



CED-1M

HDMI EDID Emulator



Operation Manual



DISCLAIMERS

The information in this manual has been carefully checked and is believed to be accurate. Cypress Technology assumes no responsibility for any infringements of patents or other rights of third parties which may result from its use.

Cypress Technology assumes no responsibility for any inaccuracies that may be contained in this document. Cypress also makes no commitment to update or to keep current the information contained in this document.

Cypress Technology reserves the right to make improvements to this document and/or product at any time and without notice.

COPYRIGHT NOTICE

No part of this document may be reproduced, transmitted, transcribed, stored in a retrieval system, or any of its part translated into any language or computer file, in any form or by any means—electronic, mechanical, magnetic, optical, chemical, manual, or otherwise—without express written permission and consent from Cypress Technology.

© Copyright 2011 by Cypress Technology.

All Rights Reserved.

Version 1.1 August 2011

TRADEMARK ACKNOWLEDGMENTS

All products or service names mentioned in this document may be trademarks of the companies with which they are associated.



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.

REVISION HISTORY

VERSION NO.	DATE (DD/MM/YY)	SUMMARY OF CHANGE
VR0	14/11/13	Preliminary Release
VS1	10/03/14	Updated text/diagrams
VR2	21/04/14	Default EDID DVI Audio Cancel

CONTENTS

1. Introduction	1
2. Applications	1
3. Package Contents	1
4. System Requirements	1
5. Features	2
6. Operation Controls and Functions	3
6.1 Front Panel	3
6.2 Rear Panel.....	4
6.3 EDID Learning Procedure	5
6.4 Default EDID Settings	6
6.5 EDID Application Installation	7
6.6 Using the EDID Application	12
7. Connection Diagram	15
8. Specifications	16
9. Acronyms	17



1. INTRODUCTION

The HDMI EDID Emulator is designed to allow the adjustment of HDMI/DVI EDID information that is provided to a source device by a connected display so that it can output the correct video/audio signal. Aiming to simplify the technical complications involved in video/audio system integration, home theater installation, video/audio equipment testing and experimentation, the unit's learning function allows the user to Read and Write the video/audio EDID to the system. It also supports EDID Emulation and Bypass modes.

2. APPLICATIONS

- HDMI/DVI EDID manipulation
- Video/Audio system integration and home theater installation
- Video/Audio equipment testing
- EDID preset management

3. PACKAGE CONTENTS

- HDMI EDID Emulator
- Mini-USB to USB Type A Cable
- Operation Manual

4. SYSTEM REQUIREMENTS

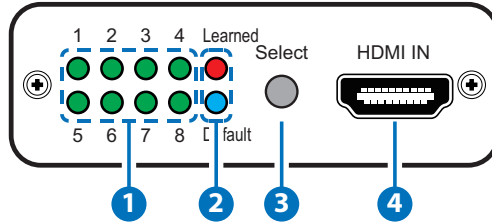
Video/Audio source device, TV/display equipment with HDMI input and output.

5. FEATURES

- HDMI and DVI 1.0 compliant
- Supports the following HDMI features:
 - High video bandwidth up to 300MHz/9 Gbps
 - Resolutions up to 1080p@60Hz and 4K×2K@24/25/30Hz
 - 12-bit Deep Color
 - LPCM 7.1CH, Dolby TrueHD, Dolby Digital Plus and DTS-HD Master Audio (Sampling rates from 32kHz to 192kHz)
- Supports four different EDID functions:
 - Read: Reads the TV/display's EDID information
 - Write: Overwrites the TV/display's EDID information (TV/display needs to support overwrite function)
 - Emulator: Allows the source device to read the selected EDID information from the unit's Default or Learned EDID memory
 - Bypass: Allows the source device to read the EDID information directly from the TV/display
- Supports up to 8 sets of default EDID settings
- Supports DVI sources by using a HDMI to DVI adaptor
- Supports CEC and EDID pass-through
- Supports being powered by USB or compatible HDMI input

6. OPERATION CONTROLS AND FUNCTIONS

6.1 Front Panel



1 1~8 LEDs: When in 'Learned' or 'Default' mode, each of these LEDs indicates a different EDID setting (1 to 8). Repeatedly press the 'Select' button to switch between settings, the LED will illuminate to indicate the current selected settings.

