

# 4K 30Hz 4x1 Professional Seamless HDMI Switcher

Model: CH4120K

Ultra HD 4K@30Hz Transmission | 4x1 HDMI I/O | 0-Second Seamless Switching |  
Resolution Scaling | Auto Scan | Flexible Control

## 一、Product Overview

CH4120K is a professional-grade 4×1 HDMI video signal switcher designed to enable flexible signal switching and distribution between 4 HDMI input sources (e.g., PCs, 4K players, set-top boxes) and 1 HDMI display device (e.g., monitors, projectors, TVs), with independent 3.5mm audio output for external speakers.

Compliant with HDMI standards for 4K@30Hz transmission, it supports a maximum resolution of 3840×2160@30Hz and is backward compatible with lower resolutions (1080P@60Hz, 720P@60Hz, 1366×768@60Hz) to match mainstream AV devices. Equipped with 0-second seamless switching, resolution scaling, and auto-scan functions, it eliminates blackouts during source transitions, optimizes video output quality, and reduces manual operation efforts—making it ideal for scenarios such as small conference rooms, home theaters, retail display zones, and educational classrooms.

## 二、Key Feature Highlights

### 1. 4K Ultra HD HDMI Switching

- Supports maximum input/output resolution of **3840×2160@30Hz** (4K Ultra HD) for clear, detailed visuals.
- Backward compatible with lower resolutions: 1920×1080@60Hz, 1280×720@60Hz, 1366×768@60Hz, ensuring compatibility with legacy display devices.
- Each input port supports independent resolution settings via RS-232 commands for precise source matching.

### 2. Resolution Scaling Function

- Built-in up/down resolution scaling for the HDMI output: Fixed output resolutions 可选 include 1366×768, 720P, 1080P, and 4K@30Hz.
- Optimizes video quality based on display capabilities—e.g., scales 1080P input to 4K output for 4K monitors, or scales 4K input to 1080P for older displays.

### 3. True 0-Second Seamless Switching

- "Blackout-free" signal transitions: No flicker, freeze, or black screen when switching between input sources.
- Ensures smooth presentations, video playback, and real-time content sharing without interruptions.

#### 4. Auto Scan & No-Signal Skip

- Auto-scan function (on/off switchable): Automatically cycles through all input ports every **3 seconds** after power-on, ideal for monitoring multiple sources.
- Intelligent no-signal skip: Skips input ports with no active signal to reduce black screen waiting time and improve efficiency.

#### 5. Audio Separation & ARC Support

- Independent **3.5mm analog audio output** for connecting external speakers, soundbars, or amplifiers—enabling flexible audio setup separate from the display.
- Supports **ARC (Audio Return Channel)** : Transmits audio from the display back to the switcher (e.g., TV audio to external speakers), simplifying cable management.

#### 6. Flexible Control Methods

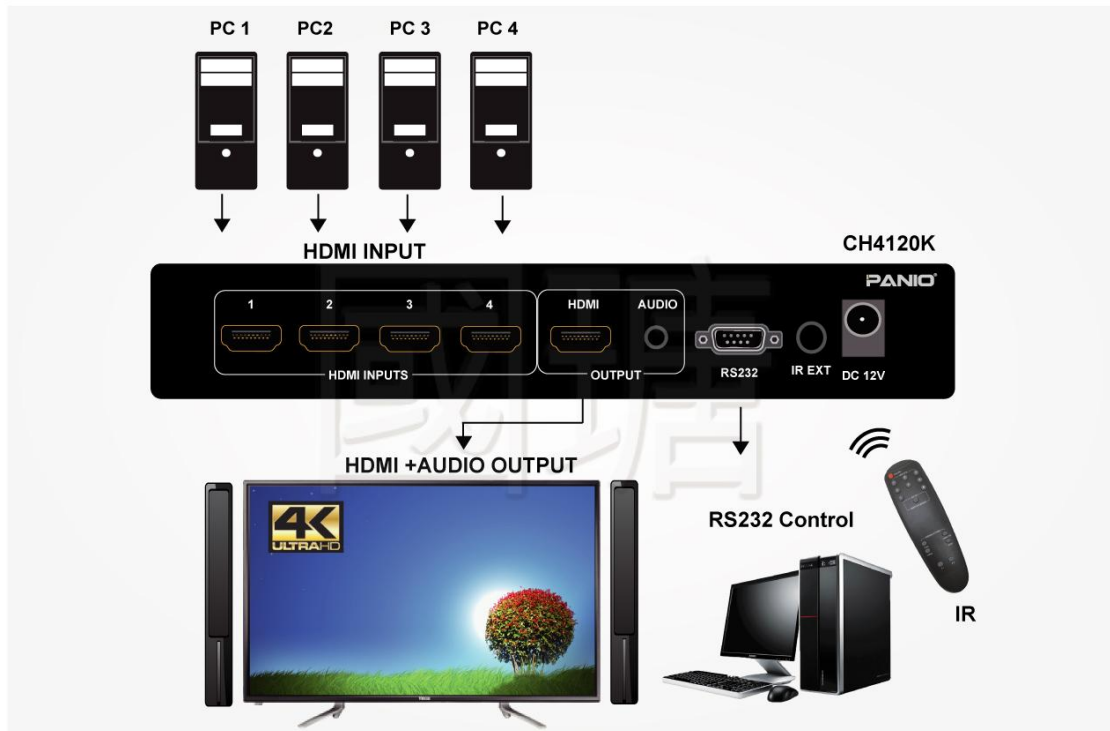
- Multiple control options to suit different scenarios:
  - IR Remote Control: For wireless operation (10m+ effective range, battery not included).
  - RS-232 Port (9-pin): For industrial-grade stable control via serial commands (ideal for integration into centralized control systems).
  - Front Panel Buttons: For direct, on-site operation (source selection, auto-scan on/off).

