	Connect to the DGKat-2.0 IN connector on the PT-872xr or WP-872xr using CAT 6A cable.
	DGKAT2 IN RJ-45 Connector	Connect to the DGKat-2.0 OUT connector on the PT-871xr or WP-871xr using CAT 6A cable.

## WP-871xr - Front Panel Before Assembly

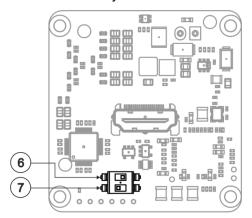


Figure 7: WP-871xr Line Transmitter Wall-plate – Front Panel Before Assembly

#	Feature	Function	
	SETUP DIP-switches	Do not change the default DIP-switch settings (located on the front panel, behind the frame)	
6	DIP-switch 1	Must be set to ON (right).	
7	DIP-switch 2	Must be set to OFF (left).	

## WP-872xr - Front Panel Before Assembly

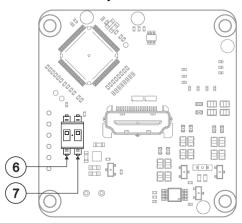


Figure 8: WP-872xr Line Receiver Wall-plate - Front Panel Before Assembly

#	Feature	Function	
	SETUP DIP-switches	Do not change the default DIP-switch settings (located on the front panel, behind the frame)	
6	DIP-switch 2	Must be set to OFF (up).	
7	DIP-switch 1	Must be set to ON (down).	

# **Installing Device**

This section provides instructions for installing PT-871/2-KIT, PT-871/2xr-KIT, WP-871xr, WP-872xr, PT-871xr, PT-872xr.

Before installing the device, verify that the environment is within the recommended range:

- Operation 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.

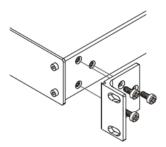


## When installing on a 19" rack, avoid hazards by taking care that:

- It is located within recommended environmental conditions. Operating ambient temperature of a closed or multi-unit rack assembly may exceed ambient room temperature.
- There is enough air flow around the device.
- The device is placed upright in the correct horizontal position.

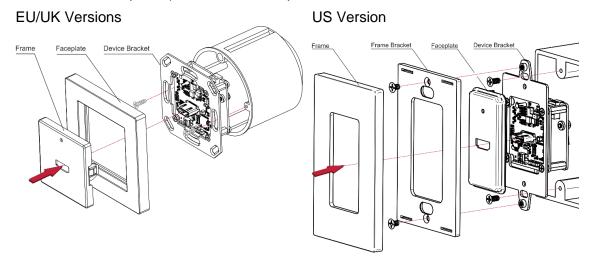
## To mount PT-871/2-KIT, PT-871/2xr-KIT, PT-871xr and PT-872xr:

- Mount the unit in a rack using the recommended rack adapter www.kramerav.com/downloads/PT-871/2-KIT.
- Fasten a bracket (included) on each side of the unit and attach it to a flat surface.
  - For more information go to <a href="https://www.kramerav.com/downloads/PT-871/2-KIT">www.kramerav.com/downloads/PT-871/2-KIT</a>.
- Attach the rubber feet and place the unit on a flat surface.



# To mount the WP-871xr and WP-872xr wall plate:

Insert the device into the in-wall box (note that first you need to connect the DGKAT
 2.0 cable and power) and connect the parts as shown in the illustrations below:



We recommend that you use any of the following standard 1 Gang in-wall junction boxes (or their equivalent):

- US-D: 1 Gang US electrical junction boxes.
- **EU**: 1 Gang in-wall junction box, with a cut-hole diameter of 68mm and depth that can fit in both the device and the connected cables (DIN 49073).
- **UK**: 1 Gang in-wall junction box, 75x75mm (W, H), and depth that can fit in both the device and the connected cables (BS 4662).

