



**600 MHz**  
**4K ULTRA HD**

**1:2 Splitter for HDMI w/HDR**

EXT-UHD600-12

User Manual



Release A2

# Important Safety Instructions

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this product near water.
6. Clean only with a dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install or place this product near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. To reduce the risk of electric shock and/or damage to this product, never handle or touch this unit or power cord if your hands are wet or damp. Do not expose this product to rain or moisture.
13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
15. Batteries that may be included with this product and/or accessories should never be exposed to open flame or excessive heat. Always dispose of used batteries according to the instructions.

# Warranty Information

For the latest warranty coverage information, refer to the Warranty and Return Policy under the Connect section of the Gefen website at <http://www.gefen.com/connect/warranty-and-return-policy>

The information in this manual has been carefully checked and is believed to be accurate. However, Gefen assumes no responsibility for any inaccuracies that may be contained in this manual. In no event will Gefen be liable for direct, indirect, special, incidental, or consequential damages resulting from any defect or omission in this manual, even if advised of the possibility of such damages. The technical information contained herein regarding the features and specifications is subject to change without notice.

This product uses software that is subject to open source licenses, including one or more of the General Public License Version 2 and Version 2.1, Lesser General Public License Version 2.1 and Version 3, BSD, and BSD-style licenses. Distribution and use of this product is subject to the license terms and limitations of liability provided in those licenses. Specific license terms and Copyright Notifications are provided in the source code.

For three years from date of activation of this product, any party may request, and we will supply, for software covered by an applicable license (e.g. GPL or LGPL), a complete machine-readable copy of the corresponding open source code on a medium customarily used for software interchange. The following software and libraries are included with this product and subject to their respective open source licenses:

- jQuery
- Linux

## Technical Support

707-283-5900    800-472-5555  
8:00 AM to 5:00 PM Monday - Friday, Pacific Time

## Email

[support@gefen.com](mailto:support@gefen.com)

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<http://www.gefen.com>

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c/o Customer Service  
1800 S McDowell Blvd  
Petaluma, CA 94954 USA

- The Gefen Syner-G Software Suite is a free downloadable application from Gefen that provides a variety of useful tools, including automatic download and installation of firmware upgrades for this product. Always make sure that this product is running the latest firmware.



## Important

Cable quality is critical when handling 600 MHz HDMI signals. It is highly recommend that Gefen Locking HDMI cables be used in the installation. Gefen HDMI cables have been designed and tested to work at 600 MHz and reliably transport the full 18 Gbps throughput of HDMI 2.0.

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Gefen, LLC reserves the right to make changes in the hardware, packaging, and any accompanying documentation without prior written notice.



This product uses UL-Listed power supplies



# Features and Packing List

## Features

- Simultaneously displays an Ultra Hi-Def source on up to two Ultra HD displays
- Specifically designed to support multiple layers of splitting/cascading in large video distribution and signage applications, supporting hundreds of displays
- Supports resolutions up to 4K DCI-Cinema (4096 x 2160 at 60 Hz, 4:4:4 color space), 4K Ultra HD (3860 x 2160 at 60Hz, 4:4:4 color space), 1080p Full HD, and 1920x1200 WUXGA
- Supports HDR (High Dynamic Range) 10-bit Deep Color at 4K 4:4:4
- Supports 12-bit Deep Color at 1080p 4:4:4
- 3DTV pass-through
- Lip Sync pass-through
- EDID Management and Audio Mode selectors for rapid integration of source and displays
- Supports LPCM 7.1, Dolby Atmos®, Dolby® TrueHD, DTS:X™, and DTS-HD Master Audio™
- Supports the use of DVI sources and DVI displays with HDMI-to-DVI adapters (not included)
- Advanced EDID Management via USB, using the Gefen Syner-G™ software
- In-field firmware update via USB, using the Gefen Syner-G™ software
- Long Reach Power (LRP) provides 500 mA at 5V on pin 18 of HDMI outputs 1 and 2. Enables select extender devices to be powered through their HDMI input port.
- Locking power connector
- Low-profile, surface-mountable enclosure



## Packing List

The Ultra HD 600 MHz 1:2 Splitter for HDMI w/ HDR ships with the items listed below. The packing contents of the Sender and Receiver unit are listed below. If any of these items are not present in the box when you first open it, immediately contact your dealer or Gefen.

