4K 60Hz 4x4 Professional HDMI Matrix (3-in-1: Switcher + Video Wall + Multi-Viewer)

Model: CH4440K

Ultra HD 4K@60Hz Transmission | 4x4 HDMI I/O | Zero-Second Seamless Switching | Multi-View & Video Wall | CEC Control

一、Product Overview

CH4440K is a professional 3-in-1 HDMI signal processor integrating **matrix switcher**, **video wall splicer**, and **multi-viewer** functions. Designed for 4K ultra-high-definition signal management, it enables stable signal distribution between 4 HDMI input sources (e.g., PCs, 4K players, Apple TV, DVD players) and 4 HDMI display devices (e.g., monitors, projectors, TVs).

Compliant with HDMI 2.0 and HDCP 2.2 standards (backward compatible with DVI 1.0 and HDCP 1.4), it supports 18Gbps video bandwidth, realizing lossless transmission of 4K@60Hz 4:4:4 (8/10/12-bit color depth) audio and video signals. Equipped with zero-second seamless switching, flexible video wall stitching, and multi-view display, it is ideal for scenarios such as conference rooms, command centers, commercial exhibition halls, and high-end AV systems, ensuring smooth and reliable audio-visual experiences.

二、Key Feature Highlights

1. **4K Ultra HD HDMI Transmission**
   - Complies with HDMI 2.0 and HDCP 2.2 standards, supporting maximum resolution of 4K@60Hz 4:4:4 (8/10/12-bit color depth) and 18Gbps video bandwidth.
   - Backward compatible with lower resolutions (1080P@50/60Hz, 480i, 4K2K@24/30Hz) to match mainstream display devices.
   - Each output port supports up to 16 independent resolution settings and manual HDCP version adjustment, adapting to displays with different specifications.
1. **4×4 HDMI I/O & Versatile Audio Output**
   - 4 HDMI input ports (Type A) and 4 HDMI output ports (Type A) for simultaneous multi-source signal distribution.
   - Dual audio output options: 4 balanced analog audio L/R outputs and 4 optical S/PDIF digital audio outputs (supports lossless audio transmission).
   - Compatible with a wide range of audio formats: LPCM, Dolby (Digital/Plus/EX, True HD, Atmos), DTS (EX, 96/24, High Res, HD Master Audio).
1. **Zero-Second Seamless Switching & CEC Control**

- "Zero-interruption" switching: No black screen, flicker, or freeze during source transitions, ensuring uninterrupted presentations and viewing.
- CEC (Consumer Electronics Control) function: Easily control any CEC-enabled HDMI device (e.g., adjust volume, power on/off) via a single controller.

1. **Multi-View Display & Flexible Video Wall**
   - 12 preset multi-view modes: Picture-in-Picture (PIP), 2-split, 3-split, 4-split (multiple variants), 1-large-2-small, 1-large-3-small, etc.
   - 9 video wall stitching modes: Supports 1×2 (1/2 groups), 1×3, 1×4, 2×1 (1/2 groups), 2×2, 3×1, 4×1, and enables simultaneous display of video wall + single screen.
   - Image overlay & scaling: Allows arbitrary screen placement, zooming, and upper/lower image overlay in split-screen mode; manual border gap adjustment solves the problem of excessive screen gaps.
1. **Smart Control & Comprehensive EDID Management**
   - Multiple control methods: Front-panel buttons, IR remote control (10m+ range), RS-232 (industrial-grade stable control), and Web GUI (for remote configuration).
   - Built-in 18 standard EDID functions: Ensures precise matching with different display devices, avoiding signal incompatibility issues.
   - Network support: Compatible with static IP and DHCP for flexible network integration.
1. **Compact & Durable Design**
   - Space-saving 1U rack-mountable design (with included rack accessories) for standard rack installation.
   - Sturdy chassis structure: Enhances stability and durability, suitable for long-term continuous operation in various environments.

三、 Detailed Specification Table

Model Name	CH4440K
Compliance	HDMI 2.0, HDCP 2.2 (backward compatible with HDCP 1.4)
Video Bandwidth	18.0 Gbps
Supported Resolutions	Max. 4K@60Hz 4:4:4; 4K2K@24/30Hz, 1080P@50/60Hz, 480i
Color Space/Depth	Color Space: RGB, YCbCr 4:4:4, YCbCr 4:2:2, YCbCr 4:2:0Color Depth: 8/10/12-bit
Audio Formats	LPCM, Dolby (Digital/Plus/EX, True HD, Atmos), DTS (EX, 96/24,