# **Connecting Device**

- Always switch off the power to each external device before connecting it to your PT-871/2-KIT, PT-871/2xr-KIT, WP-871xr, WP-872xr, PT-871xr, PT-872xr. After connecting your PT-871/2-KIT, PT-871/2xr-KIT, WP-871xr, WP-872xr, PT-871xr, PT-872xr, connect its power and then switch on the power to each device.
- We highly recommend using only Kramer UNIKAT cables with these products. If using 3<sup>rd</sup> party shielded CAT-6A cables, both ends of the shield must be soldered to the connectors for the products to function properly. Do not use any jumpers, unshielded wall plates or mid-span cable connections. These extenders are not compatible with HDBaseT technologies. Prior to signal extension, ensure that the extension line cable is lying straight and not coiled.

# Connecting PT-871/2-KIT, PT-871/2xr-KIT, PT-871xr, PT-872xr

For illustrative purposes, the figure below shows PT-871/2xr-KIT, but the same connections apply to PT-871/2-KIT.

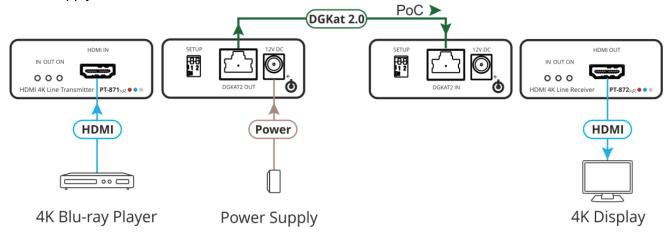


Figure 9: Connecting to PT-871/2xr-KIT

To connect PT-871/2-KIT, PT-871/2xr-KIT, PT-871xr, and PT-872xr as illustrated in Figure 9:

- 1. Connect the HDMI video source to the HDMI IN Connector (4) on the transmitter.
- 2. Connect the DGKat2 OUT RJ-45 Connector (5) on the transmitter to the DGKat2 IN RJ-45 Connector (5) on the receiver using a DGKat 2.0 cable.
- 3. Connect the HDMI video acceptor to the HDMI OUT Connector (5) on the receiver.
- 4. Connect the power adapter to either the transmitter or receiver. Each device provides power to its counterpart via DGKat 2.0. Each device can provide or accept power over cable (PoC) via DGKat 2.0. We recommend that you use only the power cord that is supplied with this device.

# Connecting WP-871xr, and WP-872xr/PT-872xr



For illustrative purposes, the figure below shows **PT-872xr** as the receiver, but the same connections apply when using **WP-872xr** as the receiver.

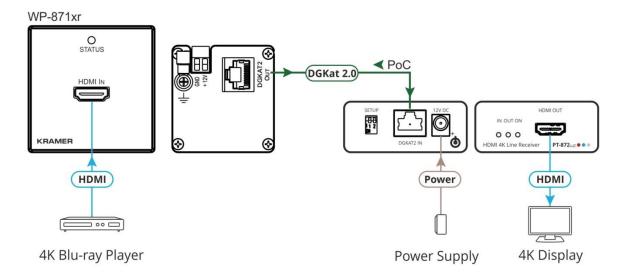


Figure 10: Connecting to WP-871xr and PT-872xr

# To connect WP-871xr and WP-872xr/PT-872xr as illustrated in Figure 9:

- 1. Connect the HDMI video source to the HDMI IN Connector (1) on WP-871xr.
- 2. Connect the DGKat2 OUT RJ-45 Connector (5) on WP-871xr to the DGKAT2 IN RJ-45 Connector (6) on the PT-872xr (WP-872xr) receiver using a DGKat 2.0 cable.
- 3. Connect the HDMI video acceptor to the HDMI OUT Connector 4 on the PT-872xr (WP-872xr) receiver.
- Make sure PT-872xr DIP-switch 1 is set to ON (down = high-compression).

