

DXE-122A DXE-142A

HDMI 4K60 HDMI 2.0A 18Gbps 1x2 and 1x4



SAFETY INSTRUCTIONS

Please review the following safety precautions. If this is the first time using this model, then read this manual before installing or using the product. If the product is not functioning properly, please contact your local dealer or Aurora for further instructions.



The lightning symbol in the triangle is used to alert you to the presence of dangerous voltage inside the product that may be sufficient to constitute a risk of electric shock to anyone opening the case. It is also used to indicate improper installation or handling of the product that could damage the electrical system in the product or in other equipment attached to the product.



The exclamation point in the triangle is used to alert you to important operating and maintenance instructions. Failure to follow these instructions could result in injury to you or damage to the product.



Be careful with electricity:

- **Power Outlet:** To prevent electric shock, be sure the electrical plug used on the product power cord matches the electrical outlet used to supply power to the Aurora product. Use the power adapter and power connection cables designed for this unit.
- **Power Cord:** Be sure the power cord is routed so that it will not be stepped on or pinched by heavy items.
- **Lightning:** For protection from lightning or when the product is left unattended for a long period, disconnect it from the power source.



Also follow these precautions:

- **Ventilation:** Do not block ventilation slots, if applicable, on the product, or place any heavy object on top of it. Blocking airflow could cause damage. Arrange components so that air can flow freely. Ensure that there is adequate ventilation if the product is placed in a stand or cabinet. Put the product in a properly ventilated area, away from direct sunlight or any source of heat.
- **Overheating:** Avoid stacking the Aurora product on top of a hot component, such as a power amplifier.
- **Risk of Fire:** Do not place unit on top of any easily combustible material, such as carpet or fabric.
- **Proper Connections:** Be sure all cables and equipment are connected to the unit as described in this manual.
- **Object Entry:** To avoid electric shock, never stick anything in the slots on the case, or remove the cover.
- **Water Exposure:** To reduce the risk of fire or electric shock, do not expose to rain or moisture.
- **Cleaning:** Do not use liquid or aerosol cleaners to clean this unit. Always unplug the power to the device before cleaning.
- **ESD:** Handle this unit with proper ESD care. Failure to do so can result in failure.

FCC

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two (2) conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.



Trademarks

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PACKAGE CONTENTS

Please make sure the following items are included within your package. Contact your dealer if any items are missing or damaged.

- DXE-122A or DXE-142A x 1
- Wall/Desk Mount Ears with Screws x 4
- Plastic cushions x 4
- 5v 1A DC Power Adapter x 1

***Note:** Go to www.auroramm.com for latest manual and firmware.

INTRODUCTION

About

The DXE-122A 1x2 HDMI and DXE-142A 1x4 HDMI 2.0A 4K Splitters with Auto EDID Management provides one of the most advanced HDMI splitter solutions by which the Ultra High Definition video and high quality audio can be transmitted to multiple locations without losing quality. The DXE-122A and DXE-142A support all 3D formats and true 4K2K video. EDID management can be one of the most important capabilities to a splitter. Taking it one step further Aurora has added the ability to customize EDID for complete EDID emulation. This allows full control over the source and what it will be allowed to do.

The DXE splitters have firmware upgrade capability via the USB port ensures compatibility now and in the future. With 48bit deep color video and high definition audio support, the DXE-122A and DXE-142A are suitable for high quality HDMI broadcasting, conference room, digital signage and education applications.

Features

- ◆ Supports HDMI 2.0A Deep Color and 3D/DVI 1.0 Compliant
- ◆ HDCP 1.4/2.2 Compliant
- ◆ Wide Frequency Range: 25MHz~600MHz
- ◆ Video Bandwidth: 18Gbps
- ◆ Resolution up to 4K2K at 60Hz
- ◆ Auto EDID Management
- ◆ EDID Emulation and Customizable EDID
- ◆ Supports xvYCC, x.v. Color and Deep Color
- ◆ Mini-USB Port for Firmware Updating and EDID Setup
- ◆ Supports Dolby Digital, DTS-HD, and Dolby TrueHD Audio
- ◆ HDMI and Power Connectors on Same Side for Easy Installation
- ◆ Ultra-Low Profile to Fit Behind Displays



****Note: Refer to Technical Specifications section.***

Front and Rear Panel



Front

- **Power Indicator:** Illuminate red once powered on.
- **Input HDCP Complaint Indicator:** Indicates the HDCP compliant status of the input signal.
 - Illuminate green when the input signal is HDCP.
 - Blink green when the input signal is not HDCP.
 - Remain off when there is no input signal.
- **Output Signal Indicators:** Illuminates green when there is an HDMI output corresponding to the HDMI Outputs.
- **Firmware:** Output HDCP compliant status depends on input signal. When the input signal is with HDCP, then output signal is with HDCP and vice versa.

