

# KD-XWPS

Single Gang HDMI USB-C over 164ft / 50m CAT6/6A Auto Switching Wall Plate Switcher Transmitter with Receiver Kit. 4K UHD, 18G, Power over CAT.



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The Experts in Digital Video Technology and Solutions™

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Please visit [www.keydigital.com](http://www.keydigital.com) for the latest product documentation, firmware, control drivers and software downloads. Product features and specifications are subject to change without notice.

**Always follow the instructions provided in this Operating Manual.**

## About KD-XWPS

Key Digital® KD-XWPS is a single-gang wall-plate switcher transmitter + receiver kit with one HDMI and one USB-C input ideal for professional AV systems installations in conference rooms, huddle spaces, classrooms, and more. KD-XWPS supports 4K/UHD resolution with bandwidth up to 18Gbps and HDCP2.2 compliancy and extends video resolutions up to 4096x2160 at 60hz with 4:4:4 chroma sub-sampling over a single CAT6/6A cable up to 164ft (50m). In addition to HDMI video and audio signals, KD-XWPS features an IR sensor on the faceplate to control remotely located equipment. KD-XWPS features EDID handshake control and hot plug detection for overcoming common systems integration obstacles. The wall-plate unit fits in a standard US single-gang box and is powered by the Rx unit for convenient installation.

### Key Features

- **Presentation Switching:** 1 HDMI and 1 USB-C selected by push button or auto switching
- **Auto-Switching:** Automatic selection of newly detected source and switching from newly disconnected source when enabled
- **Complete Kit:** Includes Tx (model KD-EXWPSTx-2) and Rx (model KD-X444SPRx) units.
- **Ultra HD/4K:** Supports up to 4096x2160 or 3840x2160 24/25/30/60hz at 4:4:4 (signals up to 18Gbps bandwidth)
- **Visually Lossless Compression:** 18G enabling technology applied to all video formats exceeding 10.2Gbps to accommodate CAT6/6A transmission channel
- **Power over CAT:** Wall plate Tx unit powered by Rx
- **HDCP Licensing:** Fully licensed and compatible with HDCP 2.2
- **HDR (High Dynamic Range):** More life-like images through a greater range of luminance levels
- **Signal Extension:** For resolution and cable quality
  - 4K/UHD (up to 18G) & 1080p: Up to 50m / 164ft
- **Deep Color Support:** Up to 4K/UHD 30Hz 4:4:4/12 bits or 60Hz 4:2:2/12 bit
- **Full Buffer System™:** Manages TMDS re-clocking / signal re-generation, HDCP authentication to source & display, EDID Control handshake, and Hot Plug Detection Voltage
- **EDID Management:** Internal library with 15 internal EDID handshakes including 4K with HDR in addition to native EDID data copied from the Rx display/device
- **IR Sensor:** Wall-plate collects line-of-sight IR from remote(s) without external IR wiring
- **Surround Audio Support:** Dolby®, DTS™ (formats up to 5.1 / 6.1)

## Accessories

- Qty 1: Brushed aluminum decora plate
- Qty 2: Decora mounting screws with flat head
- Qty 2: Gang-box mounting screws
- Qty 1: 12V/2A (24W) Power supply with screw-in connector. Desktop type. Model KD-PS12V2ASC.
- Qty 1: 5ft Micro USB to USB A data cable (USB 2.0)
- Qty 1: IR Emitter with 3.5mm mono end
- Qty 2: L mounting bracket for Rx unit
- Qty 2: Velcro for Rx unit

## Quick Setup Guide

**Begin with the Tx and Rx units and all input / output devices turned off with power cables removed.**

### Connect

1. **Connect video sources** into the HDMI and USB-C input ports of KD-XWPS TX
  - a. For USB-C, the cable must be USB-C 3.2 Gen 2 to support AV at the needed bandwidth
2. **Connect video displays/projectors** to the HDMI output port of Rx
3. **If collecting IR control signals** at the wall plate, connect IR emitter to Rx's IR Out port and secure the emitter head to the IR sensor of the device you wish to control.
  - a. **Connect CAT6 cable** from KD-XWPS TX's RJ45 output port to the RX units RJ45 input. Use 568-B termination. Do not connect the Tx or Rx units to third-party devices, including HDBaseT. Damage will occur and warranty will be voided.
4. **Connect power.** Screw-in power supply to the Rx unit, and then connect power to outlet.

