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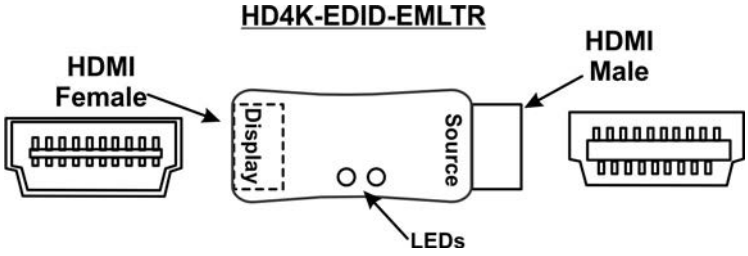
HD4K-EDID-EMLTR

HDMI 2.0 EDID Emulator

The HDMI 2.0 EDID Emulator stores and reproduces EDID information for an HDMI display, and resolves video communication problems that occur between an HDMI video source and display. It is designed for systems that require EDID signals to be continuously provided without interruption, and ensures that the EDID signal is not lost when using AV/KVM switches, splitters, and extenders. Additionally, the emulator can be used in place of a monitor to keep the graphics card of a PC or server awake for remote access over IP.

- Emulates an HDMI display (sink device) by providing Hot Plug Detect and EDID to the HDMI source device.
- Supports Ultra-HD 4Kx2K resolutions up to 3840x2160 @60Hz 4:4:4, 2560x1440p (WQHD), HDTV resolutions to 1080p, and up to 1920x1200 (WUXGA).
- HDMI features supported:
  - HDMI 2.0
  - 12-bit Color / 36-bit Deep Color
  - RGB, YCC 4:4:4, YCC 4:2:2
  - LPCM 2-Channel
  - Bandwidth up to 600 Mhz (18Gbps)
  - Support for CEC (consumer electronic control) compatible devices.
  - 3D
  - HDR
- HDCP 2.2 compliant.
- Supports Learning and Emulation modes.
  - Learning mode: store a display's EDID for later use.
  - Emulation mode: provides EDID to the HDMI source device from the emulator's internal memory.
    - Supports headless operation – no monitor attached to source.
      - Ideal for remote desktop access to a headless computer, virtual desktop on VR headsets, and for use with GPGPU tasks such as cryptocurrency mining.
- Pre-programmed with many standard resolutions with native set to 1080p.
  - Use learning mode to program other resolutions.
- LED indicators provide signal status information.
- Compact design for easy installation and operation.
- No power supply - powered by video source.
- Use for resolving signal handshaking problems between a source and a display.

Installation



1. Connect an HDMI cable between the emulator (at "Display") and the HDMI display device.

2. Plug the HDMI male ("Source") connector of the HD4K-EDID-EMLTR emulator into the HDMI video source.

3. Unplug the HDMI cable from the emulator, causing the blue LED to flash. This indicates the emulator is in Learning Mode.

4. Within 10 seconds, plug the HDMI cable back into the emulator. The Green and Blue LEDs should change to solid ON, indicating that Learning Mode has been successful and the emulator is now in Emulation Mode.

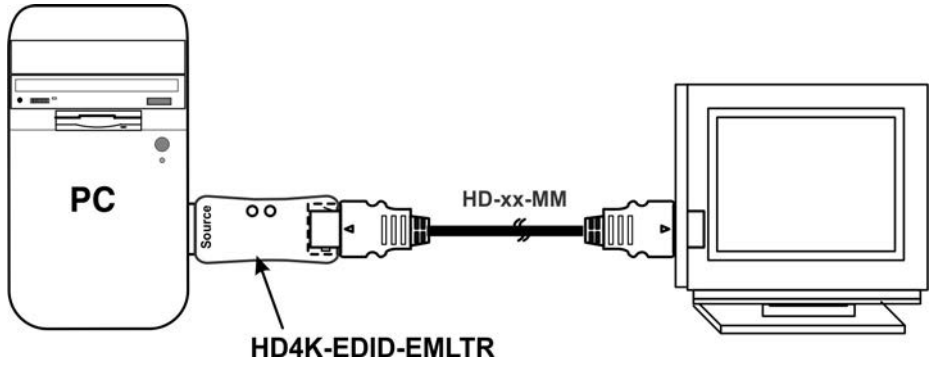
Note: If the HDMI emulator needs to be reset back to its default EDID resolution of 1080p:

1. Start from Step 1 (above) and after step 2 simply unplug the HDMI cable from the emulator. The emulator will return to Learning Mode.
2. Allow 10 seconds to elapse, at which time the blue and green LEDs will turn OFF and Learning Mode will fail. The emulator will now be set to 1080p.
3. If you now unplug the emulator from the video source, and then reconnect it to the video source, the green LED will turn ON indicating it is set to default 1080p.