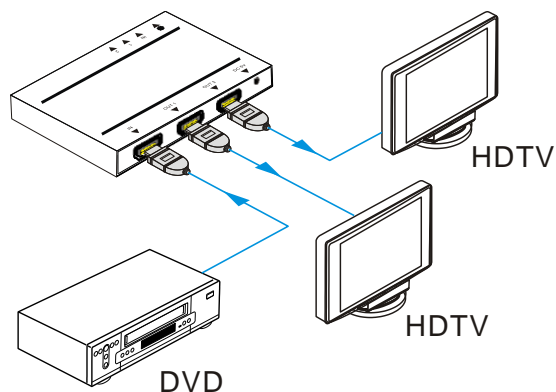
****Note: Make certain you have the latest firmware for optimal performance and features listed in manual.***

Rear

- **IN:** HDMI input port to connect with HDMI or DVI source device such as laptop or Blu-ray.
- **OUT:** HDMI output ports, connect to HDMI displays, automatically capture the input resolution.
- **DC 5V:** Power connector for the DC 5V power adapter.

SYSTEM CONNECTION

The following diagram illustrates typical input and output connections that can be utilized with 4K HDMI Splitter:



Connection Procedures

- Step 1** Connect a HDMI/ DVI source device (e.g., Blue-ray DVD) to the HDMI INPUT of the 4K HDMI Splitter with an HDMI cable.
- Step 2** Connect HDMI display(s) to HDMI OUTPUT(S) of the 4K HDMI Splitter with an HDMI cable.
- Step 3** Plug the DC 5V power adapter to the power connector of the 4K HDMI Splitter.

****Note: All the ports support hot-plug. It is important to know that hot plugging a display may result in a quick noise shown on the display(s).***

EDID MANAGEMENT

The EDID management helps distributing and routing signals from the source at the resolution of the first detected display. The display connected to output 1 will be the EDID that is utilized for the input to the source. It will only do this once at power on or until input 1 is connected for the first time after power on. If a different output device is swapped with port 1 then a power recycle may be necessary to acquire the new EDID.

For example, when output 1 connects with a 1080p display, the Splitter will select 1080p as output resolution and distribute 1080p signal to displays connected to output 1~2 as a result of the source using the EDID.

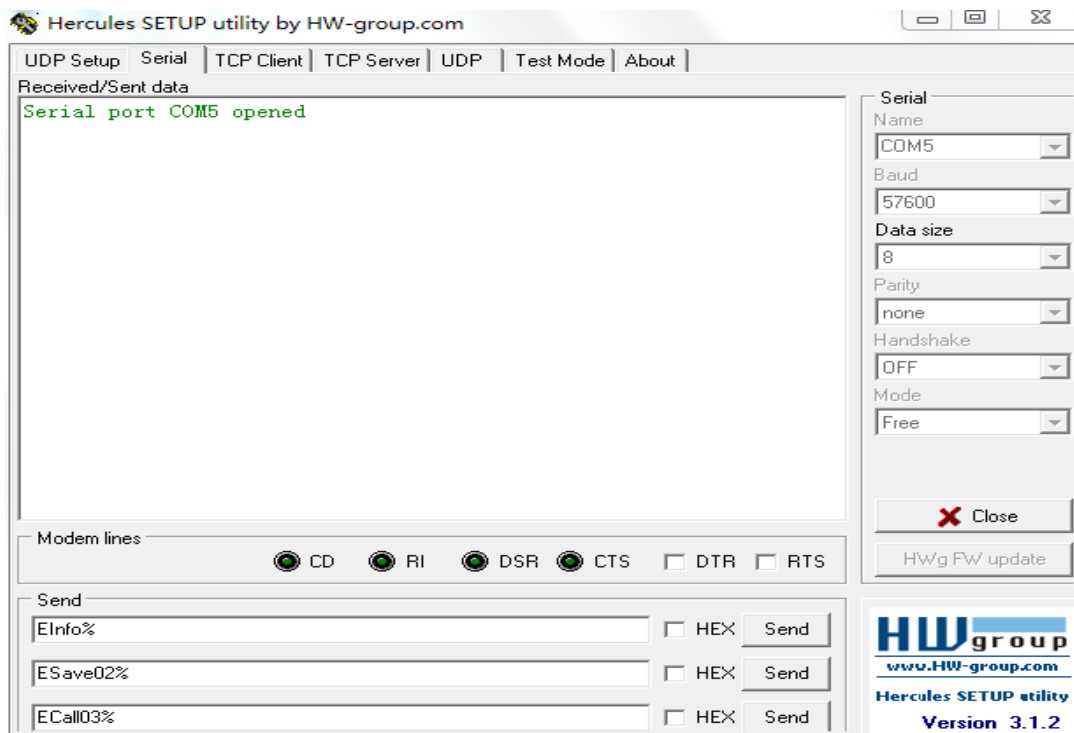
***Note: If the display connected to output 2 does not support 1080p signal, there will be no output on the display.**