2 Learned LED: Select the 'Learned' mode to save up to 8 unique sets of HDMI EDID settings. Please refer to Section 6.3 for the EDID learning procedure.

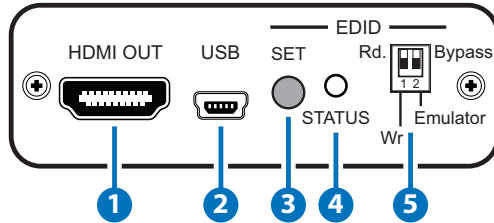
Default LED: Select the 'Default' mode to use the built-in default EDID settings, press 'Select' button to choose from 1~8. Please refer to Section 6.4 for the default EDID settings.

3 Select Button: Press for 3 seconds to switch between the 'Learned' and 'Default' modes, the LED will illuminate to indicate the selected mode.

Then repeatedly press the 'Select' button to cycle through EDID settings (1 to 8).

4 HDMI IN: Connect to an HDMI source such as a DVD/Blu-ray or set-top box. The unit can also be powered by an source device that provides power over the HDMI connection.

6.2 Rear Panel



- 1 **HDMI OUT:** Connect to an HDMI equipped TV/display.
- 2 **USB:** Connect the Mini-USB cable to an active USB device to power the system. It can also be powered from a device that has HDMI connection that supplies power.
- 3 **EDID SET Button:** Press to execute the EDID Read/Write function.
- 4 **EDID STATUS LED:** Indicates the EDID Read/Write status.
- 5 **EDID Switch:** Selects the Read/Write and Bypass/Emulator functions.

Rd (Read): Sets the Emulator mode to 'Read' (see Section 6.3).

Wr (Write): Sets the Emulator mode to 'Write' (see Section 6.3).

Emulator: When the DIP switch is set to the 'Emulator' position, the Video/Audio source device will read the unit's current set EDID (1~8). To change to another EDID, press the 'Select' button to switch between settings, the LED will illuminate to indicate the current selected settings.

Bypass: When the DIP switch is set to 'Bypass' position, the Video/Audio source device will read HDMI TV/display's EDID settings directly.



6.3 EDID Learning Procedure

To Read the EDID:

1. Connect a TV/display to the HDMI output for EDID reading.
2. Set the 'Emulator/Bypass (2)' switch to 'Emulator' first then set the 'Rd/Wr (1)' switch to the 'Rd. (Read)' position.
3. Press the 'Select' button for 3 seconds to put the unit into 'Learned' mode.
4. Press the 'Select' button repeatedly to cycle through to the required 1 to 8 EDID setting.
5. Press the 'SET' button for 3 seconds to write the EDID to the corresponding memory as indicated by the LED.
6. When the 'STATUS' LED illuminates in Green the EDID learning has been successful but if the 'STATUS' LED is Red the learning has failed.

To Write the EDID:

1. Connect a TV/display to the HDMI output for EDID writing.
2. Set the 'Emulator/Bypass (2)' switch to 'Emulator' first then set the 'Rd/Wr (1)' switch to the 'Wr. (Write)' position.
3. Press the 'Select' button repeatedly to cycle through to the required 'Learned/Default' 1 to 8 EDID setting.
4. Press the 'SET' button for 3 seconds to overwrite the HDMI TV/display EDID setting. The 'STATUS' LED will blink during the writing process.
5. When the 'STATUS' LED illuminates in Green the EDID writing has been successful but if the Status LED is Red the writing has failed. If the 'STATUS' LED did not blink and illuminate in Red it means TV's EDID is not writable.

Warning: Once the writing is successfully done the original EDID will be erased. It is recommended that the original EDID settings are backed-up by storing them in the unit before performing the overwrite. Caution is advised when using this function.