- 1 x Ultra HD 600 MHz 1:2 Splitter for HDMI w/ HDR
- 1 x 6 ft locking HDMI cable (CAB-HD-LCK-06MM)
- 1 x 5V Power Supply w US/EU/UK/AU plugs (EXT-PS526AIP-LP-6)
- 2 x Surface Mounting L-Brackets
- 4 x M3 6 mm machine screws for mounting the L-Brackets to unit
- 2 x 6-32 5 mm machine screws for mounting the unit to EXT-RACK-1U-GRY (available separately)
- 4 x Self-Adhesive Rubber Feet
- 1 x Quick-Start Guide



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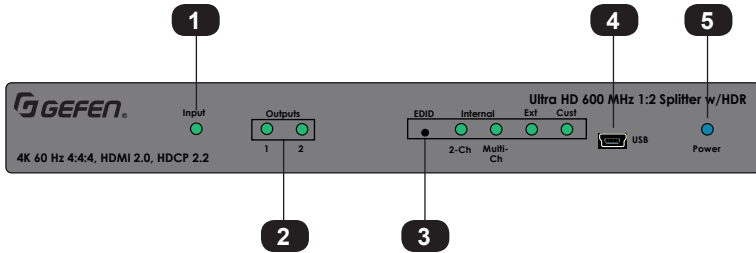
**600 MHz**  
**4K ULTRA** 

1:2 Splitter for HDMI w/HDR

1

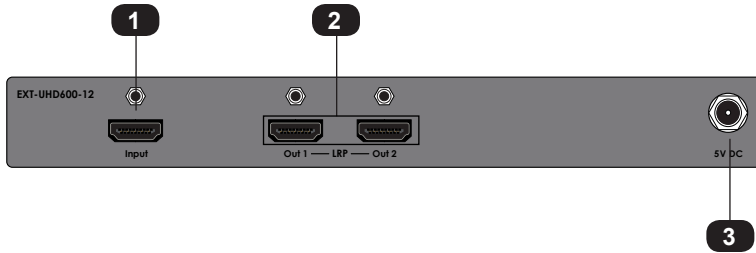
Getting Started

## Front Panel



ID	Name	Description
1	Input	This LED glows solid green when the unit is connected to an AC outlet and an HDMI source is connected to the input port.
2	Outputs	Each of these LED indicators will glow solid green when a display is powered and connected to the associated output port. See <a href="#">Output LED Status (page 9)</a> for more information.
3	EDID	Press this button, using the end of a paper clip or other sharp object, to select the EDID mode. The LED indicators will display the current EDID mode. See <a href="#">EDID Management (page 8)</a> for more information.
4	USB	This mini-USB port is used for Syner-G™ support. See <a href="#">Using Syner-G™ (page 12)</a> for more information.
5	Power	This LED indicator will glow bright blue when the included 5V DC power supply is connected from the splitter to an available electrical outlet.

## Rear Panel



ID	Name	Description
1	Input	Connect a locking HDMI cable from an Ultra HD source to this port.
2	Out 1, Out 2	Connect locking HDMI cables to connect up to two Ultra HD displays to these ports.
3	5V DC	Connect the included locking 5V DC power supply to this power receptacle.

