



User Manual 8K DP to HDMI EDID Emulator

Model: DPH8K-EWB



Taiwan Hanwell Technology
www.hanwell.com.tw

Package Contents:

EDID Emulator x1

Requirements:

Source: PC, laptop, gaming console, or other devices with DisplayPort (DP) 1.4 output.

Display: Monitor, projector, or TV with HDMI 2.1 input supporting 4K@120Hz 4:4:4 or 8K@60Hz 4:4:4. If your display has HDMI 2.1 or lower specifications, use the EDID copy function to ensure proper display and EDID correspondence.

Cables: High-quality 24AWG or 26AWG HDMI 2.1 cable for optimal performance (supports up to 15 meters).

Note: The actual HDMI video and audio output depends on the specifications of the device being used.

Product Overview:



- HDMI Output: Connect to HDMI display.
- LED Status Indicator:
 - Green Light: Uses internal EDID emulation, default set to 8K@60Hz.
 - Blue Light: Uses external EDID emulation, default set to 4K@120Hz, can be overwritten by copying to match a specific screen's EDID.
- DP Input: Connect to DP source (integrated cable).
- EDID Mode Button:
 - Press once to switch between external and internal EDID modes.
 - Hold for 3 seconds to copy the connected screen's EDID as the external EDID.
 - Hold for 10 seconds to reset the EDID mode to factory defaults.

Connecting the EDID Emulator:

- Connect the DPH8K-EWB between the DP source and HDMI display.
- Press the EDID mode button to switch to internal mode (Green LED). Access the display settings on your source device to confirm the detected monitor model and resolution, which should detect the "THWT 8K_60" model.



- If the display does not support 8K@60Hz 4:4:4, refer to the following settings:
 - If your display supports 4K@120Hz, press the button to switch to external mode (Blue LED, 4K@120Hz 4:4:4).
 - If your display does not support 8K@60Hz or 4K@120Hz, copy the external display's EDID for emulation (see next page).
 - Alternatively, use a display that supports 8K@60Hz 4:4:4 or 4K@120Hz 4:4:4.

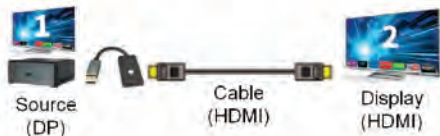
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- For 4K@120Hz 4:4:4 displays, switch to external mode (Blue LED) for optimal performance; the detected model should be "THWT 4K_120."

- For laptops or multi-monitor setups with a graphics card, enable extended display mode to verify the external monitor's model and supported resolution range.



Copying External EDID:

- Connect the DPH8K-EWB between the DP source and HDMI display.
- Hold the EDID mode button for 3 seconds. The LED will blink and turn blue, indicating the display's EDID (including video and audio formats, e.g., 5.1/7.1 channels) has been copied and stored.
- Press the button to switch to external mode (Blue LED). The source will use the copied EDID.

Note: If the graphics card does not support 8K output, do not set the emulator EDID to 8K, as this may result in no display due to differing SCDC communication modes.

Resetting to Factory Defaults:

If you want to restore the internal and external EDID to factory default values, hold the EDID mode button for 10 seconds. The LED will blink 6 times, and the internal EDID will reset to 8K@60Hz 4:4:4 (Green LED), while the external EDID will reset to 4K@120Hz 4:4:4 (Blue LED).

Headless Operation:

- Connect the DPH8K-EWB to the DP source without a display. The source will detect a virtual display (internal mode: 8K@60Hz 4:4:4, external mode: 4K@120Hz 4:4:4 or copied EDID).
- For DP 1.2 graphics cards (limited to 4K@60Hz), use copy mode to emulate a compatible display's EDID first.
- For DP 1.4 graphics cards, both internal (8K@60Hz 4:4:4) and external (4K@120Hz 4:4:4) modes are applicable.

