



CPLUS-31USBC

4K60 Multi-Format to HDMI Switcher



Operation Manual



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SAFETY PRECAUTIONS

Please read all instructions before attempting to unpack, install or operate this equipment and before connecting the power supply. Please keep the following in mind as you unpack and install this equipment:

- Always follow basic safety precautions to reduce the risk of fire, electrical shock and injury to persons.
 - To prevent fire or shock hazard, do not expose the unit to rain, moisture or install this product near water.
 - Never spill liquid of any kind on or into this product.
 - Never push an object of any kind into this product through any openings or empty slots in the unit, as you may damage parts inside the unit.
 - Do not attach the power supply cabling to building surfaces.
 - Use only the supplied power supply unit (PSU). Do not use the PSU if it is damaged.
 - Do not allow anything to rest on the power cabling or allow any weight to be placed upon it or any person walk on it.
 - To protect the unit from overheating, do not block any vents or openings in the unit housing that provide ventilation and allow for sufficient space for air to circulate around the unit.
 - Please completely disconnect the power when the unit is not in use to avoid wasting electricity.
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VERSION HISTORY

REV.	DATE	SUMMARY OF CHANGE
Ver 1.00	2026/7/28	Initial Release



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1. INTRODUCTION

This 3x1 Multi-Format to HDMI Switch is a 4K@60Hz (4:4:4) switch featuring USB Type-C and HDMI inputs which are automatically converted to a standard HDMI format for use with projectors or displays. This unit provides easy switching functionality with both a manual input selection button and an optional autosensing “last memory” feature which can automatically switch to a newly connected source or revert to the previous source, if the current one becomes disconnected, with no user intervention necessary.

The interface supports full, uncompressed 4K@60Hz (4:4:4) inputs and output with HDR10+ and Dolby Vision, as well as pass-through audio formats. This common-interface switch provides high-quality video signal transmission for use in presentation systems, huddle rooms, digital signage, educational AV deployments, and home entertainment installations. The compact, lightweight form factor supports portable use and rapid deployment.

2. APPLICATIONS

- Home entertainment room
- Lecture hall display and control
- Showroom displays
- Meeting room presentation and control
- Classroom presentations

3. PACKAGE CONTENTS

- 1× 4K60 Multi-Format to HDMI Switcher
- 1× 5V/3A DC Power Adapter
- 1× Operation Manual

4. SYSTEM REQUIREMENTS

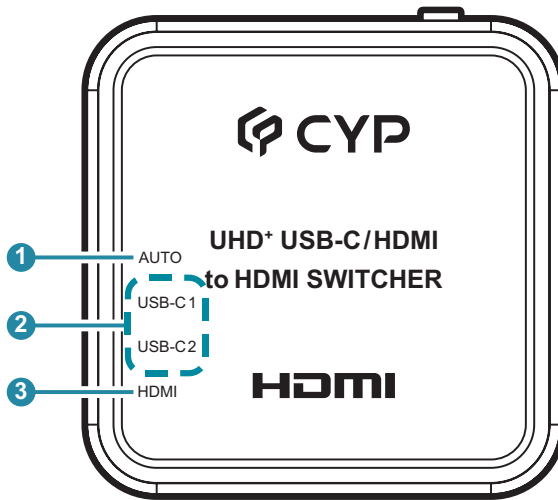
- HDMI or USB-C source equipment such as media players, video game consoles, laptops, set-top boxes or mobile devices supporting DisplayPort Alt Mode (DP Alt Mode).
- HDMI receiving equipment such as HDTVs, monitors or audio amplifiers.
- The use of Premium High Speed HDMI cables is highly recommended.

5. FEATURES

- 2 USB Type-C inputs, 1 HDMI input, and 1 HDMI output
- Input and output resolution up to 4K@60Hz (4:4:4) uncompressed video with HDR10+, HLG, and Dolby Vision at 18 Gpbs
- Controllable via a single rear panel button with LEDs
- Supports auto-switch functionality with a “last memory” feature
- EDID bypass with an optimized algorithm to ensure the optimal resolution and feature support
- Support Deep Color input and output up to 12-bit
- Support pass-through of audio formats including LPCM (up to 8 channels), Bitstream and HD Bitstream.
- Compatible advanced audio formats such as Dolby Digital 5.1 (AC-3), DTS 5.1, DD+, D-TrueHD, DTS-HD High Resolution, DTS-HD Master Audio, Dolby Atmos, and DTS X
- Compact and portable switch box design
- HDCP 1.x and 2.2 compliant