## Connection Instructions

### ▶ Video

1. Use the included locking HDMI cable to connect an Ultra HD source to the **Input** port on the rear panel of the splitter.
2. Connect locking HDMI cables (not included), to the Out 1 and Out 2 ports on the rear panel of the splitter. The HDMI cables can then be connected in any of the following ways:
  - Connect the HDMI cables to Ultra HD displays.
  - Connect the HDMI cables to additional EXT-UHD600 Splitters for cascading purposes.
  - Connect one of the HDMI cables to an Ultra HD display and the other cable to another EXT-UHD600 Splitter.



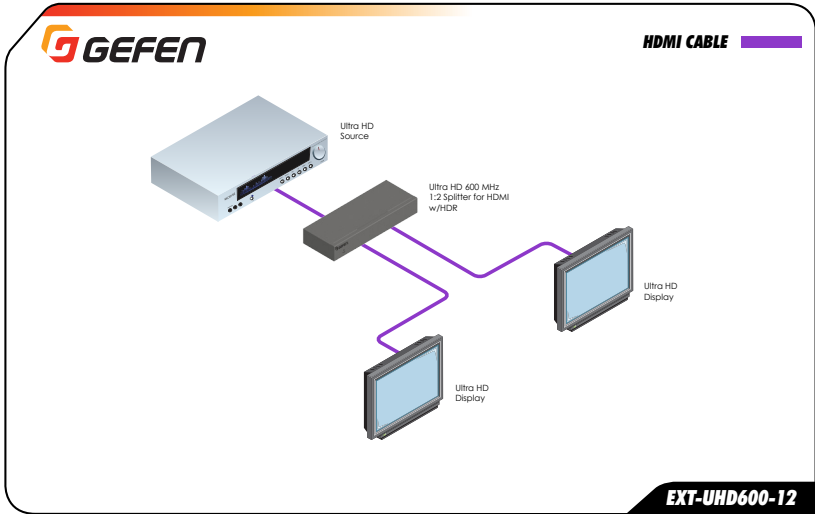
### Important

Cable quality is critical when handling 600 MHz HDMI signals. We highly recommend Gefen Locking HDMI cables. They have been designed and tested to work at 600 MHz and reliably transport the full 18 Gbps throughput of HDMI 2.0.

### ▶ Power

3. Connect the included 5V DC locking power supply to the **5V DC** power receptacle on the rear panel of the splitter.
4. Connect the power supply to an available electrical outlet.

## Sample Application Diagram



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**600 MHz**  
**4K ULTRA** 

1:2 Splitter for HDMI w/HDR

**2** Basic Operation

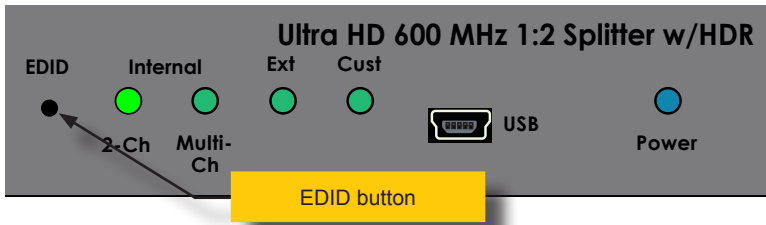
The Ultra HD 600 MHz 1:2 Splitter for HDMI w/ HDR features EDID Management. The splitter can use either the downstream EDID (from the display/sink), the built-in internal EDID, or a custom EDID setting. Additional EDID modes are available when controlling the splitter using the Gefen Syner-G Software Suite. See [Setting the EDID Mode \(page 14\)](#) for more information.

## EDID Modes

To select between different EDID modes, press and release the recessed EDID button on the front panel, using the end of a paper clip or other sharp object.

### ► Internal (2-ch / Multi-Ch)

Use this EDID mode if problems are encountered when using the external EDID. The built-in internal EDID provides the source device with a “generic” EDID which can be used by all display (sink) devices. When the Internal EDID mode is being used, the audio output format can be set to either **2-Ch** or **Multi-Ch**. Additional internal EDID modes are available using Syner-G. See [Setting the EDID Mode \(page 14\)](#) for more information.