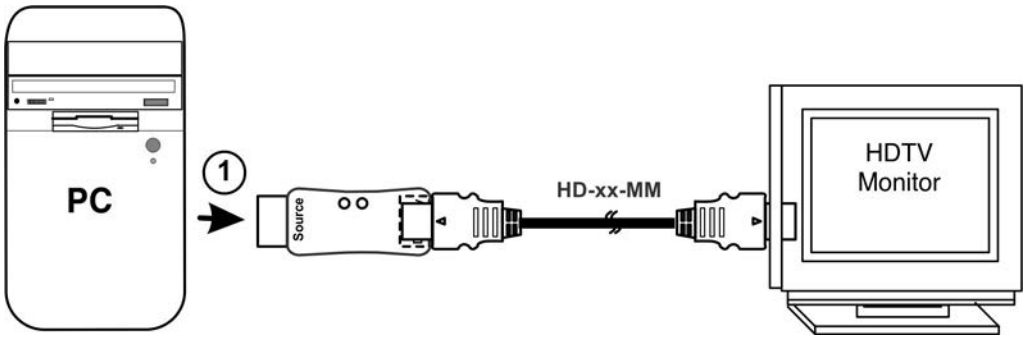
To prevent the HD4K-EDID-EMLTR from going into Learning Mode, unplug the emulator from the video source **before** disconnecting it from the display device.

Connect to Your Application

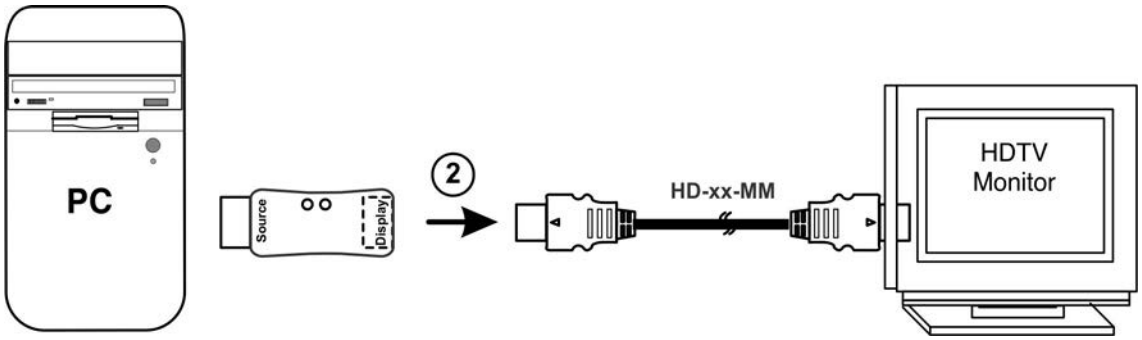
Once the emulator has learned the EDID table and is in Emulation Mode, the emulator can be placed in its ultimate configuration, following these steps, in order.