### Control

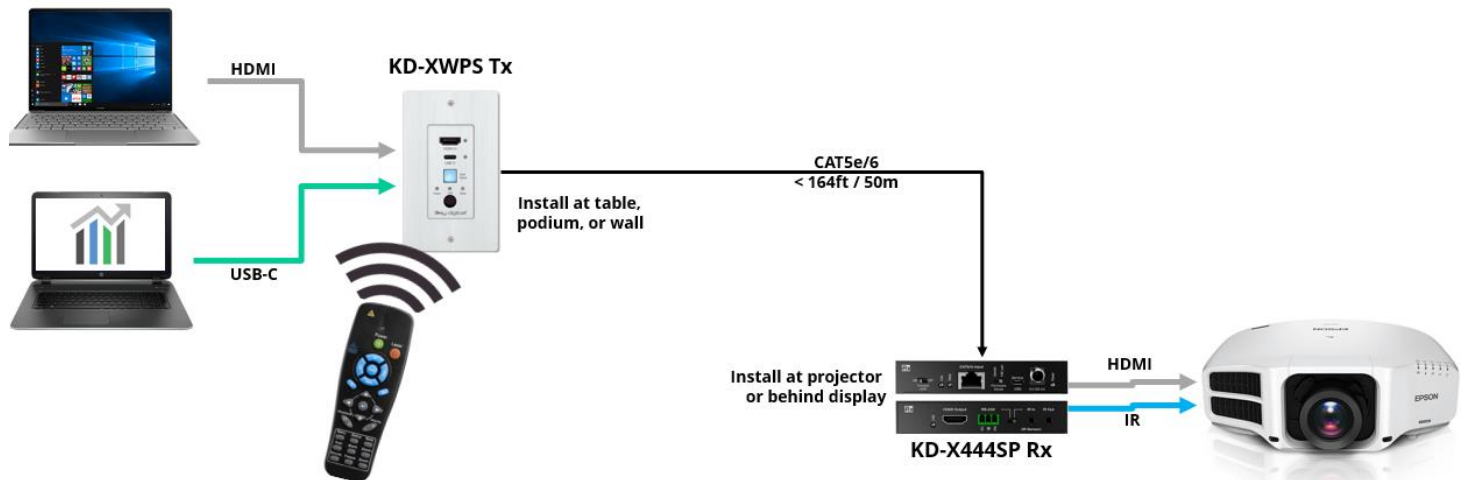
- Use the Input Select button to toggle between the HDMI or USB-C source inputs or to activate Auto Switch mode
- Press and hold for 3 seconds to activate Auto Switching. Solid illumination of the backlighting indicates mode has been set



Test for proper operation of the unit and cables in your system before permanently securing the unit for final installation. Ensure that you leave enough ventilation space to provide sufficient airflow and cooling

# Application Example

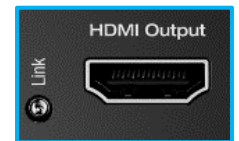
## Presentation Switching and extension with IR control to projector / display



## Connections and Adjustments

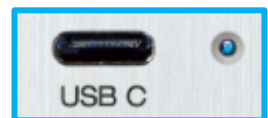
**HDMI Input and Output:** Using an HDMI cable, connect your HDMI source.

- Supports up to UHD/4K @ 50/60 fps [4:4:4], 18Gbps
- Supports HDR
- Compliant with HDCP 2.2 and previous
- Supports surround audio formats including Dolby®, DTS™ (up to 5.1 / 6.1)
- Does not support CEC or ARC



**USB C:** Using a USB-C cable, connect your source. For Display Port sources, use adapter cables

- Supports up to UHD/4K @ 50/60 fps [4:4:4], 18Gbps
- Supports HDR
- Cable **must be USB-C 3.2 Gen 2** to support AV at the needed bandwidth
- Utilizes Display Port over USB-C alt mode
- Supports Display Port version 1.3 and previous
- Compliant with HDCP 2.2 and previous
- Does not support CEC or ARC



**CAT6/6A Output / Input:** Connect a network cable to the Rx unit's CAT6/6A Input port using CAT6/6A UTP or STP in 568-B termination.