6.4 Default EDID Settings

LED NO.	VIDEO	AUDIO
1	DVI	N/A
2	1080p@60Hz, 8-bit	LPCM 2CH
3	1080p@60Hz, 12-bit Deep Color	LPCM 2CH
4	3D or 1080p@60Hz, 12-bit Deep Color	LPCM 2CH
5	4K×2K@24/25/30Hz	LPCM 2CH
6	1080p@60Hz, 8-bit	LPCM 5.1CH
7	3D or 1080p@60Hz, 12-bit Deep Color	Dolby TrueHD or DTS-HD Master Audio
8	4K×2K@24/25/30Hz or 3D	Dolby TrueHD or DTS-HD Master Audio



6.5 EDID Application Installation

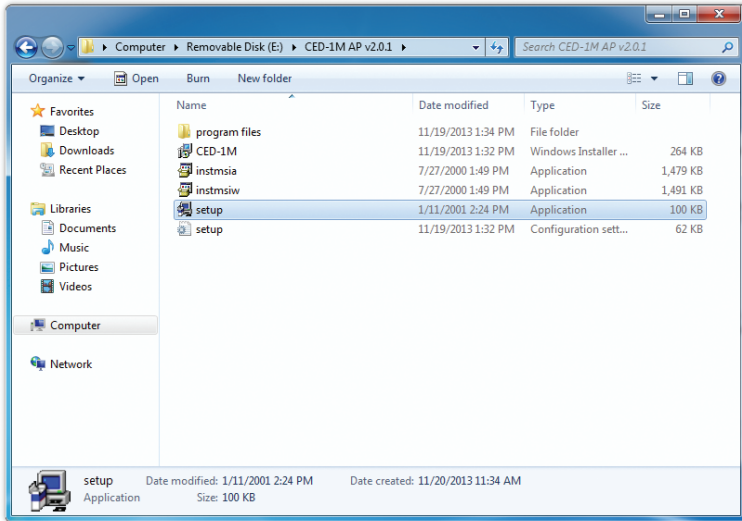
The following section lists the procedures to follow when installing the EDID application on your Windows PC. Please follow the steps outlined below to successfully install the software.

The application can be downloaded from the product page on the Cypress website (<http://www.cypress.com.tw>) and selecting the 'Downloads' tab.

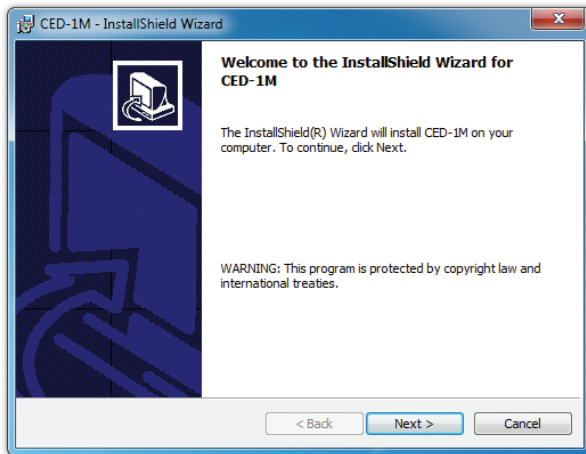
The screenshot displays the Cypress website interface for the 'HDMI EDID Emulator' (SKU: CED-1M). The page features a navigation menu with categories like Matrix, Splitters, Switchers, Extenders, Scalers, Video Conversion, Audio Conversion, Digital Signage, Others, and About Us. The main content area shows the product name and a large image of the device. Below the main image, there are smaller images of related products and a 'Click image To Enlarge' prompt. The 'Downloads' tab is highlighted with a red circle, showing a list of files including 'Manual' and 'CED-1M_AP_v2.0.1'. A 'Product enquires' button is visible on the right side of the page.

Once the software has downloaded to the PC, navigate to the download location and extract the installation folder from the compressed file by right clicking on the .zip file and selecting 'Extract to Folder'.