  WP-872xr only supports high compression.
  - 4. Connect the power adapter to the PT-872xr (WP-872xr) receiver.
- Alternatively, you can connect the WP-871xr power adapter and PT-872xr is powered by PoC.
- We recommend that you use only the power cord that is supplied with the PT-872xr/ (WP-872xr) receiver.

# Connecting PT-871xr and WP-872xr

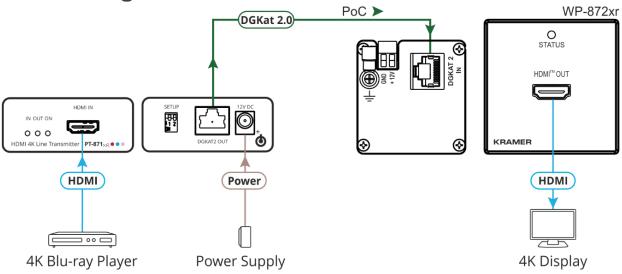


Figure 11: Connecting to PT-871xr and WP-872xr

## To connect PT-871xr and WP-872xr as illustrated in Figure 9:

- 1. Connect the HDMI video acceptor to the HDMI OUT Connector (1) on WP-872xr.
- 2. Connect the DGKat2 IN RJ-45 Connector (5) on WP-872xr to the DGKAT2 OUT RJ-45 Connector (6) on the PT-871xr receiver using a DGKat 2.0 cable.
- 3. Connect the HDMI video source to the HDMI IN Connector 4 on the PT-871xr transmitter.
- Connect the power adapter to the PT-871xr transmitter.
   We recommend that you use only the power cord that is supplied with the PT-871xr transmitter.
- Alternatively, you can connect the **WP-821xr** power adapter and **PT-871xr** is powered by PoC.

# **Setting Compression Level**

PT-871xr, and PT-872xr include a Compression Options DIP-switch (DIP-switch 1) that enables selecting the compression level.



By default, the Compression Options DIP-switch (DIP-switch 1) is set to OFF (up = standard compression).

Always set the DIP-switches identically for a connected transmitter and receiver.

When connecting to one of the wall plates, always set the DIP switches to high compression.

The following table describes the PT-871xr, and PT-872xr DIP-switches.

DIP-Switch	Functions
DIP-switch 1:	OFF (up) – Standard compression level.
Compression Options	ON (down) – High compression level for additional range extension.
DIP-switch 2	Must be set to OFF (up).

## To set the compression level for PT-871xr, and PT-872xr:

- 1. Set DIP-switch 1 to the required compression level.
- 2. Reboot the device.

The compression level is set.

# **Technical Specifications**

# PT-871/2-KIT

PT-871		
Inputs	1 HDMI	On a female HDMI connector
Outputs	1 DGKAT 2.0	On a female RJ-45 connector
PT-872		
Inputs	1 DGKAT 2.0	On a female RJ-45 connector
Outputs	1 HDMI	On a female HDMI connector
General		
Video	Max. Data Rate	18Gbps (6Gbps per graphic channel)
	Max. Resolution	3840x2160@60Hz (4:4:4) 24bpp
	Compliance	HDR10 as specified in HDMI 2.0, HDCP 2.2
Extension Line	We recommend that you optimum extension ran	ou use Kramer shielded cables to achieve ages.
	Max. Range	40m (130ft) at 4K60 (4:4:4 or 4:2:0) or full HD (1080p @60Hz 36bpp)
	Signal Compression	Low-level compression is applied to line- transmitted signals of above 1080p resolution
	Compliance	DGKat 2.0
User Interface	Indicators	IN, OUT and ON LEDs
Power	Source	12V DC, 2A
	Consumption	600mA
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	Safety	CE, UL
Compliance	Environmental	RoHs, WEEE
Enclosure	Size	Pico TOOLS™
	Туре	Aluminum
	Cooling	Convection ventilation
General	Product Dimensions	6.22cm x 5.18cm x 2.44cm (2.45" x 2.04" x 0.96" ) W, D, H
	Product Weight	0.1kg (0.2lbs) approx.
	Shipping Dimensions	15.70cm x 12.00cm x 8.70cm (6.18" x 4.72" x 3.43" ) W, D, H
	Shipping Weight	0.4kg (0.8lbs) approx.
Accessories	Included	1 Power adapter (Note: When purchasing PT-871/2-KIT, only one power adapter is supplied for both units.)
Specifications are subject to change without notice at <a href="www.kramerav.com">www.kramerav.com</a>		