- UHD/4K and 1080p: Up to 164ft (50m)
- Supports Dolby®, DTS™ (5.1 / 6.1 formats max)
- Receives 12V Power over CAT from Rx
- 4K/UHD (18G) & 1080p extension up to 164ft / 50m
- Supports Dolby®, DTS (5.1 formats max)
- Connect to KD-X444SP only. Damage will occur if connected to non-KD-X444SP products and warranty will be void.
- **Not compatible with HDBaseT or third-party Rx. Connecting to incompatible Rx may cause damage and result in void of warranty.**



**Supported standard 4K video formats:**

|   | Resolution                     | Bandwidth  |
|---|--------------------------------|------------|
| 1 | 4K@24/25/30 [4:4:4] 8bit       | < 10.2Gbps |
| 2 | 4K@24/25/30 [4:2:2] 8/10/12bit | < 10.2Gbps |
| 3 | 4K@50/60 [4:2:0] 8bit          | < 10.2Gbps |
| 4 | 4K@24/25/30 [4:4:4] 10/12bit   | < 18Gbps   |
| 5 | 4K@50/60 [4:2:2] 8/10/12bit    | < 18Gbps   |
| 6 | 4K@50/60 [4:2:0] 10/12bit      | < 18Gbps   |
| 7 | 4K@50/60 [4:4:4] 8bit          | < 18Gbps   |

**Input Select Button:** Used to toggle between HDMI and USB C source input or to activate Auto Switch mode

- Press and hold for 3 seconds to activate Auto switching. Solid illuminator of the back lighting indicates mode has been set
- Manually switching with the Input Select button will override the Auto Switch setting.

**IR Sensor:** Collects line of sight infrared from remotes without external connecting block

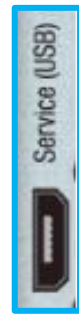
- Signal is output on Rx unit's IR Out port
- KD-XWPS Tx is **NOT** controllable via IR
- Receives signals from a 90° angle at up to 30ft away.
- Maximum IR burst frequency acceptance is 55kHz





## Service USB Port

- Micro USB port
- Used for firmware updates (consult with Key Digital tech support before updating firmware)



## EDID Management Rotary

Use the EDID rotary if you wish for your source to output a different video resolution and audio format

- The default EDID handshake setting is “A” (4Kx2K@60, 18G, HDR, 2ch audio).
- If setting 0 is selected, the Rx unit collects the EDID handshake from the connected display and a handshake is provided to the source that is similar to the EDID file of the display, but within KD-X444SP’s capabilities.
- Although it is not necessary, power cycling the Tx unit and HDMI source may help the detection of the newly selected handshake.

| Position | EDID Handshake Description                             |
|----------|--|
| 0        | Auto EDID from Rx                                      |
| 1        | 1920x1080p, 2ch Audio                                  |
| 2        | 1920x1080p, Dolby/DTS 5.1                              |
| 3        | 1920x1080p, Dolby/DTS 5.1, Dolby Atmos 5.1.2           |
| 4        | 1920x1200p, 2ch Audio                                  |
| 5        | 1920x1200p, Dolby/DTS 5.1                              |
| 6        | 1920x1200p, Dolby/DTS 5.1, Dolby Atmos 5.1.2           |
| 7        | 4Kx2K@60, 10.2G, HDR, 2ch Audio                        |
| 8        | 4Kx2K@60, 10.2G, HDR, Dolby/DTS 5.1                    |
| 9        | 4Kx2K@60, 10.2G, HDR, Dolby/DTS 5.1, Dolby Atmos 5.1.2 |
| A        | 4Kx2K@60, 18G, HDR, 2ch Audio                          |
| B        | 4Kx2K@60, 18G, HDR, Dolby/DTS 5.1                      |
| C        | 4Kx2K@60, 18G, HDR, Dolby/DTS 5.1, Dolby Atmos 5.1.2   |
| D        | 1280x720p@60 DVI (No Audio)                            |
| E        | 1920x1080p@60 DVI (No Audio)                           |
| F        | 1920x1080i, 2ch Audio                                  |



## Forced HPD Switch (Rx only)

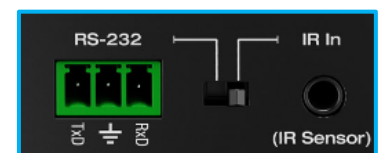
Troubleshooting tool to help overcome installation obstacles.