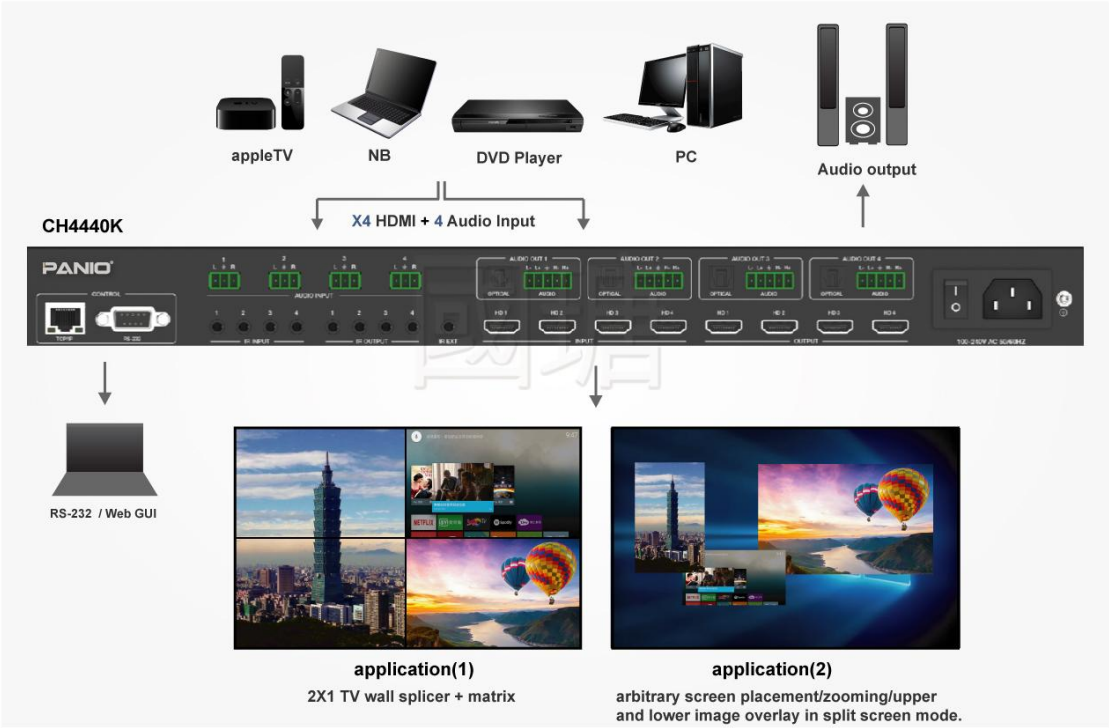
	High Res, HD Master Audio)
HDMI I/O	4×HDMI Input (Type A); 4×HDMI Output (Type A)
Audio Output	4×Balanced Analog Audio (L/R); 4×Optical S/PDIF (Digital)
Additional I/O	4×IR Input; 4×IR Output; 1×RS-232 (for control, with 8×3-pin Phoenix connectors)
Control Methods	Front-panel buttons, IR remote control (10m+ range), RS-232, Web GUI
IR Specifications	N/A (remote control included, no built-in battery)
Chassis Material	Sturdy plastic & metal composite (enhanced stability)
Dimensions	440mm × 203mm × 44mm (L×W×H)
Weight	2.55kg
Power Supply	Input: AC 110–240V 50/60Hz Output: DC 12V/2.5A
Power Consumption	Max. 25W (operating); Standby: Not specified
Operating Temperature	Not specified (recommended 0–40°C for optimal performance)
Storage Temperature	Not specified (recommended -20–60°C)
ESD Protection	Human body model: ±8kV (air-gap discharge); ±4kV (contact discharge)
Cable Length Limit	Max. 5m for HDMI 2.0 cables (use extender for lengths >5m)

四、Important Notes for Use

1. **Cable Requirement**: Use **certified HDMI 2.0 cables** to transmit 4K@60Hz signals. Avoid uncertified switches, splitters, or converters, as they may cause signal distortion, freezing, or loss.
2. **Cable Length & Extender**: If HDMI cable length exceeds 5m, use a compatible HDMI extender to prevent signal attenuation and ensure stable display quality.
3. **Function Compatibility**: **Split-screen mode cannot coexist with video wall splicing or matrix switching**. Disable one function before enabling another to avoid conflicts.

4. **Power Adapter**: Use only the **original certified DC 12V/2.5A power adapter** to maintain stable device performance and prevent damage from voltage mismatches.
5. **Remote Control**: The IR remote control has no built-in battery; please purchase and install appropriate batteries before use.
6. **Rack Installation**: When using the included rack accessories for installation, reserve sufficient space around the device for ventilation (recommended ≥5cm) to avoid overheating.

Diagram



五、Package Contents

Item	Quantity	Remarks
CH4440K Matrix Unit	1 unit	
DC Power Adapter	1 unit	12V/2.5A

IR Remote Control	1 unit	No built-in battery
3-pin Phoenix Connectors (RS-232)	8 pieces	
IR Cables	9 pieces	For extending IR control signals to input/output devices
Rack Accessories	2 pieces	
User Manual	1 piece	

Core Advantages Summary

✓ 4K@60Hz 4:4:4 ultra HD transmission with 18Gbps bandwidth for lossless audio-visual quality

✓ 3-in-1 integration (matrix switcher + video wall + multi-viewer) reduces equipment redundancy

✓ Zero-second seamless switching eliminates presentation interruptions

✓ 12 multi-view modes & 9 video wall modes for diverse display needs (with image scaling/overlay)

✓ Flexible control methods (buttons, IR, RS-232, Web GUI) for easy operation

✓ Compact 1U rack-mountable design (2.55kg) saves installation space

✓ CEC control & 18 EDID functions enhance device compatibility