# PT-871/2xr-KIT, PT-871xr, and PT-872xr

Inputs		<u> </u>	
Dutputs	PT-871xr		
Inputs	Inputs	1 HDMI	On a female HDMI connector
Inputs	Outputs	1 DGKAT 2.0	On a female RJ-45 connector
Outputs         1 HDMI         On a female HDMI connector           General         Max. Data Rate         Up to 18Gbps (6Gbps per graphic channel)           Max. Resolution         3840x2160@60Hz (4:4:4) 24bpp at high compression level 4096x2160@60Hz (4:4:4) 24bpp at standard compression level           Compliance         HDR 10 as specified in HDMI 2.0, HDCP 2.2           Extension Line         We recommend that you use Kramer shielded cables to achieve optimum extension ranges.           Max Range – High Compression         60m (200ft) at 4k@60Hz (4:4:4) or full HD (1080p @60Hz 36bpp)           Max Range – Standard Compression:         40m (130ft) at 4k@30Hz (4:4:4) or full HD (1080p @60Hz 36bpp)           Signal Compression:         Standard low-level compression is applied to line-transmitted signals above 1080p resolution, by default. The user can, optionally, apply high-level compression to all line-transmitted signals           Compliance:         DGKat 2.0           User Interface         Indicators         IN, OUT and ON LEDs           Controls         DIP-switches           Power         50urce         12V DC, 2A           Consumption         600mA           Environmental Conditions         Operating         0° to +40°C (32° to 104°F)           Temperature         5torage Temperature         40° to +70°C (-40° to 158°F)           Humidity         10% to 90%, RHL non-condensing	PT-872xr		
Video	Inputs	1 DGKAT 2.0	On a female RJ-45 connector
General         Max. Data Rate         Up to 18Gbps (6Gbps per graphic channel)           Max. Resolution         3840x2160@60Hz (4:4:4) 24bpp at high compression level 4096x2160@60Hz (4:4:4) 24bpp at standard compression level 4096x2160@60Hz (4:4:4) 24bpp at standard compression level 4096x2160@60Hz (4:4:4) 24bpp at standard compression level 4096x2160@60Hz (4:4:4) 40cm 400 40cm 40cm	· ·	1 HDMI	On a female HDMI connector
Video         Max. Data Rate         Up to 18Gbps (6Gbps per graphic channel)           Max. Resolution         3840x2160@60Hz (4:4:4) 24bpp at high compression level 4096x2160@60Hz (4:4:4) 24bpp at standard compression level           Compliance         HDR 10 as specified in HDMI 2.0, HDCP 2.2           Extension Line         We recommend that you use Kramer shielded cables to achieve optimum extension ranges.           Max Range – High Compression (1080p @60Hz 36bpp)         60m (200ft) at 4K@60Hz (4:4:4) or full HD (1080p @60Hz 36bpp)           Max Range – Standard (200ft) at 4K@30Hz (4:4:4) or full HD (1080p @60Hz 36bpp)         70m (230ft) at 4K@30Hz (4:4:4) or full HD (1080p @60Hz 36bpp)           Signal Compression:         Standard low-level compression is applied to line-transmitted signals above 1080p resolution, by default. The user can, optionally, apply high-level compression to all line-transmitted signals           Compliance:         DCKat 2.0           User Interface         Indicators           Interface         IN, OUT and ON LEDs           Controls         DIP-switches           Power         Source         12V DC, 2A           Conditions         Consumption         600mA           Environmental Conditions         600mA         0° to +40°C (32° to 104°F)           Erectory         Environmental Representate         Au° to +70°C (-40° to 158°F)           Humidity         10% to 90%, RHL non-condensin			