EDID Setup

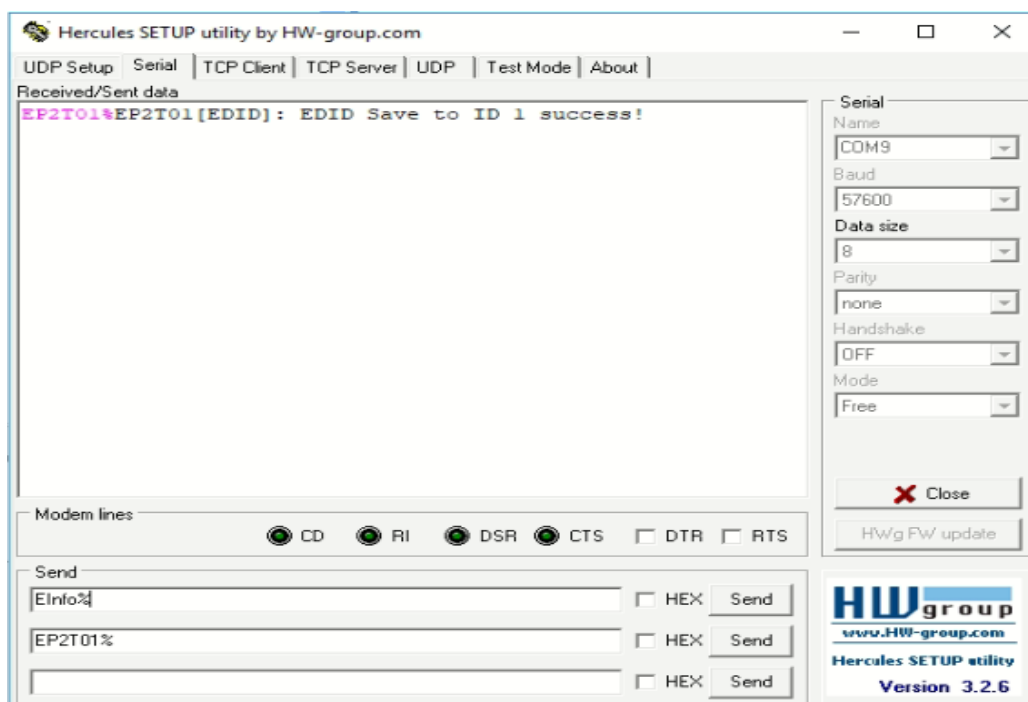
Below are the commands available to manage the EDID capabilities. The EDID can be downloaded, uploaded, set to a built in stored default (10 locations), and viewed.

Connect the splitter's min USB to PC via USB cable.

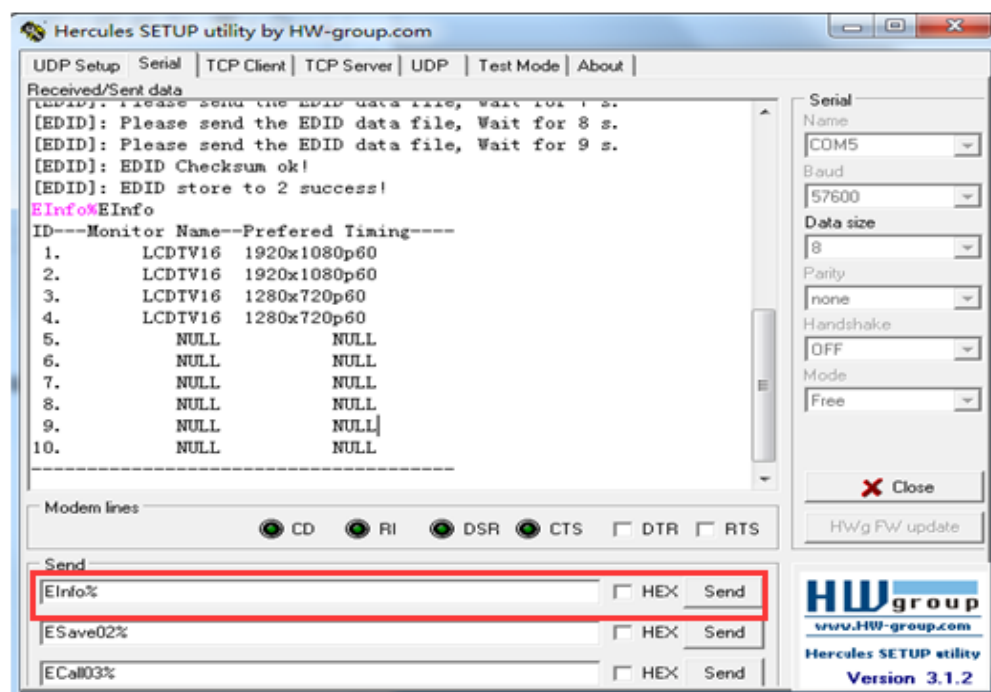
Execute Hercules, choose the right COM port, Baud rate is 57600:



Send **EPxTx%**, to store output x(1 to 4) 's EDID to xx(xx=01-10):



Send **EInfo%** to query the current stored EDID information. Null means no upload any EDID:



Send **ECall** + **ID(00 to 10)%** to choose the EDID. When 00 was selected, means to restore factory default **without** clear all the uploaded EDID information:

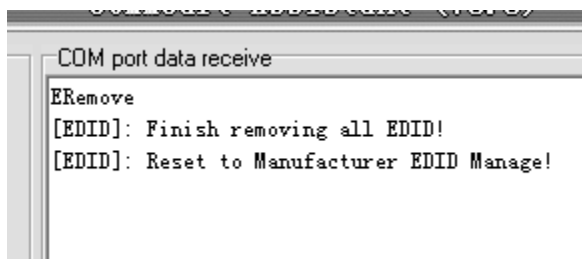
```
ECall105
[EDID]: ID 5 as default EDID!

System use EDID:-----
ID---Monitor Name--Preferred Timing---
5.      LCDTV16  3840x2160p30
-----
```

Send **EState%** to check which EDID was used currently:

```
EState
System use EDID:-----
ID---Monitor Name--Preferred Timing---
5.      LCDTV16  3840x2160p30
-----
```

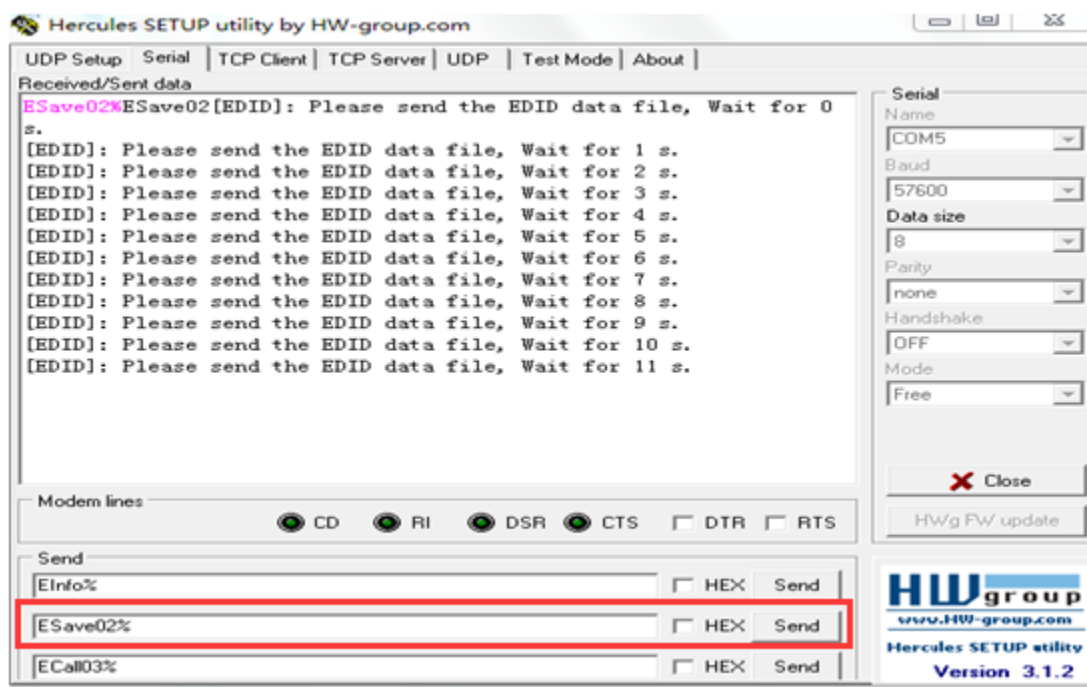
Send **ERemove%** to clear all the stored EDID and reset to manufacturer EDID manage:



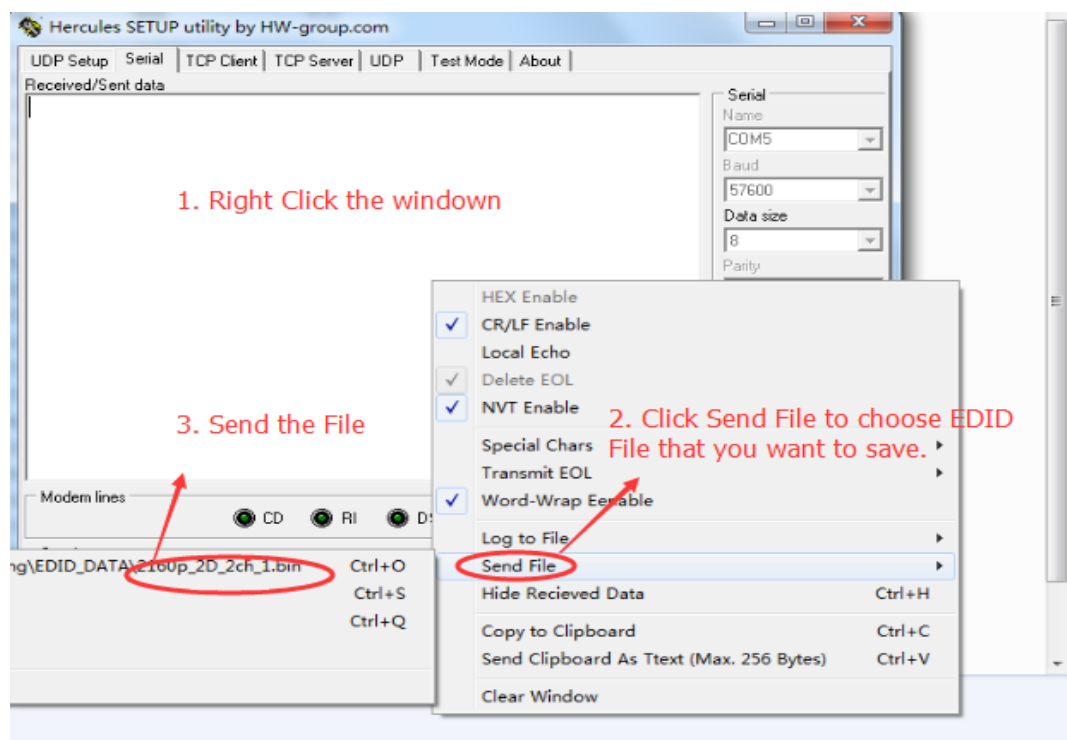
```
COM port data receive
ERemove
[EDID]: Finish removing all EDID!
[EDID]: Reset to Manufacturer EDID Manage!
```

EDID Setup/Custom EDID

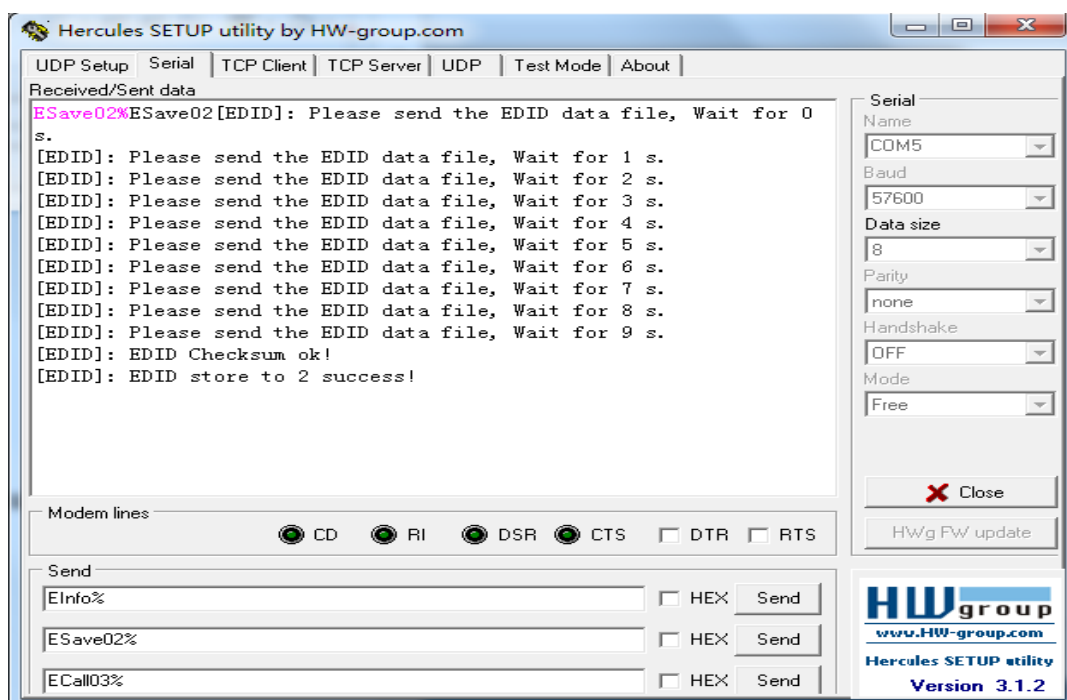
Send **ESave** + **ID(01 to 10) %**, to upload customized EDID:



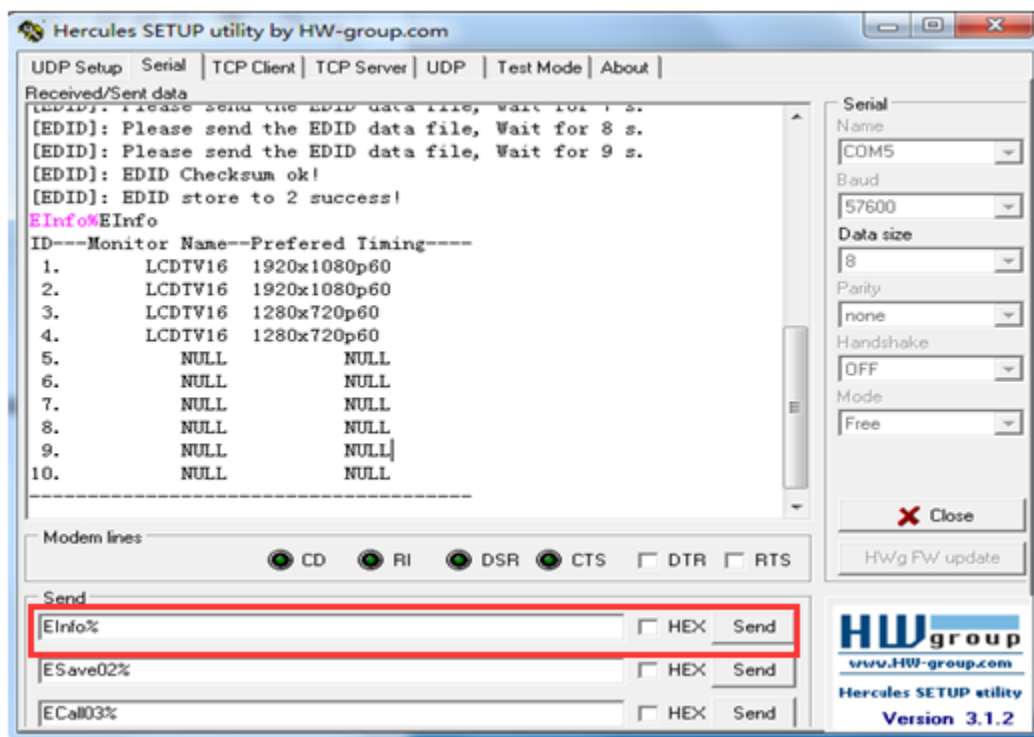
Choose the customized EDID files (.bin format) and upload steps as follows:



System feedback:



Send **EInfo%** to query the current stored EDID information. Null means no upload any EDID:



Send **ECall** + **ID(00 to 10)%** to choose the EDID. When 00 was selected, means to restore factory default **without** clear all the uploaded EDID information.

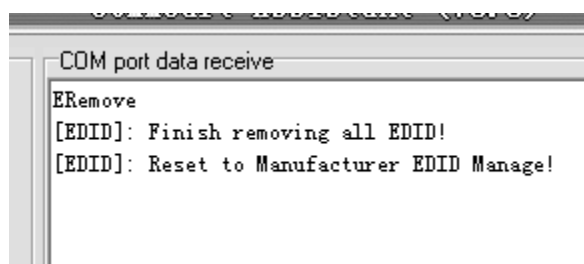
```
ECall105
[EDID]: ID 5 as default EDID!

System use EDID:-----
ID---Monitor Name--Prefered Timing---
5.      LCDTV16  3840x2160p30
-----
```

Send **EState%** to check which EDID was used currently:

```
EState
System use EDID:-----
ID---Monitor Name--Prefered Timing---
5.      LCDTV16  3840x2160p30
-----
```

Send **ERemove%** to clear all the stored EDID and reset to manufacturer EDID manage:

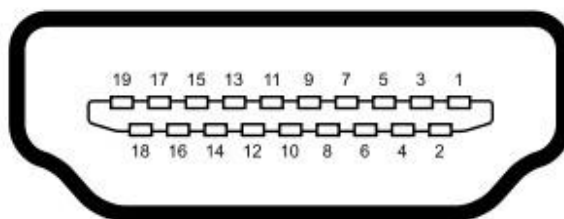


```
COM port data receive
ERemove
[EDID]: Finish removing all EDID!
[EDID]: Reset to Manufacturer EDID Manage!
```

Send **ERemove** EPxTxx% to store output x (1 to 4)'s EDID to xx (xx=01~10).

CONNECTOR PIN DEFINITION

HDMI

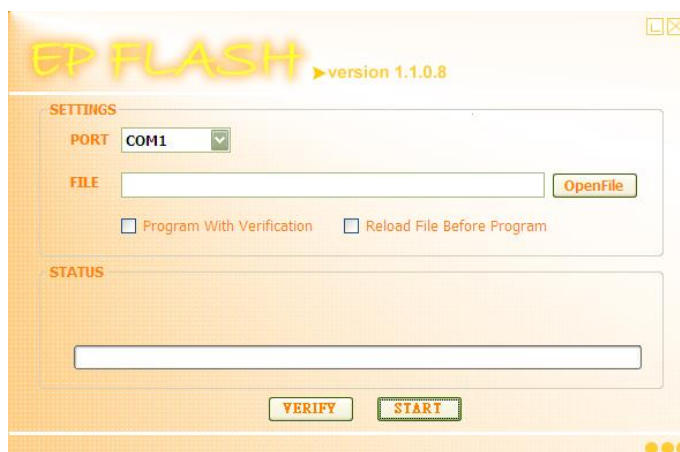


Type A (Receptacle) HDMI

Pin 1	TMDS Data2+	Pin 8	TMDS Data0 Shield	Pin 15	SCL
Pin 2	TMDS Data2 Shield	Pin 9	TMDS Data0–	Pin 16	SDA
Pin 3	TMDS Data2–	Pin 10	TMDS Clock+	Pin 17	DDC/CEC Ground
Pin 4	TMDS Data1+	Pin 11	TMDS Clock Shield	Pin 18	+5 V Power
Pin 5	TMDS Data1 Shield	Pin 12	TMDS Clock–	Pin 19	Hot Plug Detect
Pin 6	TMDS Data1–	Pin 13	CEC		
Pin 7	TMDS Data0+	Pin 14	Reserved (N.C. on device)		