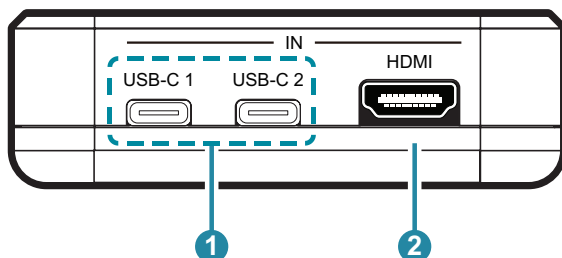
6. OPERATION CONTROLS AND FUNCTIONS

6.1 Top Panel



- 1 AUTO LED:** This LED will illuminate when the auto switch function is active. While active, the input source will be selected based on the most recently connected live source.
- 2 USB-C 1~2 LEDs:** The LED of the currently selected input will illuminate blue. When an input has an active source, but is not currently selected, it will illuminate red. When no source is detected, the LED will remain off.
- 3 HDMI LED:** The LED of the currently selected input will illuminate blue. When an input has an active source, but is not currently selected, it will illuminate red. When no source is detected, the LED will remain off.

6.2 Front Panel

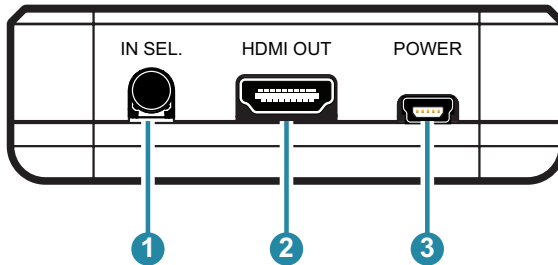


- 1 USB-C IN 1~2 Ports:** Connect to USB Type-C host or video source equipment such as PCs or laptops.

Note: Not all devices with USB Type-C ports can support video output. Please verify that the device supports video output from the USB Type-C port before attempting to use it as a video source.

- 2 HDMI IN Port:** Connect to HDMI source equipment such as media player, game console, or set-top box. DVI source are supported with the use of an HDMI to DVI adapter.

6.3 Rear Panel



- 1 IN SEL. Button:** A short press of this button will sequentially switch through the available inputs. Press and hold this button for 3 seconds to enable or disable automatic switching to any newly detected source.
- 2 HDMI OUT Port:** Connect to HDMI TV, monitor, or amplifier for digital video and audio output.
- 3 POWER USB-C Port:** Plug the USB-C 5V DC power adapter into this port and connect it to an AC wall outlet for power. This port is also reserved for firmware update use.

6.4 Firmware Update

6.4.1 Update Procedure

To update the firmware via USB, connect your PC to the Power port and do the following steps. After the upgrade is complete, the unit will reboot automatically.

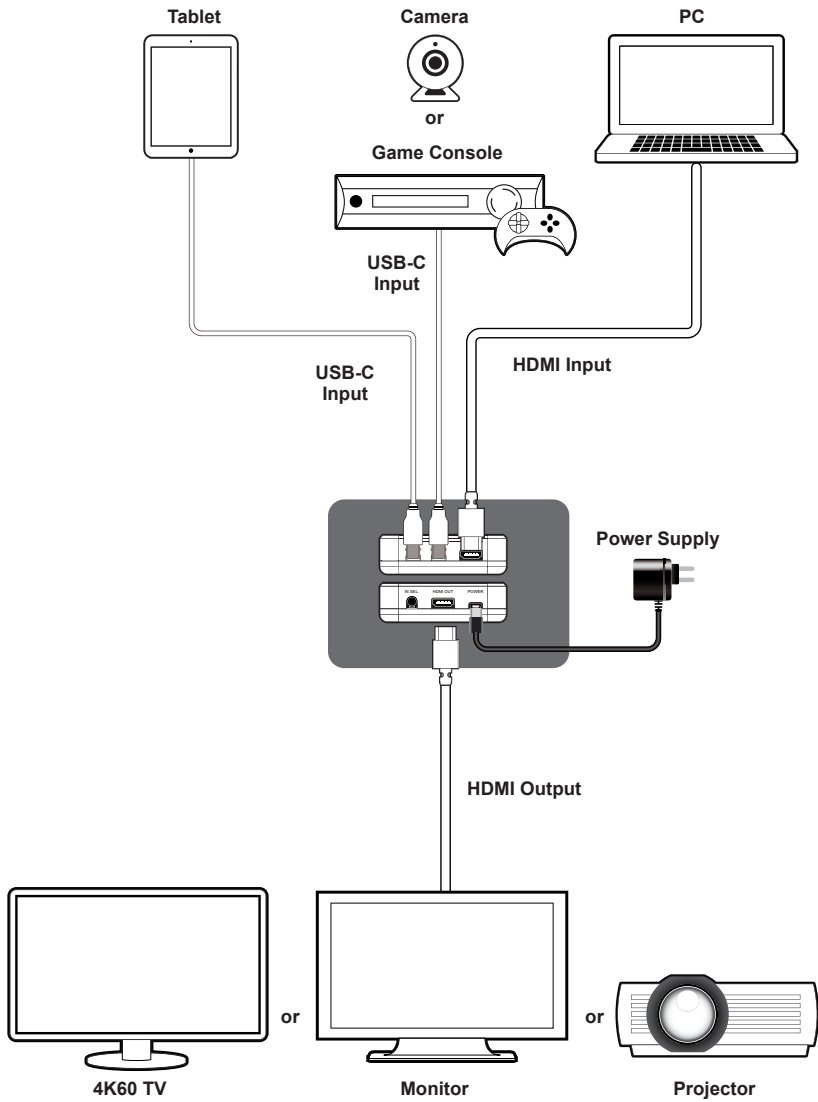
Front Panel Button:

- Press and hold the “IN SEL.” button while connecting the unit to a PC via a Type-C USB cable.
- After connection, the PC will detect a new storage drive named “USB DISK” and the AUTO LED on the unit will begin blinking blue to indicate the unit is in Update Mode.
- Copy a valid firmware file (*.bin format) from your PC to the “USB DISK” drive.

Note: The update file must be a compatible and properly named (3x1HdmiSwitch_502E_CYP_Vxxx.BIN) firmware file.

- After the file has successfully been copied, the AUTO LED will stop blinking to indicate that the firmware update process has started.
- During the update process, the unit will be flashing the LEDs on the front of the unit. After the upgrade is complete, the unit will reboot automatically.

7. CONNECTION DIAGRAM



8. SPECIFICATIONS

8.1 Technical Specifications

HDMI Bandwidth	18Gbps
USB-C Bandwidth	21.6Gbps
Input Ports	1×HDMI (Type-A) 2×USB (Type-C)
Output Port	1×HDMI (Type-A)
Service Port	1×USB 2.0 (Type-C)
Power Supply	5V/3A DC (US/EU standards, CE/FCC/UL certified)
ESD Protection (HBM)	±12kV (Air Discharge) ±8kV (Contact Discharge)
Dimensions (W×H×D)	85mm×26mm×85mm [Case Only] 85mm×26mm×86.5mm [All Inclusive]
Weight	87g
Chassis Material	Plastic
Chassis Color	White
Operating Temperature	0 °C – 50 °C/32 °F – 122 °F
Storage Temperature	-40 °C – 70 °C / -40 °F – 158 °F
Relative Humidity	20 – 90% RH (Non-condensing)
Power Consumption	4.6W

8.2 Video Specifications

Supported Resolutions (Hz)	Input		Output
	USB-C	HDMI	HDMI
720×400p@60/70/85	x	x	x
640×480p@60/72/75/85	72/75/85	72/75/85	72/75/85
720×480i@60	x	x	x
720×480p@60	✓	✓	✓
720×576i@50	x	x	x
720×576p@50	✓	✓	✓
800×600p@56/60/72/75/85	✓	✓	✓
848×480p@60	✓	✓	✓
1024×768p@60/70/75/85	✓	✓	✓
1152×864p@75	✓	✓	✓
1280×720p@50/60	✓	✓	✓
1280×768p@60/75/85	60/75	60/75	60/75
1280×800p@60/75/85	60	60	60
1280×960p@60/85	✓	✓	✓
1280×1024p@60/75/85	✓	✓	✓
1360×768p@60	✓	✓	✓
1366×768p@60	x	x	x
1400×1050p@60	✓	✓	✓
1440×900p@60/75	✓	✓	✓
1600×900p@60RB	✓	✓	✓
1600×1200p@60	✓	✓	✓
1680×1050p@60	✓	✓	✓
1920×1080i@50/60	x	x	x
1920×1080p@24/25/30	✓	✓	✓
1920×1080p@50/60	✓	✓	✓
1920×1200p@60RB	✓	✓	✓