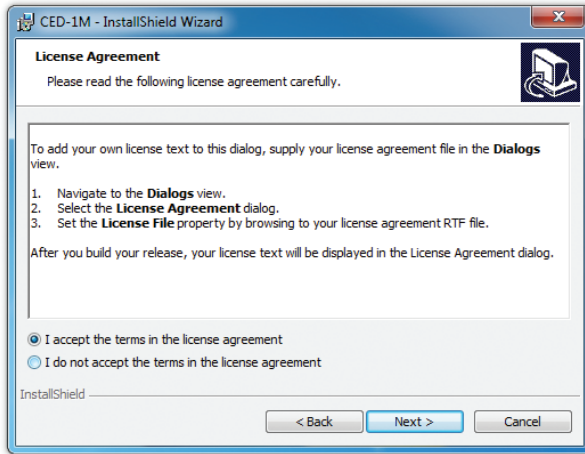
Once the software has extracted, enter the folder and double click on the 'setup' application icon (highlighted below) to begin the installation process.



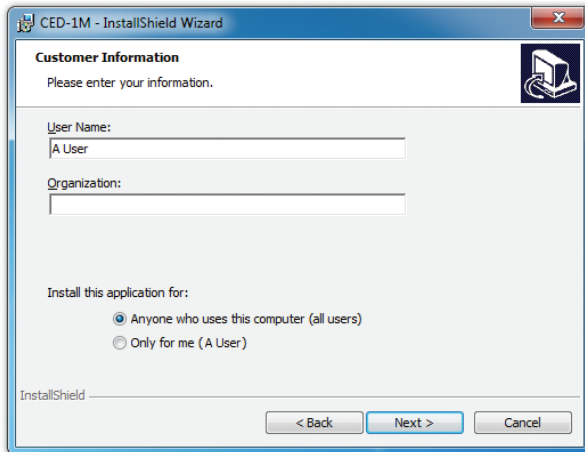
The installation wizard will appear, click 'Next' to continue the installation.



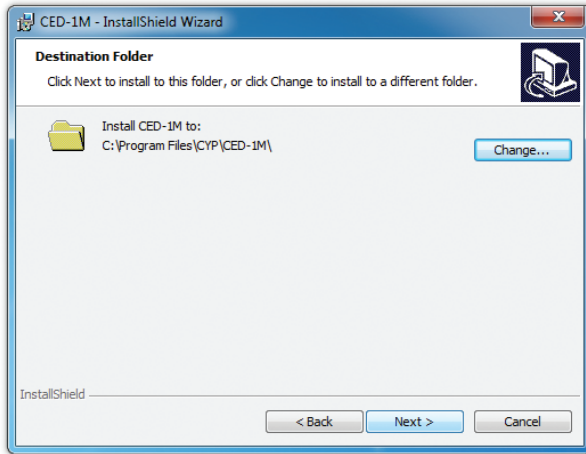
Click on 'I accept ...' and then 'Next' to accept the license terms to continue the installation.



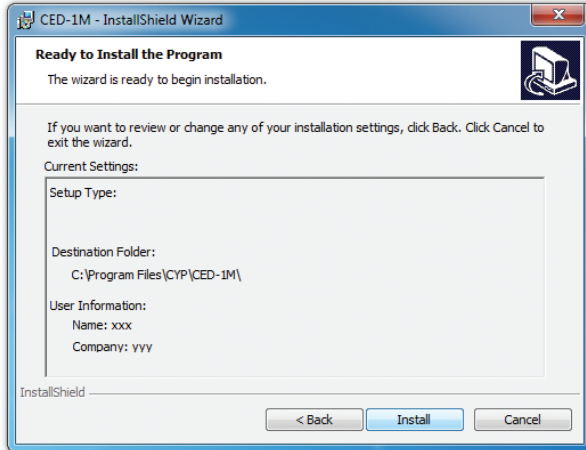
Insert the user name and set the access rights for this application as required and click on 'Next' to continue.



Choose a location to install the application, default is 'C:\Program Files\CYP\CED-1M'. Click on 'Next' to continue.