FIRMWARE UPDATING

- Step 1** Copy the latest upgrade file (.hex) to PC.
- Step 2** Connect the USB port of the Splitter to the PC via USB cable.
- Step 3** Launch the firmware update utility software by double-clicking the icon of EPFlash.exe.



- Step 4** Select the correct port number in the dropdown list labeled PORT, and click **OpenFile** to load the upgrade file. Click **Start** to begin firmware upgrading.

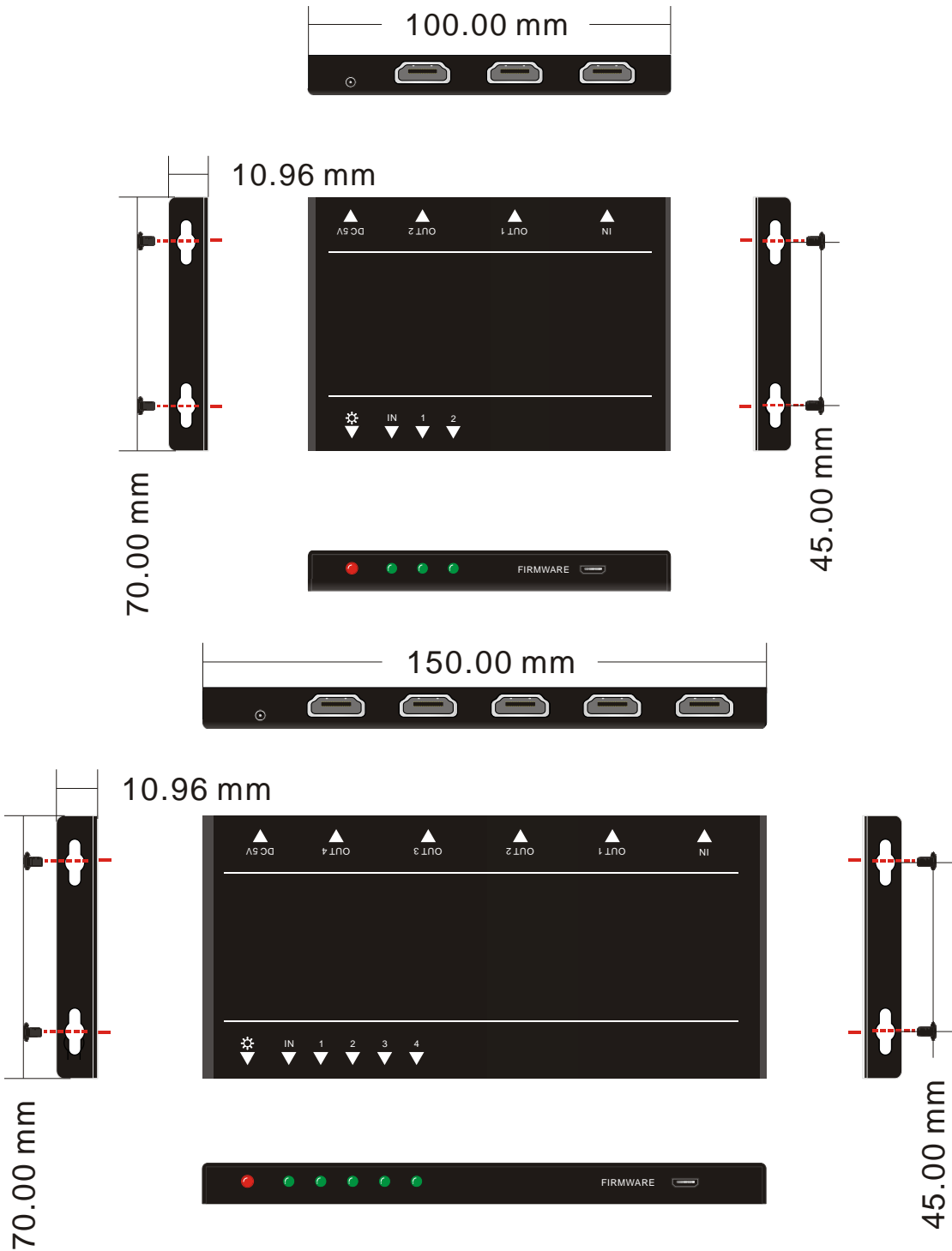
APPENDIX 1

Troubleshooting

Problem	Solution
1. No video signal	<ul style="list-style-type: none"> a. Check that the power plug is properly inserted into a functioning power outlet. b. Make certain source is on. c. Make certain destination is on. d. Swap out HDMI cable. e. Make certain HDMI cable is properly rated for the resolution vs the length of the cable. f. Make certain the display can handle the resolution of the EDID learned for the display on output 1.
2. No audio	<ul style="list-style-type: none"> a. If the display on output 1 is Dolby capable and the display having audio issue does not this will cause the issue. Put display with common denominator (least capability) on output 1 and recycle power to the splitter.
3. LED is not lit	<ul style="list-style-type: none"> a. Check 5v power supply is plugged in. b. Check to see if Wall supply is plugged into wall outlet. c. Make certain wall outlet has power.
4. EDID did not take	<ul style="list-style-type: none"> a. Recycle power to source device or unplug and make certain display is connected to output 1.

APPENDIX 2

Product Dimension Drawing



APPENDIX 3

Technical Specifications

Model Name	DXE-122A/DXE-142A
Technical	
HDMI/DVI Compliance	HDMI 2.0A Deep Color, full 3D & 4K2K/ DVI 1.0
HDCP Compliance	HDCP 1.4/2.2
Video Bandwidth	Single-link 600MHz [18Gbps]
Video Support	Up to 4K2K @60
HDMI Output Distance	720p 12bit up to 20m, 1080i 12bit up to 20m, 1080p 12bit up to 15m, 4K up to 7.5m *Note: Cable quality may impact distance.
Audio Support	DTS-HD Master Audio, Dolby TrueHD Dolby Digital, DTS, DVD-Audio, LPCM, SACD, MPCM
Firmware Update	Mini-USB port
Input	1x HDMI
Output	2x HDMI (DXE-122A)/4x HDMI (DXE-142A)
EDID	Audio Management
Mechanical	
Housing	Metal Enclosure
Dimensions [L x W x H]	DXE-12H-4K: 100 x 70 x 11mm (3.94"x2.76"x0.433") DXE-14H-4K: 150 x 70 x 11mm (5.91"x2.76"x0.433")
Weight	DXE-12H-4K: 0.08kg (2.82oz) DXE-14H-4K: 0.12kg (4.23oz)
Mounting	Attachable ears
Power supply	5V 1A DC
Power consumption	3.6 Watts [max]
Operation temperature	0~55°C
Storage temperature	-20~60°C [-4~140°F]
Relative humidity	10~90% RH [no condensation]

***Note: Specifications subject to change without notice.**

APPENDIX 4

Cabling

Always make certain the quality of the HDMI cable is to specification for the distance and bandwidth you are using. Failure to use proper HDMI cabling will result in loss of signal or artifacts in the image. HDMI 2.0A requires cable capable of 18Gbps.