Supported Resolutions (Hz)	Input		Output
	USB-C	HDMI	HDMI
2560×1440p@60RB	×	×	×
2560×1600p@60RB	×	×	×
2048×1080p@24/25/30	×	×	×
2048×1080p@50/60	✓	✓	✓
3840×2160p@24/25/30	✓	✓	✓
3840×2160p@50/60 (4:2:0)	×	✓	✓
3840×2160p@24, HDR10	✓	✓	✓
3840×2160p@50/60 (4:2:0),HDR10	×	✓	✓
3840×2160p@50/60	✓	✓	✓
4096×2160p@24/25/30	✓	✓	✓
4096×2160p@50/60 (4:2:0)	×	✓	✓
4096×2160p@24, HDR10	✓	✓	✓
4096×2160p@50/60 (4:2:0),HDR10	×	✓	✓
4096×2160p@50/60	✓	✓	✓

8.3 Audio Specifications

8.3.1 Digital Audio

HDMI & USB-C Inputs / Output	
LPCM	
Max Channels	8 Channels
Sampling Rate (kHz)	32, 44.1, 48, 88.2, 96, 176.4, 192
Bitstream	
Supported Formats	Standard & High-Definition

8.4 Cable Specifications

Cable Length	HD	FHD	4K UHD	4K UHD*	8K UHD
High Speed HDMI Cable					
HDMI Input	15m	10m	5m	3m	×
HDMI Output	15m	10m	5m	3m	×
USB-C Cable					
USB-C Input	2m			1m	×

Bandwidth Category Examples:

- **HD Video**
 - 720p@60Hz
 - HDMI transmission rates lower than 3Gbps
 - HD-SDI (SMPTE 292M, 1.485Gbps)
- **FHD Video**
 - 1080p@60Hz
 - HDMI transmission rates between 3Gbps and 5.3Gbps
 - 3G-SDI (SMPTE 424M, 2.970Gbps)
- **4K UHD Video**
 - 4K@24/25/30Hz (8-bit color) & 4K@50/60Hz (4:2:0, 8-bit color)
 - HDMI transmission rates between 5.3Gbps and 10.2Gbps
 - 6G-SDI (SMPTE ST 2081, 6Gbps)
- **4K UHD* Video**
 - 1080p@120Hz (10/12-bit HDR)
 - 4K@50/60Hz (4:4:4, 8-bit) & 4K@50/60Hz (4:2:0, 10/12-bit HDR)
 - HDMI transmission rates between 10.2Gbps and 18Gbps
 - 12G-SDI (SMPTE ST 2082, 12Gbps)
- **8K UHD Video**
 - 4K@120Hz (10/12-bit HDR)
 - 8K@24/25/30Hz (10/12-bit HDR) & 8K@50/60Hz (4:2:0, 8-bit color)
 - HDMI transmission rates between 18Gbps and 48Gbps
 - 24G-SDI (SMPTE ST 2083, 24Gbps)

9. ACRONYMS

ACRONYM	COMPLETE TERM
4K UHD	4K Ultra-High-Definition (10.2Gbps max)
4K UHD*	4K Ultra-High-Definition (18Gbps max)
AV	Audio/Video
AVR	Audio/Video Receiver or Recorder
dB	Decibel
DVI	Digital Visual Interface
eARC	Enhanced Audio Return Channel
EDID	Extended Display Identification Data
Gbps	Gigabits per second
HD	High-Definition
HDCP	High-bandwidth Digital Content Protection
HDMI	High-Definition Multimedia Interface
HDR	High Dynamic Range
HDTV	High-Definition Television
HPD	Hot Plug Detection
kHz	Kilohertz
LED	Light-Emitting Diode
LPCM	Linear Pulse-Code Modulation
MHz	Megahertz
PD	Powered Device
PSE	Power Sourcing Equipment
SDTV	Standard-Definition Television
SNR	Signal-to-Noise Ratio
TCP	Transmission Control Protocol
THD+N	Total Harmonic Distortion plus Noise
TMDs	Transition-Minimized Differential Signaling
UHD TV	Ultra-High-Definition Television
USB	Universal Serial Bus

ACRONYM	COMPLETE TERM
WUXGA (RB)	Widescreen Ultra Extended Graphics Array (Reduced Blanking)
XGA	Extended Graphics Array
Ω	Ohm



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