CH44008K_W

8K HDMI 2.1 4×4 Matrix Switcher

4 HDMI Inputs, 4 Outputs, 48Gbps, 8K60 / 4K120, Per-Output Scaling, HDR-to-SDR, Web GUI

Product Overview

PANIO CH44008K_W is a professional 1U 8K HDMI 2.1 4×4 matrix switcher for routing four high-bandwidth HDMI sources independently to four display zones. With 48Gbps bandwidth, it supports 8K@60Hz 4:2:0 12-bit and 4K@120Hz 4:4:4 12-bit for control rooms, meeting spaces, multi-display AV systems, home theater and AV compatibility testing.

Each output can independently select its source, resolution scaling, HDR pass-through / HDR-to-SDR conversion, HDCP, ARC, mute and display state. The platform also provides 43 EDID modes, four Optical S/PDIF and four balanced / unbalanced L/R audio outputs, plus browser-based Web GUI, TCP/IP, RS-232, CEC, front-panel and IR control.

Diagram



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Product Features

- **Professional 4×4 HDMI 2.1 Matrix: Four HDMI inputs can be independently routed to four HDMI outputs; multiple display zones may also share the same source.**
- **48Gbps 8K60 / 4K120 Video: Supports up to 8K@60Hz 4:2:0 12-bit and 4K@120Hz 4:4:4 12-bit for high-resolution and high-refresh-rate AV systems.**
- **48Gbps & HDCP 2.3:** High-bandwidth HDMI 2.1 transmission supports high-resolution and high-refresh-rate source devices.
- **Per-Output Scaling / Downscaling: OUT 1–4 independently support Pass-through, 8K→4K, 8K/4K→1080p, Auto and Audio Only modes for mixed-resolution displays.**
- **Per-Output HDR Processing:** Each output independently supports HDR pass-through, HDR→SDR conversion or Auto behavior.
- **43 EDID Modes:** Includes 36 built-in profiles, 3 user-defined memories and 4 Copy OUT EDID modes.
- **4-Channel Audio Extraction:** Four Optical S/PDIF and four 5-pin balanced / unbalanced L/R outputs support external audio systems.
- **ARC & Audio Matrix:** ARC can be enabled per output; extracted audio can follow an input, follow an output or be freely routed.
- **Web GUI / TCP-IP / RS-232: Browser and serial control centralize matrix routing, presets, EDID, output processing, audio matrix, CEC, network and system settings.**
- **HDMI 2.1 & CEC Features:** Supports VRR, ALLM, QMS, QFT, SBTM and CEC control with compatible source and display equipment.

Specification

Parameter	Specification
Model	CH44008K_W
Product Type	Professional 8K HDMI 2.1 4×4 matrix switcher with per-output processing, ARC, audio extraction and Web GUI
Input	4 × HDMI IN (Type A, 19-pin)
Output	4 × HDMI OUT; 4 × Optical S/PDIF; 4 × 5-pin L/R audio
Maximum Video	8K@60Hz 4:2:0 12-bit; 4K@120Hz 4:4:4 12-bit
Video Bandwidth	48Gbps; HDMI 2.1; HDCP 2.3
HDR / HDMI 2.1	HDR, HDR10, HDR10+, Dolby Vision, HLG; VRR, ALLM, QMS, QFT, SBTM
Output Processing	Per-output scaling: Pass / 8K→4K / 1080p / Auto / Audio Only; HDR→SDR
EDID / Audio	43 EDID modes; 4-channel Optical + balanced / unbalanced L/R audio matrix
Control / Power	Front LCD/buttons, IR, Web GUI, TCP/IP, RS-232, CEC; DC 24V / 2.7A

Interface & System Architecture

Interface	Description
HDMI Inputs	4 × HDMI 2.1 source inputs
HDMI Outputs	4 × HDMI outputs; each output supports independent routing and video processing
Audio Outputs	4 × Optical S/PDIF + 4 × 5-pin 3.81 mm L/R; balanced / unbalanced
Control Interfaces	TCP/IP RJ45; RS-232 D-Sub 9; IR EXT 3.5 mm; front panel + IR remote
EDID	36 built-in + 3 user-defined + 4 Copy OUT profiles; 43 modes total
Web / System	Browser GUI for routing, presets, EDID, scaling, HDR, audio, CEC and network settings

Display & Signal Functions

- **Independent 4×4 Processing:** Each output selects any input and independently sets resolution, HDR, HDCP, ARC, mute and display state.
- **Audio Matrix & Control:** Bind audio to input/output or select HDMI / ARC sources; control by Web GUI, TCP/IP, RS-232, CEC and IR.

Mechanical & Connection

Parameter	Specification
Dimensions	440 × 203 × 44.5 mm (L × W × H)
Weight	Approx. 2.65 kg
Power Input	DC 24V / 2.7A locking adapter (AC 100–240V, 50/60Hz input)
Maximum Power	35 W
HDMI Cable Guide	8K: approx. 3 m; 4K60: 5 m; 4K30: 10 m; 1080p: 15 m

Package Contents & Cable Notes

- **CH44008K_W Main Unit:** 1 unit
- **DC 24V / 2.7A Locking Power Adapter + AC Cord:** 1 set
- **IR Remote Controller + IR Wideband Receiver Cable:** 1 set
- **RS-232 Serial Cable + 5-pin 3.81 mm Terminal Blocks:** 1 cable + 4 blocks
- **Rack Ears + Mechanical Screws + User Manual:** 2 ears + 8 screws + 1 manual

PANIO MATRIX CERTIFICATION SYSTEM

PANIO QUALITY STANDARD

Advanced Display Functions

- **Independent 4×4 Routing:** Route any input to any output; multiple outputs may share one source.
- **Per-Output Scaling:** OUT 1–4 independently support Pass-through, 8K→4K, 1080p, Auto or Audio Only.
- **HDR Processing:** OUT 1–4 independently support HDR pass-through, HDR→SDR or Auto.
- **ARC / Audio Matrix:** Enable ARC per output and route extracted audio by input, output or ARC source.
- **Web GUI / RS-232:** Centralize routing, EDID, output processing, audio, CEC and network settings.

Installation Recommendations

- Use Ultra High Speed HDMI cable for 8K / 4K120 and verify final cable length.
- Match each output's Video Mode, HDR and EDID to the connected display.
- For Web GUI, place the matrix and control PC on the same network and confirm the IP address.
- After power-up, allow Web and RS-232 control modules to finish initialization.
- Use the supplied DC 24V / 2.7A locking adapter and proper rack grounding.

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