

4×1 4K 30Hz Seamless & Scaling HDMI Switcher

User Manual | Version: V1.12

Model: PANIO CH4120K

Safety Reminder & Disposal

Safety Reminder

To protect against electrostatic discharge and ensure safe operation:

- Ground the device properly before powering on.
- Follow all safety instructions below for installation, use, and maintenance.

Disposal Instruction (US)

Do not dispose of this electronic device in household waste.

Contact your local distributor for WEEE recycling information.

Safety Instructions

1. Read all safety guidelines carefully before use.
 2. Retain this manual for future reference.
 3. Disconnect power before cleaning (use only a damp cloth).
 4. Use only the specified DC 12V 1A power adapter.
 5. Observe all warning labels on the device.
 6. Do not pour liquids into or onto the device.
 7. Do not open the device—service only by authorized professionals.
 8. Seek service if: liquids enter the device, moisture exposure occurs, malfunctions persist, or the device is dropped/damaged.
 9. Operating temperature: 0°C–45°C (32°F–113°F).
 10. Allow 2–5 cm ventilation space to prevent overheating.
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1. Product Introduction

The CH4120K is a compact, high-performance 4×1 HDMI switcher with **seamless switching** and **built-in scaling** capabilities. It effortlessly routes 4 HDMI inputs to 1 HDMI output, supporting mixed-resolution sources (up to 4K@30Hz) with zero black screens or signal delays.

Ideal for home theaters, small conference rooms, and digital signage, it offers flexible control via front panel, IR remote, or RS232, plus EDID management and low-power standby mode for energy efficiency.

2. Key Features

- ✓ **Seamless Switching:** No signal interruption between mixed-resolution inputs.
- ✓ **4K@30Hz Ultra HD:** Supports up to 3840×2160@30Hz (HDMI 1.4) + 1080P/720P/1366×768.
- ✓ **Dual Switching Modes:** Auto (switches to last active input) or Manual control.
- ✓ **Flexible Control:** Front panel buttons, IR remote, and RS232 serial control.
- ✓ **EDID Management:** RS232-enabled EDID copy/configuration for perfect device compatibility.
- ✓ **Low Power Consumption:** 2.5W max. + standby mode.
- ✓ **Firmware Upgrade:** USB-A port for easy firmware updates.

3. Technical Specifications

Model	CH4120K
HDMI Standard	HDMI 1.4, HDCP 1.4 compliant
Input Ports	4 × HDMI (Type A)
Output Ports	1 × HDMI (Type A) + 1 × 3.5mm analog audio
Supported Resolutions	3840×2160@30Hz, 1920×1080@60Hz, 1280×720@60Hz, 1366×768@60Hz
Power Supply	DC 12V 1A (included)
Power Consumption	Max. 2.5W
Weight	0.5 kg
Operating Temperature	-10°C to 50°C (-14°F to 122°F)
Storage Temperature	-20°C to 75°C (-4°F to 167°F)
Humidity	10%–90% (non-condensing)

4. Packing List

Item	Quantity
CH4120K 4×1 HDMI Switcher	1 unit
DC 12V 1A Power Adapter	1 piece
IR Remote Control	1 piece (batteries not included)
User Manual (English)	1 copy

5. Panel Layout & Port Descriptions

5.1 Front Panel

Label	Component	Description
A	Power Indicator	Blue = Working; Green = Standby
B	Power Switch	Device on/off control
C	IR Receiver	Receives signals from IR remote
D	Input Buttons (1-4)	Manual input selection + green LED indicators
E	AUTO/MANUAL Button	Toggle auto/manual mode (hold 3s for cycle mode)
F	Resolution Buttons	1366×768 / 720P / 1080P / 4K30 (output resolution selection)
G	USB-A Port	Firmware upgrade