Max. Resolution   3840x2160@60Hz (4:4:4) 24bpp at high compression level   4096x2160@60Hz (4:4:4) 24bpp at standard compression   400 co		Max. Data Rate	Up to 18Gbps (6Gbps per graphic channel)
Extension Line  We recommend that you use Kramer shielded cables to achieve optimum extension ranges.  Max Range – High Compression   60m (200ft) at 4K@60Hz (4:4:4) or full HD (1080p @60Hz 36bpp)    Max Range – 40m (130ft) at 4K@30Hz (4:4:4) or full HD (1080p @60Hz 36bpp)    Max Range – 40m (130ft) at 4K@30Hz (4:4:4) or full HD (1080p @60Hz 36bpp)    Signal Compression:   Standard   70m (230ft) at 4K@30Hz (4:4:4) or full HD (1080p @60Hz 36bpp)    Signal Compression:   Standard low-level compression is applied to line-transmitted signals above 1080p resolution, by default. The user can, optionally, apply high-level compression to all line-transmitted signals    Compliance: DGKat 2.0    User Interface   Indicators   IN, OUT and ON LEDs    Controls   DIP-switches    Power   Source   12V DC, 2A    Consumption   600mA    Environmental   Operating   Temperature    Storage Temperature   40° to +40°C (32° to 104°F)    Temperature   Storage Temperature   40° to +70°C (-40° to 158°F)    Humidity   10% to 90%, RHL non-condensing    Regulatory   Safety   CE, UL    Environmental   RoHs, WEEE    Enclosure   Pico TOOLS™    Type   Aluminum    Cooling   Convection Ventilation    General   Product Weight   0.2kg (0.5lbs) approx.    Shipping Dimensions   15.70cm x 12.00cm x 8.70cm (6.18" x 4.72" x 3.43") W, D, H    Shipping Weight   0.6kg (1.4lbs) approx.    Accessories   Included   1 Power adapter (Note: When purchasing PT-871/2xr-KIT, only one power adapter is supplied for both units.)		Max. Resolution	3840x2160@60Hz (4:4:4) 24bpp at high compression level 4096x2160@60Hz (4:4:4) 24bpp at standard
Extension Line optimum extension ranges.  Max Range – High Compression 70m (230ft) at 4K@60Hz (4:4:4) or full HD (1080p @60Hz 36bpp)  Max Range – Standard Compression (1080p @60Hz 36bpp)  Max Range – Standard Compression (1080p @60Hz 36bpp)  Signal Compression: Standard Industry of Members of Signal Compression: Standard Industry of Members of Member			<del>                                     </del>
Optimum extension ranges.		· ·	
High Compression	Extension Line		
Standard   Compression   Compression   Signal Compression:   Signal Compression:   Standard low-level compression is applied to line-transmitted signals above 1080p resolution, by default. The user can, optionally, apply high-level compression to all line-transmitted signals   Compliance: DGKat 2.0   DGKat 2.0			70m (230ft) at 4K@30Hz (4:4:4) or full HD
line-transmitted signals above 1080p resolution, by default. The user can, optionally, apply high-level compression to all line-transmitted signals		Standard	70m (230ft) at 4K@30Hz (4:4:4) or full HD (1080p @60Hz 36bpp)
User Interface			line-transmitted signals above 1080p resolution, by default. The user can, optionally, apply high-level compression to all line-transmitted signals
Controls   DIP-switches		<del>'</del>	