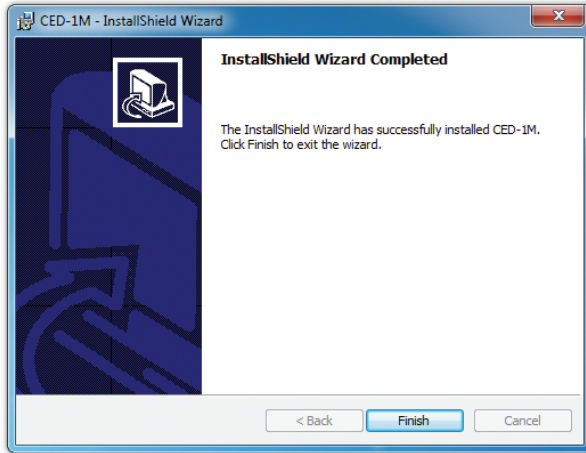


Click on 'Install' to confirm the user name and save location.





Click on 'Finish' to complete the installation.

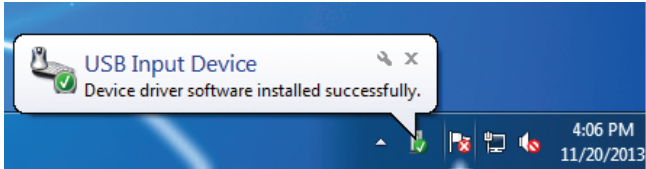


An icon will appear on the desktop to indicate the successful installation of the application.

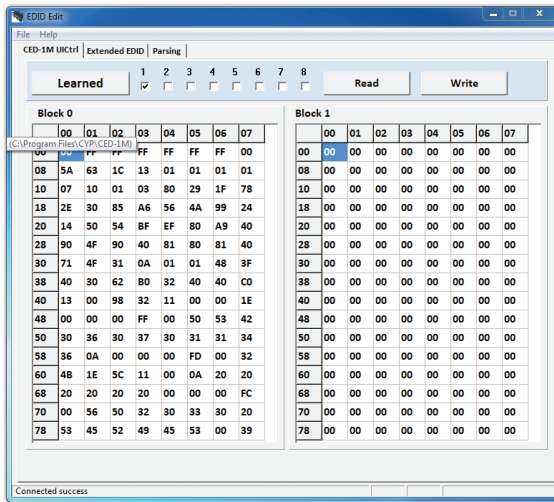


6.6 Using the EDID Application

Ensure that the HDMI EDID Emulator device is connected to the PC and that the driver has installed successfully before double clicking on the 'CED-1M' icon to start using the application.

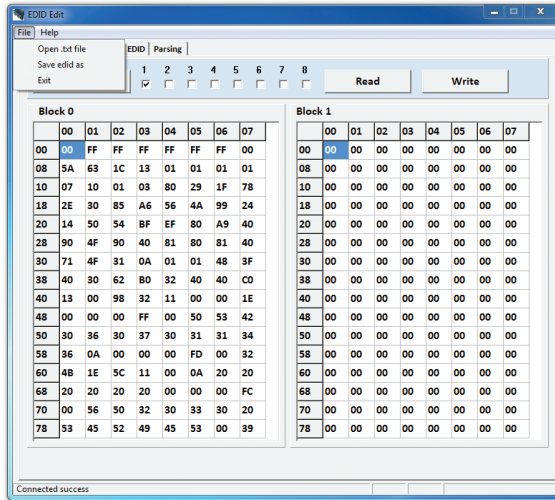


The EDID Application includes EDID Learning, Reading, Writing and Default settings.