### 三、 Detailed Specification Table

|                           |                                                                                                      |
|---------------------------|------------------------------------------------------------------------------------------------------|
| Model Name                | CH4120K                                                                                              |
| Compliance                | Compatible with HDMI standards for 4K@30Hz transmission; Supports ARC                                |
| Video Resolution (Input)  | 3840×2160@30Hz, 1920×1080@60Hz, 1280×720@60Hz, 1366×768@60Hz (each port configurable via RS-232)     |
| Video Resolution (Output) | 3840×2160@30Hz, 1920×1080@60Hz, 1280×720@60Hz, 1366×768@60Hz (fixed scaling, set via buttons/remote) |

|                        |                                                                                                                          |
|------------------------|--------------------------------------------------------------------------------------------------------------------------|
| Auto Scan Interval     | 3 seconds (when enabled)                                                                                                 |
| Audio Features         | 3.5mm analog audio output; Supports ARC; Compatible with common audio formats (LPCM, etc.)                               |
| HDMI I/O               | 4×HDMI Input (Type A, 19-pin female); 1×HDMI Output (Type A, 19-pin female)                                              |
| Control Interfaces     | 1×IR Receiver (for remote control); 1×RS-232 (9-pin, D-Sub); Front panel buttons                                         |
| Max HDMI Cable Length  | Single cable: ≤5m (for stable 4K@30Hz transmission); Total input/output cable length: ≤10m                               |
| Power Supply           | Input: Not applicable (powered by external adapter); Output (Adapter): DC 12V / 1A (certified original adapter included) |
| Chassis Material/Color | Plastic + Metal (durable, compact design) / Black                                                                        |
| Dimensions             | 268mm × 107mm × 27mm (L×W×H)                                                                                             |
| Weight                 | 770g                                                                                                                     |
| Operating Temperature  | 0–40°C (32–104°F)                                                                                                        |
| Storage Temperature    | -20–60°C (-4–140°F)                                                                                                      |
| Relative Humidity      | 20–90% RH (non-condensing)                                                                                               |
| ESD Protection         | Not specified (compliant with general consumer electronics standards)                                                    |

## Diagram



## 四、Important Notes for Use

### 1. Cable Requirement & Length Limit

- Use high-quality HDMI cables (compatible with 4K@30Hz) for stable signal transmission.
- Single HDMI cable length should not exceed 5m; total input/output cable length should not exceed 10m. For longer distances, use an HDMI extender (for ≤10m) or optical HDMI cable (for >10m) to avoid signal attenuation.

### 1. Avoid Unauthorized Serial Connection

- Do not serially connect uncertified devices (e.g., unbranded switchers, distributors, converters) to CH4120K, as this may cause signal distortion, compatibility issues, or device damage.

### 1. Use Original Power Adapter

- Only use the included original DC 12V/1A power adapter. Using non-certified adapters may lead to unstable operation, overheating, or permanent device failure.

### 1. Compatibility Pre-Notice

- If integrating CH4120K with other AV equipment (e.g., special monitors, amplifiers), inform the supplier in advance to verify compatibility and avoid post-installation issues.

## 1. Auto Scan Setup Tips

- Before enabling auto-scan, ensure at least one input source is active (with signal). If all inputs are inactive, auto-scan will cycle through black screens.
- Disable auto-scan when a single fixed source is in use to prevent unintended source switching.

## 五、Package Contents

| Item                  | Quantity | Remarks              |
|-----------------------|----------|----------------------|
| CH4120K Switcher Unit | 1 unit   |                      |
| DC Power Adapter      | 1 unit   | 12V/1A               |
| IR Remote Control     | 1 unit   | Battery not included |
| User Manual           | 1 piece  |                      |

## Core Advantages Summary

- ✓ 4K@30Hz Ultra HD resolution with backward compatibility for versatile use with new/legacy devices
- ✓ 4-in-1-out HDMI design + 3.5mm audio separation for flexible AV system configuration
- ✓ 0-second seamless switching to eliminate blackouts during presentations or video playback
- ✓ Auto scan (3s interval) & no-signal skip to reduce manual operation and waiting time
- ✓ Supports ARC and resolution scaling for optimized audio-visual quality
- ✓ Multiple control methods (IR remote, RS-232, buttons) for diverse application scenarios
- ✓ Compact size (268×107×27mm) & light weight (770g) for easy installation in small spaces