Power         Source Consumption         12V DC, 2A           Environmental Conditions         Operating Temperature         0° to +40°C (32° to 104°F)           Regulatory Compliance         Safety         CE, UL           Enclosure         Size         Pico TOOLS™           Type         Aluminum           Cooling         Convection Ventilation           General         Product Dimensions         6.22cm x 5.18cm x 2.44cm (2.45" x 2.04" x 0.96" ) W, D, H           Product Weight         0.2kg (0.5lbs) approx.           Shipping Dimensions         15.70cm x 12.00cm x 8.70cm (6.18" x 4.72" x 3.43" ) W, D, H           Shipping Weight         0.6kg (1.4lbs) approx.           Accessories         Included         1 Power adapter (Note: When purchasing PT-871/2xr-KIT, only one power adapter is supplied for both units.)	User Interface		
Consumption 600mA  Environmental Conditions  Environmental Conditions  Operating Temperature Storage Temperature -40° to +70°C (-40° to 158°F) Humidity 10% to 90%, RHL non-condensing  Regulatory Compliance Enclosure  Size Pico TOOLS™ Type Aluminum Cooling Convection Ventilation  General  Product Dimensions 6.22cm x 5.18cm x 2.44cm (2.45" x 2.04" x 0.96" ) W, D, H  Product Weight 0.2kg (0.5lbs) approx.  Shipping Dimensions 15.70cm x 12.00cm x 8.70cm (6.18" x 4.72" x 3.43") W, D, H  Shipping Weight 0.6kg (1.4lbs) approx.  Accessories  Included 1 Power adapter (Note: When purchasing PT-871/2xr-KIT, only one power adapter is supplied for both units.)		+	
Environmental Conditions  Temperature  Storage Temperature  -40° to +70°C (-40° to 158°F)  Humidity  10% to 90%, RHL non-condensing  Regulatory Compliance  Environmental RoHs, WEEE  Enclosure  Size Pico TOOLS™  Type Aluminum Cooling Convection Ventilation  General  Product Dimensions 6.22cm x 5.18cm x 2.44cm (2.45" x 2.04" x 0.96") ) W, D, H  Product Weight Shipping Dimensions 15.70cm x 12.00cm x 8.70cm (6.18" x 4.72" x 3.43") W, D, H  Shipping Weight  Accessories  Included  1 Power adapter (Note: When purchasing PT-871/2xr-KIT, only one power adapter is supplied for both units.)	Power		
Temperature         Storage Temperature       -40° to +70°C (-40° to 158°F)         Humidity       10% to 90%, RHL non-condensing         Regulatory       CE, UL         Compliance       Environmental       RoHs, WEEE         Enclosure       Size       Pico TOOLS™         Type       Aluminum         Cooling       Convection Ventilation         General       Product Dimensions       6.22cm x 5.18cm x 2.44cm (2.45" x 2.04" x 0.96" ) W, D, H         Product Weight       0.2kg (0.5lbs) approx.         Shipping Dimensions       15.70cm x 12.00cm x 8.70cm (6.18" x 4.72" x 3.43" ) W, D, H         Shipping Weight       0.6kg (1.4lbs) approx.         Accessories       Included       1 Power adapter (Note: When purchasing PT-871/2xr-KIT, only one power adapter is supplied for both units.)		· · · · · · · · · · · · · · · · · · ·	
Humidity 10% to 90%, RHL non-condensing  Regulatory Compliance			0° to +40°C (32° to 104°F)
Regulatory Compliance       Safety       CE, UL         Enclosure       Size       Pico TOOLS™         Type       Aluminum         Cooling       Convection Ventilation         General       Product Dimensions       6.22cm x 5.18cm x 2.44cm (2.45" x 2.04" x 0.96" ) W, D, H         Product Weight       0.2kg (0.5lbs) approx.         Shipping Dimensions       15.70cm x 12.00cm x 8.70cm (6.18" x 4.72" x 3.43" ) W, D, H         Shipping Weight       0.6kg (1.4lbs) approx.         Accessories       Included       1 Power adapter (Note: When purchasing PT-871/2xr-KIT, only one power adapter is supplied for both units.)		Storage Temperature	-40° to +70°C (-40° to 158°F)