### Supported Audio Formats

LPCM 2-channel*	LPCM 8-channel
Dolby® Digital	Dolby® Digital Plus
Dolby® TrueHD	DTS:X™
DTS-HD Master Audio™	MLP (PPCM)

\* When set to Internal 2-ch, only LPCM is supported.

### ► Ext

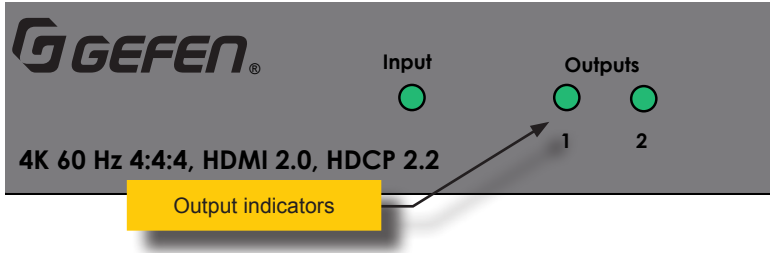
When set to **Ext** mode, EDID data will be fetched from each display (or other sink device) that is connected to the outputs of the splitter. Once this information is gathered, the splitter “builds” an EDID based on the highest video and audio formats that are supported by all sink devices. This EDID is then transmitted to the source device.




### ► Cust

Use this EDID mode when using EDID functions within the Syner-G software application. See [Setting the EDID Mode \(page 14\)](#) for more information.

# Output LED Status

The output LED indicators provide status information for each display that is connected to the splitter.



Status	Description
Green 	<ul style="list-style-type: none"><li>Power connected to display.</li></ul>
Off 	<ul style="list-style-type: none"><li>No power supplied to the display.</li><li>Make sure the power supply is connected to the display.</li><li>Make sure that the outlet is "live".</li></ul>
Amber 	<ul style="list-style-type: none"><li>Handshake error or HDCP failure.</li></ul>