1. Unplug the emulator from the video source.

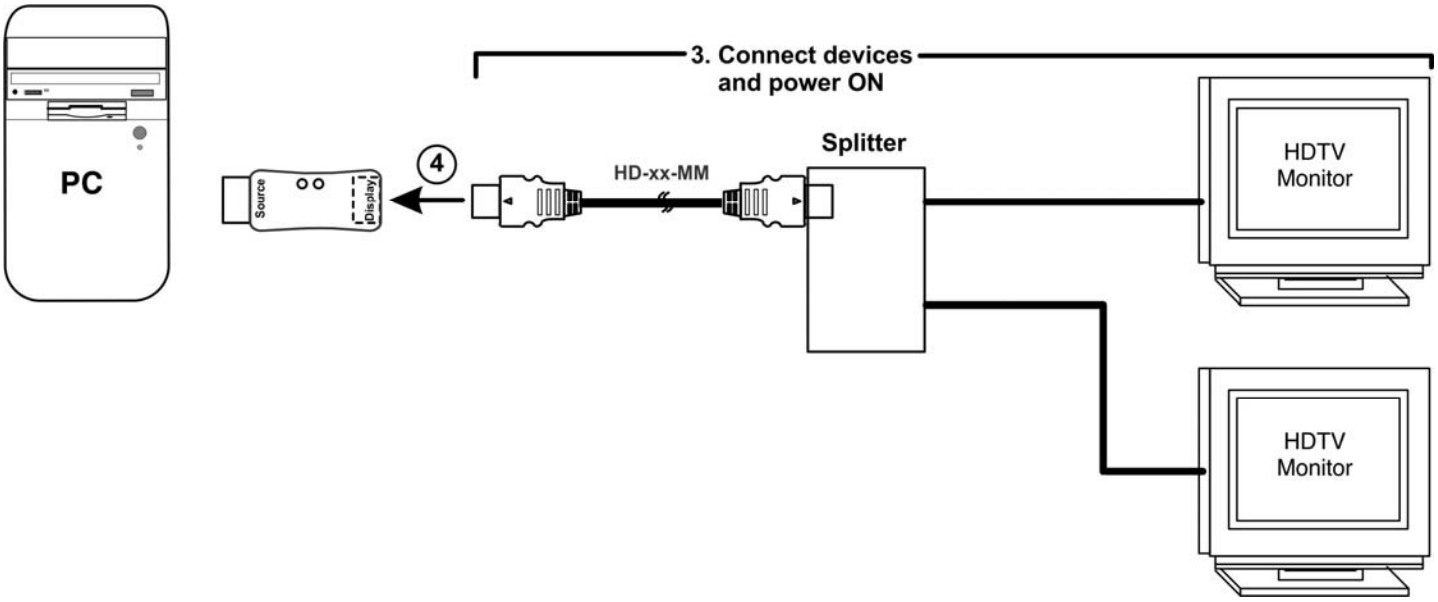


2. Unplug the cable from the "Display" port going to the monitor.

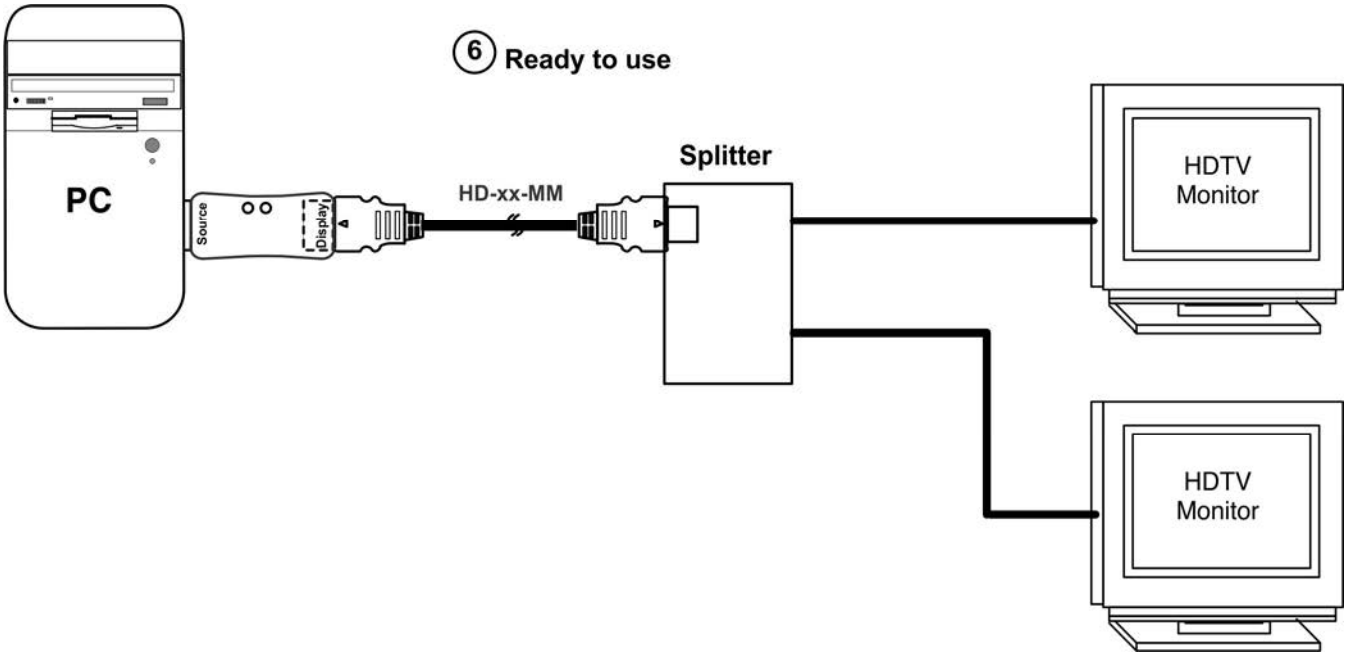


3. Make your connections from the HDMI cable to the display, splitter or extender and power the splitter or extender and associated display(s) ON.