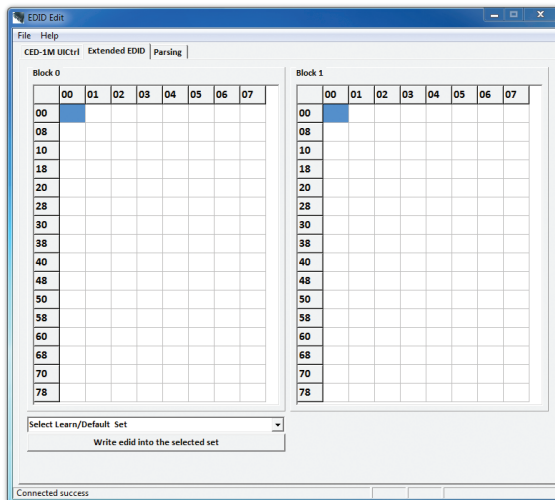




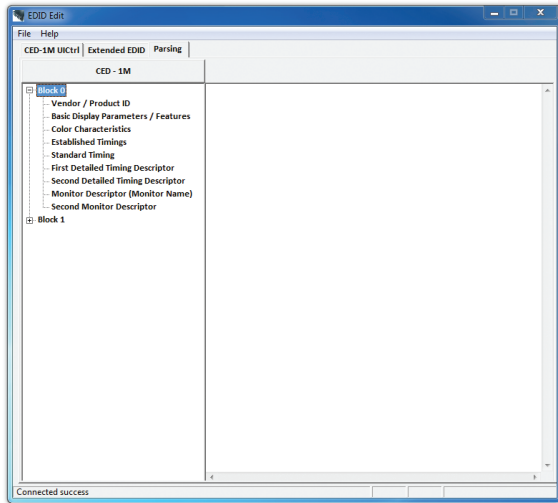
Click on 'File' to save the Learned and Default EDID settings (up to 8 sets each). Click on the 'Learned/Default' button to switch between modes.



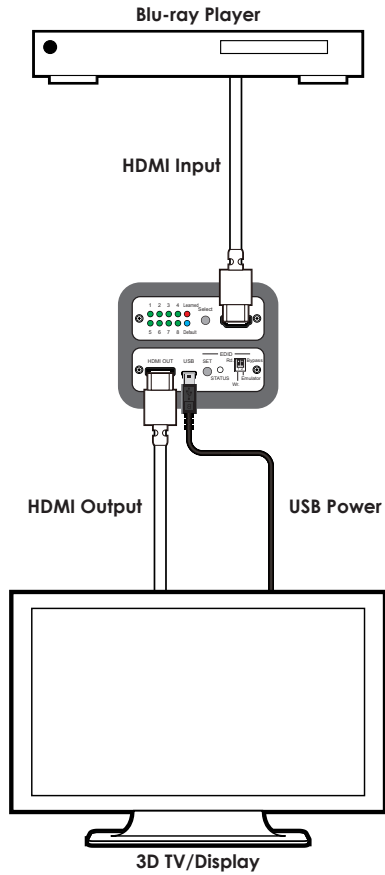
Click on 'Extended EDID' with File's 'Open .text file' to save the contents of the Learned EDID's amended contents.



Click on 'Parsing' to display the contents of EDID Block 0 and 1.



7. CONNECTION DIAGRAM



Note: In this example the unit is powered by a USB port on the TV/Display. It can also be powered by a compatible device that can provide power over HDMI.

8. SPECIFICATIONS

Video Bandwidth	300 Mbps/9 Gbps
Input Ports	1×HDMI, 1×Mini-USB (Power only)
Output Port	1×HDMI
HDMI Input Cable Distance	10m@1080p/12-bit, 5m@4K×2K
HDMI Output Cable Distance	10m@1080p/12-bit, 5m@4K×2K
Resolutions	Up to 4K×2K@24/25/30Hz
USB Power	5V/500mA
Dimensions	71 mm(W)×65mm(D)×23mm(H)/Exc. Jacks 71 mm(W)×71 mm(D)×23mm(H)/Inc. Jacks
Weight	108g
Chassis Material	Metal
Color	Black
ESD Protection	Human body model: ±8kV (air-gap discharge) ±4kV (contact discharge)
Operating Temperature	0 °C ~ 40 °C
Storage Temperature	-20 °C ~ 60 °C / -4 °F ~ 140 °F
Relative Humidity	20 ~ 90 % RH (non-condensing)
Power Consumption	2.5W



9. ACRONYMS

ACRONYM	COMPLETE TERM
4K×2K	Ultra HD (3840×2160/4096×2160)
CEC	Consumer Electronic Control
EDID	Extended Display Identification Data
HDMI	High-Definition Multimedia Interface



CYPRESS TECHNOLOGY CO., LTD
Home page: <http://www.cypress.com.tw>

MPM-CED1M