SCDC Handshaking:

When hot-plugging a display:

- In 8K@60Hz 4:4:4 mode (Green LED), the emulator sends 8K SCDC signals with FRL. An 8K display will show correctly; if your 4K display does not support 4K@120Hz 4:4:4, it may not display—switch to Blue LED mode or copy the external display's EDID for accurate correspondence and display.
- When SCDC handshaking begins, the LED will blink for about 10 seconds. If successful (display connected), the LED will remain steady.
- If no display is detected, the LED will blink for about 10 seconds, then simulate SCDC and keep the LED steady.

Usage Notes:

- Uni-Directional Design: This emulator is a uni-directional adapter, connecting a DisplayPort source to an HDMI display. Reverse configurations (HDMI source to DP display) are not supported.
- DisplayPort Version Compatibility of the source:
 - DP 1.2: Limited to 4K@60Hz. Use copy mode for 4K displays; 8K displays will not work.
 - DP 1.4: Supports 8K@60Hz 4:4:4 and 4K@120Hz 4:4:4. Use copy mode for 4K displays
 - DP 2.1: Not supported (no hardware available for 8K@120Hz 4:4:4).

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3. Graphics Card Requirements:

- (1) High-performance GPUs (e.g., NVIDIA GeForce RTX 4060 Ti or higher) are recommended for 8K output. Most mid-to-high-end 8K-capable GPUs support up to two 8K displays due to bandwidth and memory constraints.
- (2) Attempting to connect a third 8K display may result in downscaling to 4K or disabling the third output. Consult your graphics card's specifications for 8K support and limitations.

4. Display Issues:

- (1) If a 4K display is used with the internal 8K EDID (Green LED), it may not display due to SCDC mismatch. Switch to external mode (Blue LED, 4K@120Hz 4:4:4) or copy the 4K display's EDID.
- (2) Copying an 8K display's EDID with a 4K graphics card or exceeding the card's 8K output limit (typically two displays) may result in no display.

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- (3) 8K displays may take up to 20 seconds to power on. Avoid hot-plugging during this period to prevent signal errors.
- (4) If the display settings window does not show the correct monitor name, close and reopen the settings window.

5. Headless Operation Notes:

For DP 1.2 cards, the default EDID (8K@60Hz 4:4:4 or 4K@120Hz 4:4:4) may exceed capabilities, requiring copy mode. For DP 1.4 cards, both modes are compatible with 8K displays.

6. Cable Quality:

Use a high-quality 24AWG or 26AWG HDMI 2.1 cable to ensure reliable EDID copying and signal transmission over up to 15 meters. Poor-quality or long cables may cause issues.

7. System Integration:

In complex setups (e.g., video walls, matrix switchers), simplify connections by starting with one PC and display to verify functionality before adding layers.

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Common Applications:

1. Remote Login Management:

Enables virtual display detection for remote desktop access without a physical monitor, saving energy and simplifying setups.



2. Video Extension:

Ensures stable EDID correspondence for extenders, maintaining consistent audio/video output.



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3. Video Walls:

Prevents screen arrangement changes during reboots or monitor power cycles.



4. Multi-Screen Operations:

Maintains EDID detection for each HDMI output, ensuring stable window arrangements and accurate aspect ratios.

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5. Video Matrix Switching: Stabilizes video

output during switching, ensuring EDID-based display output.



6. Multi-Computer Switching: Ensures consistent

EDID detection, preventing display anomalies or system logouts.



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Certifications:

1. CE Certification: Complies with EMC Directive 2014/30/EU and technical standards.
2. FCC Certification: Complies with FCC Rules and Regulation Part 15, Subpart B, based on ANSI C63.4, providing protection against harmful interference in residential installations.

Limited Warranty:

HANWELL Technology offers a one-year warranty on workmanship from the invoice date. Newly purchased defective items can be exchanged free of charge if returned within two weeks of arrival. For further details, visit www.hanwell.com.tw

Thank you very much for purchasing the THWT EDID emulator!

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