Compliance       Environmental       RoHs, WEEE         Enclosure       Size       Pico TOOLS™         Type       Aluminum         Cooling       Convection Ventilation         General       Product Dimensions       6.22cm x 5.18cm x 2.44cm (2.45" x 2.04" x 0.96" ) W, D, H         Product Weight       0.2kg (0.5lbs) approx.         Shipping Dimensions       15.70cm x 12.00cm x 8.70cm (6.18" x 4.72" x 3.43" ) W, D, H         Shipping Weight       0.6kg (1.4lbs) approx.         Accessories       Included       1 Power adapter (Note: When purchasing PT-871/2xr-KIT, only one power adapter is supplied for both units.)		Humidity	10% to 90%, RHL non-condensing
Enclosure  Size  Type  Aluminum  Cooling  Convection Ventilation  General  Product Dimensions  6.22cm x 5.18cm x 2.44cm (2.45" x 2.04" x 0.96" ) W, D, H  Product Weight  O.2kg (0.5lbs) approx.  Shipping Dimensions  15.70cm x 12.00cm x 8.70cm (6.18" x 4.72" x 3.43") W, D, H  Shipping Weight  O.6kg (1.4lbs) approx.  Included  1 Power adapter (Note: When purchasing PT-871/2xr-KIT, only one power adapter is supplied for both units.)		Safety	CE, UL
Type Aluminum  Cooling Convection Ventilation  General Product Dimensions 6.22cm x 5.18cm x 2.44cm (2.45" x 2.04" x 0.96" ) W, D, H  Product Weight 0.2kg (0.5lbs) approx.  Shipping Dimensions 15.70cm x 12.00cm x 8.70cm (6.18" x 4.72" x 3.43") W, D, H  Shipping Weight 0.6kg (1.4lbs) approx.  Accessories Included 1 Power adapter (Note: When purchasing PT-871/2xr-KIT, only one power adapter is supplied for both units.)	Compliance	Environmental	RoHs, WEEE
Cooling Convection Ventilation  General Product Dimensions 6.22cm x 5.18cm x 2.44cm (2.45" x 2.04" x 0.96" ) W, D, H  Product Weight 0.2kg (0.5lbs) approx.  Shipping Dimensions 15.70cm x 12.00cm x 8.70cm (6.18" x 4.72" x 3.43" ) W, D, H  Shipping Weight 0.6kg (1.4lbs) approx.  Accessories Included 1 Power adapter (Note: When purchasing PT-871/2xr-KIT, only one power adapter is supplied for both units.)	Enclosure	Size	Pico TOOLS™
General Product Dimensions 6.22cm x 5.18cm x 2.44cm (2.45" x 2.04" x 0.96" ) W, D, H Product Weight 0.2kg (0.5lbs) approx. Shipping Dimensions 15.70cm x 12.00cm x 8.70cm (6.18" x 4.72" x 3.43") W, D, H Shipping Weight 0.6kg (1.4lbs) approx.  Accessories Included 1 Power adapter (Note: When purchasing PT-871/2xr-KIT, only one power adapter is supplied for both units.)		Туре	Aluminum
) W, D, H  Product Weight 0.2kg (0.5lbs) approx.  Shipping Dimensions 15.70cm x 12.00cm x 8.70cm (6.18" x 4.72" x 3.43") W, D, H  Shipping Weight 0.6kg (1.4lbs) approx.  Accessories Included 1 Power adapter (Note: When purchasing PT-871/2xr-KIT, only one power adapter is supplied for both units.)		Cooling	Convection Ventilation
Shipping Dimensions  15.70cm x 12.00cm x 8.70cm (6.18" x 4.72" x 3.43") W, D, H  Shipping Weight  0.6kg (1.4lbs) approx.  1 Power adapter (Note: When purchasing PT-871/2xr-KIT, only one power adapter is supplied for both units.)		Product Dimensions	
3.43" ) W, D, H  Shipping Weight 0.6kg (1.4lbs) approx.  Accessories Included 1 Power adapter (Note: When purchasing PT-871/2xr-KIT, only one power adapter is supplied for both units.)			
Accessories Included 1 Power adapter (Note: When purchasing PT-871/2xr-KIT, only one power adapter is supplied for both units.)		Shipping Dimensions	
871/2xr-KIT, only one power adapter is supplied for both units.)			
	Accessories	Included	871/2xr-KIT, only one power adapter is supplied