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**600 MHz**  
**4K ULTRA** 

**1:2 Splitter for HDMI w/HDR**

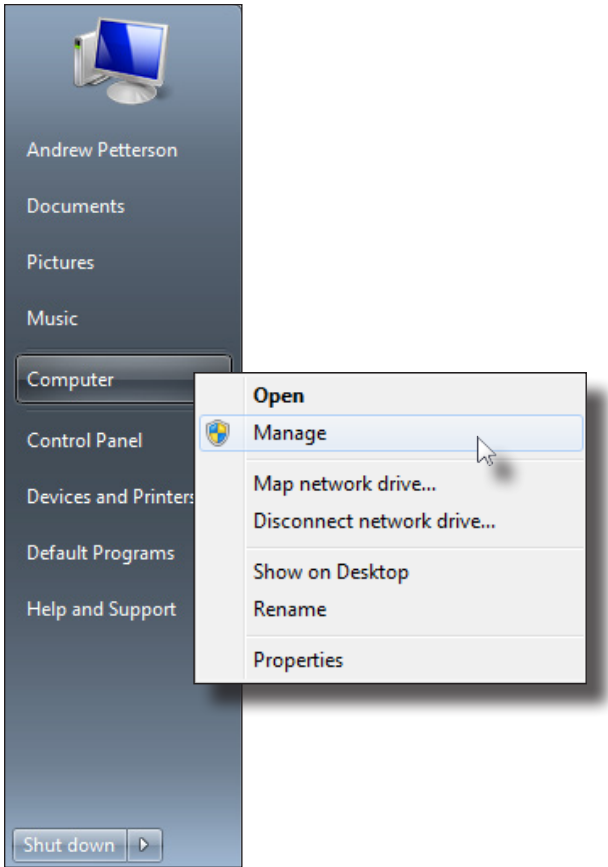
**3**

**Advanced Operation**

## Verifying the USB Driver

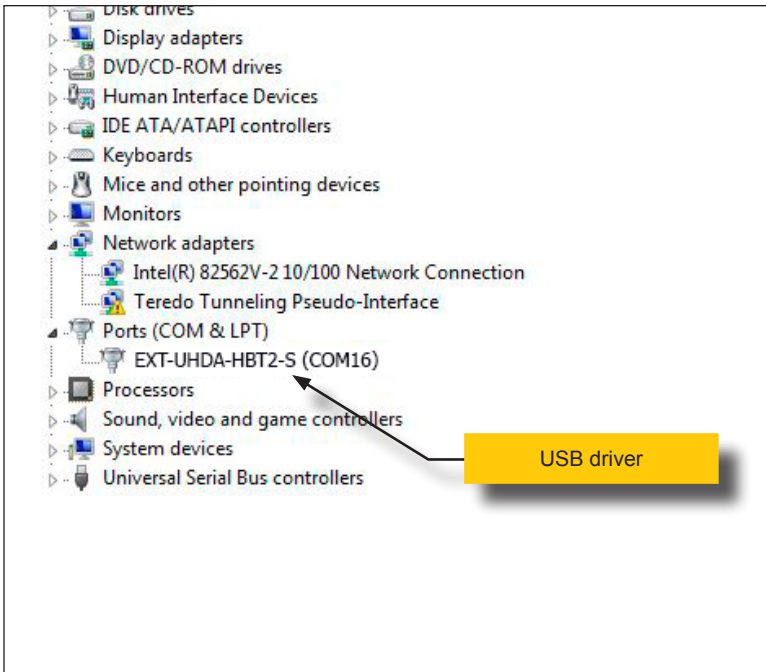
In order to use this product with the Gefen Syner-G™ software, a USB driver must be installed on the computer that is running the Syner-G™ software. This driver is automatically installed when the Syner-G™ Software Suite is installed.

1. Download and install the Gefen Syner-G™ Software Suite. The Syner-G™ software can be downloaded here: <http://www.gefen.com/synerg/>
2. Connect a mini-USB-to-USB cable (not included) from the **USB** port on the front of the Sender or Receiver unit to an available USB port on the computer.
3. From the Windows Desktop, click the **Start** button, select **Computer**, then right-click and select **Manage** from the context menu.



4. The **Computer Management** window will open.
5. In the left window pane, under **System Tools**, click **Device Manager**.
6. In the right window pane, locate **Ports (COM & LPT)**.

The device driver will be displayed. If the USB cable is connected to the splitter, the device driver will be EXT-USB600-12.



## Setting the EDID Mode

1. Click the **Manage a Product** button and select the connected product from the drop-down list.
2. Click the **Manage EDID** tab.
3. Information about the currently selected device will be displayed in the **Version Info** field.
4. Click the desired mode under the **EDID Mode** section.



EDID	Description
Internal - UHD 600 4K 2CH	4K Ultra HD with 2-channel audio
Internal - UHD 600 4K MULTICH	4K Ultra HD with multichannel audio
Custom - UHD 300 4K 2CH	4K Ultra HD 4:2:0 with 2-channel audio
Custom - UHD 300 4K MULTICH	4K Ultra HD 4:2:0 with multichannel audio
Custom - 1080P 2CH	1080p with 2-channel audio
Custom - 1080P MULTICH	1080p with multichannel audio
Custom - USER	Uses a custom EDID
External	Uses EDID of downstream sink