- In cases of many connectivity layers or use with non-standard devices, hot plug detection (HPD) voltage may be lost or drop below detectable levels and lead to a “no source connected” error message and/or no image on the connected display.
- If set to ON, Hot Plug Detection (HPD) voltage is fixed at the HDMI connection of the Rx unit. The connected display will be fed a constant voltage to inform the device that a partner is always connected and active.
- If set to OFF, Hot Plug Detection (HPD) voltage is passed thru from connected source to the display

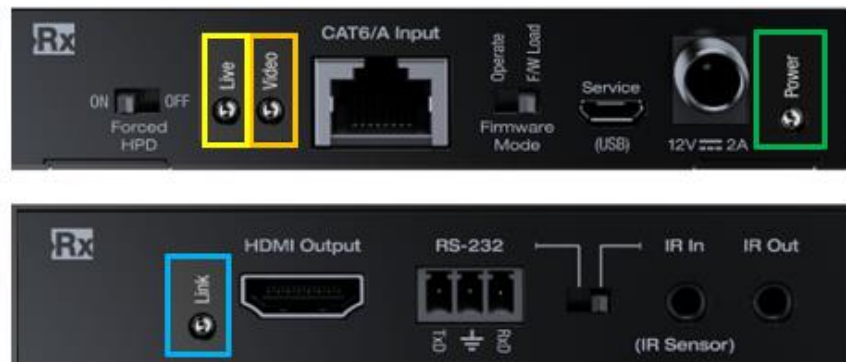
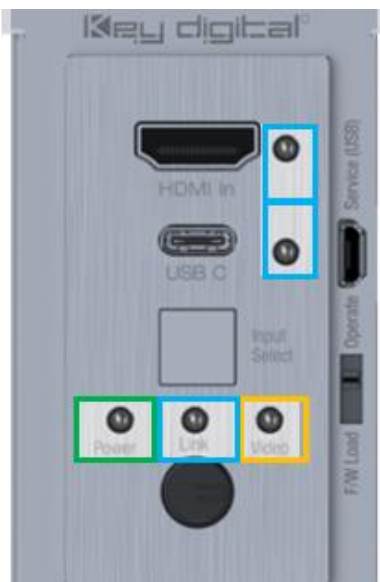


## RS-232 and IR In ports (Rx only)

The ports do not have any connection to the Tx unit and therefore have no functionality in the KD-XWPS kit.



## LED Indicators



### Power:

- Color: **Green**
- Tx Unit: Solid illumination during power ON state, as provided by healthy connection with Rx and healthy Power over CAT extension
- Rx Unit: Solid illumination during power ON state, as provided by power supply.
- Steady blink if unit has a power short



**Link:**

- Color: **Blue**
- Tx Unit: Solid illumination after bootup from healthy CAT6/6A link between Tx and Rx unit.
- Rx unit: Solid illumination from active incoming signal from the connected TX and active Hot Plug Detection voltage from connected display/output device.

**Video:**

- Color: **Orange**
- Solid illumination with active TMDS (video + audio) signal extension between Tx and Rx
- Off with no TMDS (video + audio) signals

**Live (Rx only)**

- Color: **Yellow**
- Steady blink from healthy unit CPU state

**HDMI & USB-C Selection Indicators**

- Color: **Blue**
- Solid illumination indicates the selected port (HDMI or USB-C) and active incoming signal
- Steady blink if there is no active incoming signal

## Rack Mounting

In addition to mounting with the supplied L-Brackets, multiple Rx units may be mounted in KD-SMS16 using the side mounting screws. KD-SMS16 is a mounting shelf for all Key Digital units with side mounting screw spacing of 2.912", 2.582", or 2.252".