# **WP-871xr, WP-872xr**

WP-871xr		
Inputs	1 HDMI	On a female HDMI connector
Outputs	1 DGKAT 2.0	On a female RJ-45 connector
WP-872xr		
Inputs	1 DGKAT 2.0	On a female RJ-45 connector
Outputs	1 HDMI	On a female HDMI connector
General	TTIDIVII	Off a female Fibini dofficetor
Video	Max. Data Rate	Up to 18Gbps (6Gbps per graphic channel)
7.000	Max. Resolution	3840x2160@60Hz (4:4:4) 24bpp
	Compliance	HDR 10 as specified in HDMI 2.0, HDCP 2.2
Extension Line	· · · · · · · · · · · · · · · · · · ·	ou use Kramer shielded cables to achieve
Extension Eme	optimum extension rar	
	Max Range –	60m (200ft) at 4K@60Hz (4:4:4)
	High Compression	70m (230ft) at 4K@30Hz (4:4:4) or full HD
		(1080p @60Hz 36bpp)
	Signal Compression:	High-level compression is applied to line-
		transmitted signals above 1080p resolution, by
	Compliance:	default DGKat 2.0
User Interface	Indicators	Power/connection
Power		
Power	Source	12V DC, 2A 600mA
Cardina mana mtal	Consumption	
Environmental Conditions	Operating Temperature	0° to +40°C (32° to 104°F)
Conditions	Storage Temperature	-40° to +70°C (-40° to 158°F)
	Humidity	10% to 90%, RHL non-condensing
Regulatory	Safety	CE, UL
Compliance	Environmental	RoHs, WEEE
Enclosure	Size	1 gang
Liiciosare	Туре	Aluminum
	Cooling	Convection Ventilation
General	Product Dimensions	EU: 8.00cm x 3.10cm x 8.00cm (3.15" x 1.22" x
General	Floudet Dimensions	3.15") W, D, H
		UK: 8.60cm x 3.10cm x 8.60cm (3.39" x 1.22" x
		3.39") W, D, H
		US: 6.98cm x 3.10cm x 11.43cm (2.75" x 1.22" x
	Product Weight	4.50") W, D, H 0.1kg (0.1lbs) approx.
	Shipping Dimensions	EU: 23.20cm x 13.60cm x 10.00cm (9.13" x 5.35"
	Cppg Ze.ie.ie.	x 3.94" ) W, D, H
	Shipping Weight	0.6kg (1.3lbs) approx.
Accessories	Included	1 Power adapter, 1 power cord
		For the US version: 2 US Frame sets and
		faceplates (in black and in white)
		For the European version: 1 EU white frame, 1 UK white frame, 1 EU/UK white faceplate
Specifications a	re subject to change wit	-
Specifications are subject to change without notice at <a href="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.
- 2. All Kramer fiber optic cables, adapter-size fiber optic extenders, active cables, cable retractors, all Kramer speakers and Kramer touch panels are 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.
- 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 reinstallation 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 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 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.

# KRAMER

















## 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 Web site where updates to this user manual may be found.

We welcome your questions, comments, and feedback.

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