Aurora manufactures HDMI 2.0A cables in a variety of different colors which are highly flexible, light weight and durable. These cables are also available in a variety of lengths and can be found on the Aurora website www.auroramm.com.

APPENDIX 5

Warranty

Limited 3 Year Warranty

Aurora Multimedia Corporation ("Manufacturer") warrants that this product is free of defects in both materials and workmanship for a period of 3 years as defined herein for parts and labor from date of purchase. This Limited Warranty covers products purchased in the year of 2009 and after. Motorized mechanical parts (Hard Drives, DVD, etc.), mechanical parts (buttons, doors, etc.), remotes and cables are covered for a period of 1 year. Touch screen displays are covered for 1 year; touch screen overlay components are covered for 90 days. Supplied batteries are not covered by this warranty. During the warranty period, and upon proof of purchase, the product will be repaired or replaced (with same or similar model) at our option without charge for parts or labor for the specified product lifetime warranty period.

This warranty shall not apply if any of the following:

- A. The product has been damaged by negligence, accident, lightning, water, act-of-God or mishandling; or,
- B. The product has not been operated in accordance with procedures specified in operating instructions; or,
- C. The product has been repaired and or altered by other than manufacturer or authorized service center; or,
- D. The product's original serial number has been modified or removed; or,
- E. External equipment other than supplied by manufacturer, in determination of manufacturer, shall have affected the performance, safety or reliability of the product; or,
- F. Part(s) are no longer available for product.

In the event that the product needs repair or replacement during the specified warranty period, product should be shipped back to Manufacturer at Purchaser's expense. Repaired or replaced product shall be returned to Purchaser by standard shipping methods at Manufacturer's discretion. Express shipping will be at the expense of the Purchaser. If Purchaser resides outside the contiguous US, return shipping shall be at Purchaser's expense.

No other warranty, express or implied other than Manufacturer's shall apply.

Manufacturer does not assume any responsibility for consequential damages, expenses or loss of revenue or property, inconvenience or interruption in operation experienced by the customer due to a malfunction of the purchased equipment. No warranty service performed on any product shall extend the applicable warranty period. This warranty does not cover damage to the equipment during shipping and Manufacturer assumes no responsibility for such damage. This product warranty extends to the original purchaser only and will be null and void upon any assignment or transfer.



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