**Do NOT exceed 12 units as doing so will result in unit damage by overheating.**



# Specifications

## Technical

- AV Inputs: 1x HDMI, 1x USB C
- AV Outputs: 1x CAT6/6A RJ45
- DDC Signal (Data): Input DDC Signal: 5 Volts p-p (TTL)
- HDMI Video/Audio Signal: Input Video Signal: 1.2 Volts p-p
- USB C Signal: Input Video Signal: 1.2 Volts p-p
- RJ45 Connectors: Shielded Link Connector, CAT6/6A
- RS-232 Connector: 3-pin phoenix terminal
- IR: 1x IR Sensor at Tx unit, 1x 3.5mm mono output at Rx unit

## General

- Regulation: CE, RoHS, WEEE, EAC
- Wall plate: U.S. 1-gang wall plate in aluminum enclosure
- Decora plate: Brushed aluminum
- Product Dimensions (Tx): 1.92 x 4.13 x 1.42" (49 x 105 x 36.2 mm)
- Product Weight: Weight (Tx): 0.6 lbs (0.27 kg)
- Product Dimensions (Rx): 4.3" x 4.12" x 0.82" (109.2 x 104.6 x 20.8mm)
- Product Weight: Weight (Rx): 0.595 lbs (0.27 KG)
- Packaging Dimensions: 10.23 x 5.67 x 3.15" (260 x 144 x 80mm)
- Packaging Weight: 1.98lbs 0.9 kg

## Warranty Information

All Key Digital® products are built to high manufacturing standards and should provide years of trouble-free operation. They are backed by a Key Digital Limited 3 Year Product Warranty Policy.

<http://www.keydigital.com/warranty.htm>

## Product Warnings & Safety Instructions



### Important Product Warnings:

1. Connect all cables before providing power to the unit.
2. Test for proper operation before securing unit behind walls or in hard to access spaces.
3. If installing the unit into wall or mounting bracket into sheet-rock, provide proper screw support with bolts or sheet-rock anchors.



## Safety Instructions:

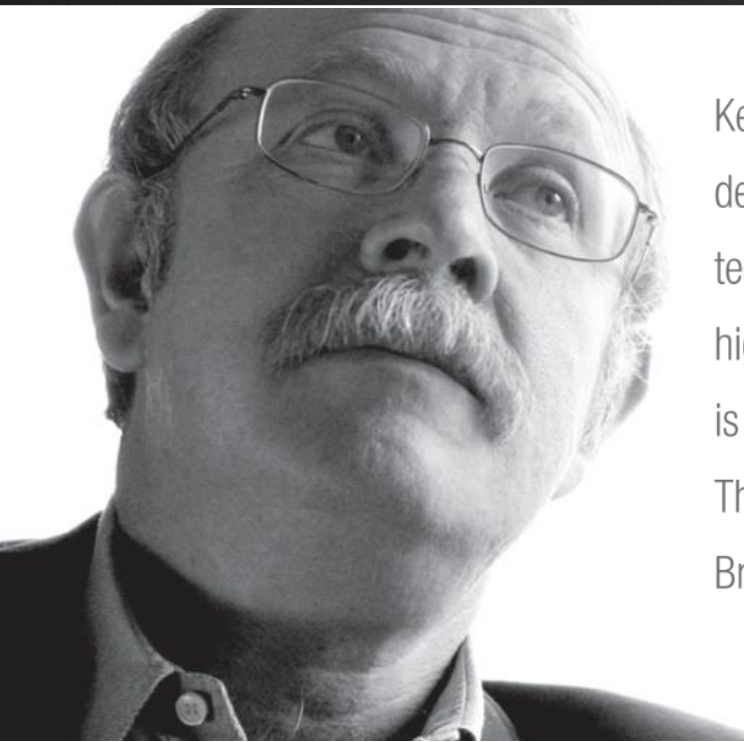
**Please be sure to follow these instructions for safe operation of your unit.**

1. Read and follow all instructions.
2. Heed all warnings.
3. Do not use this device near water.
4. Clean only with dry cloth.
5. Install in accordance with the manufacturer's instructions.
6. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
7. Only use attachments/accessories specified by the manufacturer.
8. Refer all servicing to qualified service personnel. Servicing is required when the device has been damaged in any way including:
  - Damage to the power supply or power plug
  - Exposure to rain or moisture



## Power Supply Use:

**You MUST use the Power Supply provided with your unit or you VOID the Key Digital® Warranty and risk damage to your unit and associated equipment.**



Key Digital<sup>®</sup>, led by digital video pioneer Mike Tsinberg, develops and manufactures high quality, cutting-edge technology solutions for virtually all applications where high-end video and control are important. Key Digital<sup>®</sup> is at the forefront of the video industry for Home Theater Retailers, Custom Installers, System Integrators, Broadcasters, Manufacturers, and Consumers.

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