### Information

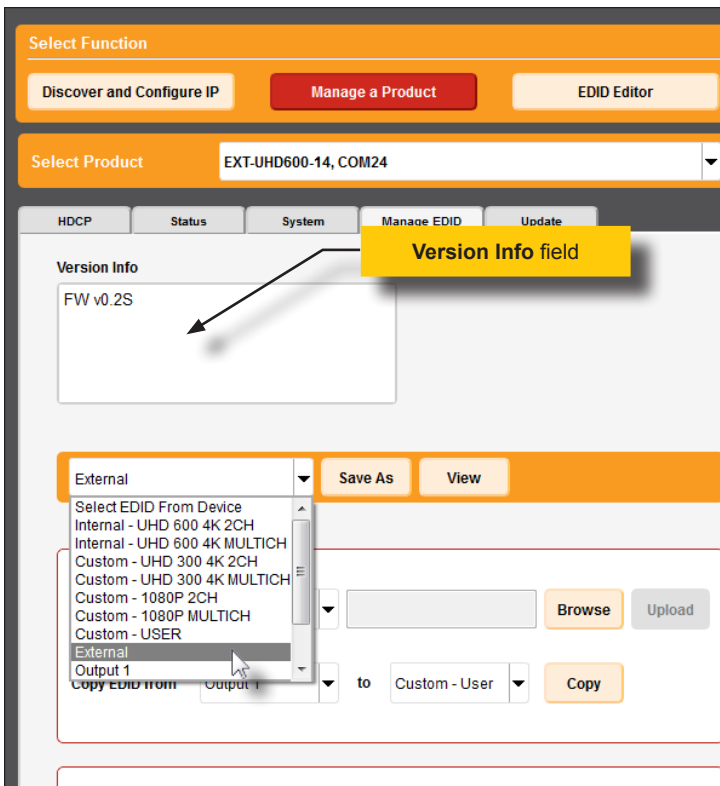
600 MHz EDID settings (e.g. UHD 600) provide HDR support.



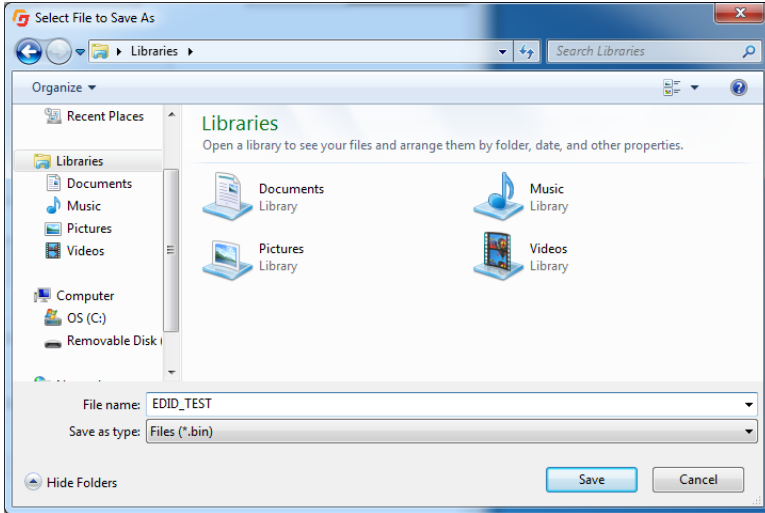
## Downloading an EDID

EDID data can be downloaded from the connected Gefen device to a local file. Note that the Downstream EDID or Bank EDID data cannot be downloaded to a file. To download this EDID data, it must first be copied to the Local EDID. See [Copying an EDID](#) (page 19) for more information on copying EDID data.

1. Click the **Manage a Product** button and select the connected product from the drop-down list.
2. Click the **Manage EDID** tab.
3. Information about the currently selected device will be displayed in the **Version Info** field.
4. Click the drop-down list next to the **Download** button, and select the desired EDID. In this example, `External` has been selected.



5. Click the **Save As** button.
6. The **Select File to Save As** dialog will be displayed. Select the desired folder and specify the name of the file in the **File name** field.