5.2 Back Panel

Label	Port/Interface	Description
A	HDMI IN 1-4	Connect HDMI source devices (PC, Blu-ray, game console)
B	HDMI OUT	Connect to HDMI display (TV, projector, monitor)
C	3.5mm AUDIO OUT	Analog audio output (connect to speakers/amplifier)
D	RS232 Port (3-pin)	Serial control port
E	IR Extension	Connect IR extender cable (optional)
F	DC 12V IN	Power input (connect to included adapter)

6. Operation Guide

6.1 Front Panel Control

Input Switching

- Press **Input 1-4** buttons to select the desired source (LED lights green).
- **Auto Mode**: Press **AUTO** to switch to the last active input (auto-detects active sources).
- **Exit Auto Mode**: Press any Input 1-4 button.
- **Cycle Mode**: Hold **AUTO** for 3s to cycle through inputs every 3 seconds.
- **Exit Cycle Mode**: Press any Input 1-4 button.

Output Resolution Setting

Press the corresponding resolution button:

1366×768 / **720P** / **1080P** / **4K30** → LED confirms selection.

6.2 IR Remote Control

Remote Key	Function
1-4	Input source selection (1-4)
AUTO	Toggle auto/manual switching mode
RES	Cycle through output resolutions
F1/F2	Reserved for future functions

Other buttons are inactive in this context

6.3 RS232 Control

6.3.1 RS232 Port Definition

- Baud Rate: 115200
- Data Bits: 8
- Stop Bit: 1
- Parity: None

- Flow Control: None

6.3.2 Common RS232 Commands (ASCII, ends with)

Command	Description	Example
AT+HTSWMOD=SC81,MOD\$	Set switching mode (1=Auto, 2=Manual)	AT+HTSWMOD=SC81,1\$ (Auto mode)
AT+HTSWIN=SC81,IN\$	Switch to input (IN=1-4)	AT+HTSWIN=SC81,2\$ (Input 2)
AT+HTSETOUTRES=SC81,mode,OUT\$	Set output resolution (mode=1=720P, 2=1366×768, 3=1080P, 4=4K30)	AT+HTSETOUTRES=SC81,4,OUT\$ (4K30)
AT+HTOUTMOD=SC81,Mode,Out\$	Set HDMI/DVI mode (Mode=1=HDMI, 2=DVI)	AT+HTOUTMOD=SC81,1,Out\$ (HDMI)
AT+HTEDIDH=SC81,In,Out\$	Copy EDID	AT+HTEDIDH=SC81,1,Out\$ (Copy Input 1 EDID)
AT+HTFACT=MX88\$	Factory reset	AT+HTFACT=MX88\$
AT+HTSTANDBY=SC81\$	Enter standby mode	AT+HTSTANDBY=SC81\$

7. Troubleshooting

Issue	Possible Cause	Solution
No video output	1. Loose HDMI cable 2. Wrong input selected 3. Power adapter disconnected	1. Reconnect HDMI cables firmly 2. Press Input 1-4 to select active source 3. Verify power adapter connection
Black screen during switching	1. Non-seamless resolution mismatch 2. HDCP incompatibility	1. Ensure input resolutions are compatible 2. Use HDCP 1.4-compliant devices

No audio output	1. 3.5mm cable disconnected2. Audio device powered off	1. Reconnect 3.5mm audio cable2. Power on external audio device
RS232 control not working	1. Incorrect baud rate/settings2. Loose RS232 cable	1. Match RS232 parameters (115200, 8N1)2. Reconnect RS232 cable
Resolution not supported	1. Display does not support selected resolution2. HDMI cable not HDMI 1.4-compliant	1. Select lower resolution (e.g., 1080P)2. Replace with HDMI 1.4-certified cable

8. Warranty & Support

Warranty Period

- 1-year limited warranty from the date of purchase.
- Covers manufacturing defects in materials and workmanship.

Warranty Exclusions

- Damage from improper use, negligence, or accidents.
- Damage from voltage surges or non-compliant power adapters.
- Unauthorized disassembly, modification, or repair.
- Wear and tear of consumable parts (cables, connectors).

Technical Support

For assistance, contact your local distributor or visit our official website.

Provide the product serial number (located on the bottom panel) for faster service.