4. Plug the HDMI cable back into the "Display" port on the emulator.



5. Plug the emulator back into the video source.



The EDID table copied during the Learning Mode will be available to provide the desired resolution to your monitor(s).

Note: Make sure your monitor is capable of displaying the selected resolution.

Note: The HD4K-EDID-EMLTR is not recommended for use with KVM or Video-only switches. Using it with a KVM or Video-only switch will cause the emulator to go into learning mode and/or cause your display organization of applications and files to be re-arranged each time the video input on the switch is moved to another input and then back again.

HEADLESS OPERATION SUPPORT

How to use the HD4K-EDID-EMLTR as an HDMI headless emulator by fooling the PC into thinking there is an active monitor connected when:

(a) the monitor is actually powered OFF / in sleep mode OR

(b) the PC is deselected by an HDMI Switch.

Note: If you unplug the EDID emulator from the PC, or disconnect the cable between the emulator and the monitor/HDMI Switch while doing the following procedure or after, you will have to repeat the procedure.

1. With the emulator working (either the emulator has learned a custom EDID or not) and the monitor/HDMI switch connected to the emulator by an HDMI cable, either (a) power OFF the monitor or (b) deselect the PC at the HDMI switch. The emulator will think that the user wants it to learn a new EDID and will switch to learning mode. The green LED will be ON and the blue LED will be flashing.

2. Now, the user will need to wait 10 seconds to void the learning mode. The emulator will then go into a state where neither the green nor the blue LED is ON. Let's call this “learning failure” mode.

3. After confirming the LEDs are OFF, the user will be free to (a) power ON/OFF the monitor, or (b) select/deselect the PC by the HDMI switch at will. The PC will always think that the monitor is connected. In this state, if (a) or (b) happens, the emulator will not switch to learning mode and will be emulating its default EDID table. Resolutions in the table are listed in the Specifications.

The user should not unplug the emulator from the PC or power OFF the PC after this. If the emulator is disconnected or loses power, the factory reset will be completed and the emulator will no longer be in “learning failure” mode. Repeat starting with Step 1 if this happens.

The user should also not disconnect the HDMI cable between the emulator and the monitor/HDMI Switch after this. Otherwise user will need to unplug the emulator from the PC and restart from step 1.

Specifications

Video Format	HDMI 2.0
Max. Resolution	3840x2160p@60Hz
Default Resolution	1920x1080p@60Hz
Color Depth	RGB/YCC444/YCC422: 12-bit
Support pass-through	Yes
Support headless (no monitor actually attached)	Yes
HDCP Support	HDCP 2.2
HDR (High Dynamic Range) Support	Yes
3D Support	Yes
CEC Support	Yes
Audio Format	LPCM (2-channel)
Power Supply	By video source
Dimension	1.693 x 0.9449 x 0.3937 in
	43 x 24 x 10 mm
Weight	0.0314 lb
Compliance	CE, FCC, RoHS

Video EDID

Resolution	Resolution	Resolution
640 x 480p at 60Hz	1024 x 768p at 60Hz	1920 x 1080p at 60Hz
640 x 480p at 67Hz	1024 x 768p at 70Hz	1920 x 1080p at 50Hz
640 x 480p at 72Hz	1024 x 768p at 75Hz	1920 x 1080i at 60Hz
640 x 480p at 75Hz	1152 x 870p at 75Hz	1920 x 1080i at 50Hz
720 x 480p at 60Hz	1152 x 864p at 75Hz	1920 x 1200p at 60Hz
720 x 480i at 60Hz	1280 x 1024p at 75Hz	2560 x 1440p at 60Hz
720 x 400 at 70Hz	1280 x 720p at 50Hz	3840 x 2160p at 24Hz
720 x 576 at 60Hz	1280 x 1024p at 60Hz	3840 x 2160p at 30Hz
720 x 576i at 50Hz	1280 x 960p at 60Hz	3840 x 2160p at 60Hz
800 x 600p at 56Hz	1440 x 480p at 60Hz	
800 x 600p at 60Hz	1440 x 900p at 60Hz	
800 x 600p at 72Hz	1600 x 1200p at 60Hz	
800 x 600p at 75Hz	1680 x 1050p at 60Hz	
832 x 624p at 75Hz		

Audio EDID
LPCM 2-channel, 16/20/24 bit depths at 32/44/48/88/96/176/192 kHz