7. Click the **Save** button.

## Uploading an EDID

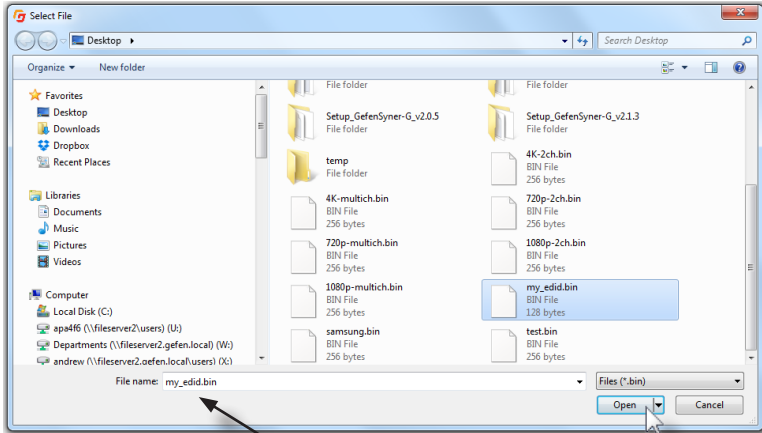
1. Click the **Manage a Product** button and select the connected product from the drop-down list.
2. Click the **Manage EDID** tab.
3. Click the **Upload EDID to** drop-down list and select `Custom-User`.

The screenshot shows a software interface for managing EDID. At the top, there is a header bar with a dropdown menu currently set to 'External', and two buttons labeled 'Save As' and 'View'. Below this, the main content area is divided into two sections. The first section is labeled 'Upload EDID to' and contains a dropdown menu with 'Custom - User' selected, a text input field, and a 'Browse' button. The second section is labeled 'Copy EDID from' and contains a dropdown menu with 'Output 1' selected, followed by the word 'to', another dropdown menu with 'Custom - User' selected, and a 'Copy' button.

4. Click the **Browse** button.

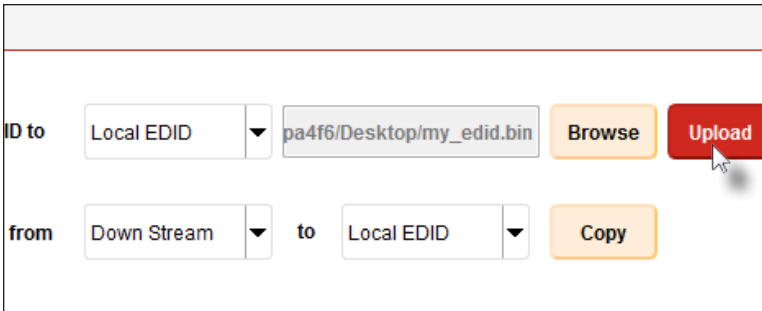
This screenshot shows the same software interface as the previous one, but with changes. The header bar now has a dropdown menu set to 'Select EDID From Device', and the 'Save As' and 'View' buttons are disabled. In the 'Upload EDID to' section, the dropdown menu is now set to 'Local EDID', and the 'Browse' button is highlighted in red, indicating it is the next step. The 'Copy EDID from' section remains the same, with 'Down Stream' selected in the dropdown and the 'Copy' button visible.

- The Windows **Select File** dialog will be displayed.
- Select the desired EDID file. The EDID file must be in `.bin` format.
- Click the **Open** button.



File name: `my_edid.bin`

- Click the **Upload** button.



- In the lower-left corner of the interface, the “Uploading...” message will appear as the EDID is uploaded. Once the operation is complete, the “Done.” message will be displayed.

Uploading...

Done.

## Copying an EDID

1. Click the **Manage a Product** button and select the connected product from the drop-down list.
2. Click the **Manage EDID** tab.
3. Click the **Upload EDID to** drop-down list and select *Custom-User*.
4. Click the **Copy EDID from** drop-down list to select the location from where the EDID will be copied.

The screenshot shows the 'Manage EDID' interface. The 'Upload EDID to' dropdown is set to 'Custom - User' with a file path 'Desktop/EDID/edid\_test.bin' and a 'Browse' button. The 'Copy EDID from' dropdown is open, showing options: 'Output 1', 'Output 2', 'Output 3', and 'Output 4'. The 'to' dropdown is also set to 'Custom - User' with a 'Copy' button. Below, the 'EDID Mode' section has three buttons: 'Internal - UHD 600 4K 2CH' (highlighted in red), 'Custom - UHD 300 4K MULTICH', and 'Custom - ...'.

5. Click the **Copy EDID** to drop-down list to select the location to where the EDID will be copied.

The screenshot shows the 'Manage EDID' interface. The 'Upload EDID to' dropdown is set to 'Custom - User' with a file path 'Desktop/EDID/edid\_test.bin' and a 'Browse' button. The 'Copy EDID from' dropdown is set to 'Output 1'. The 'to' dropdown is open, showing options: 'Custom - User', 'Internal - UHD 600 4K 2CH', 'Custom - UHD 300 4K MULTICH', and 'Custom - ...'. The 'Copy' button is visible. Below, the 'EDID Mode' section has three buttons: 'Internal - UHD 600 4K 2CH' (highlighted in red), 'Custom - UHD 300 4K MULTICH', and 'Custom - ...'.

- Click the **Copy** button.

The screenshot shows the 'EDID Mode' interface. It features two rows of controls. The first row is labeled 'Upload EDID to' and includes a dropdown menu set to 'Custom - User', a text input field containing 'Desktop/EDID/edid\_test.bin', and a 'Browse' button. The second row is labeled 'Copy EDID from' and includes a dropdown menu set to 'Output 1', a 'to' label, another dropdown menu set to 'Custom - User', and a 'Copy' button. A mouse cursor is shown clicking the 'Copy' button. Below these controls is a section titled 'EDID Mode'.

- In the lower-left corner of the interface, the “Copying...” message will appear as the EDID is uploaded. The copy-result message will vary, depending upon the copy operation.

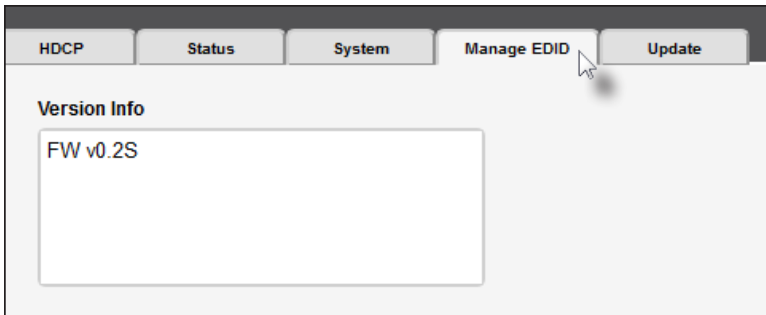
Copying...

Copy result: Downstream EDID stored to local

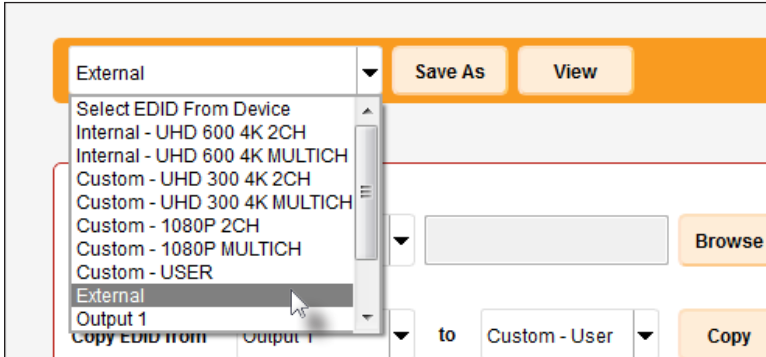
In this example, since we copied the downstream EDID to the local EDID, the “Copy result: Downstream stored to local.” message is displayed.

## Viewing an EDID

1. Click the **Manage a Product** button and select the connected product from the **Select Product** drop-down list.
2. Click the **Manage EDID** tab.



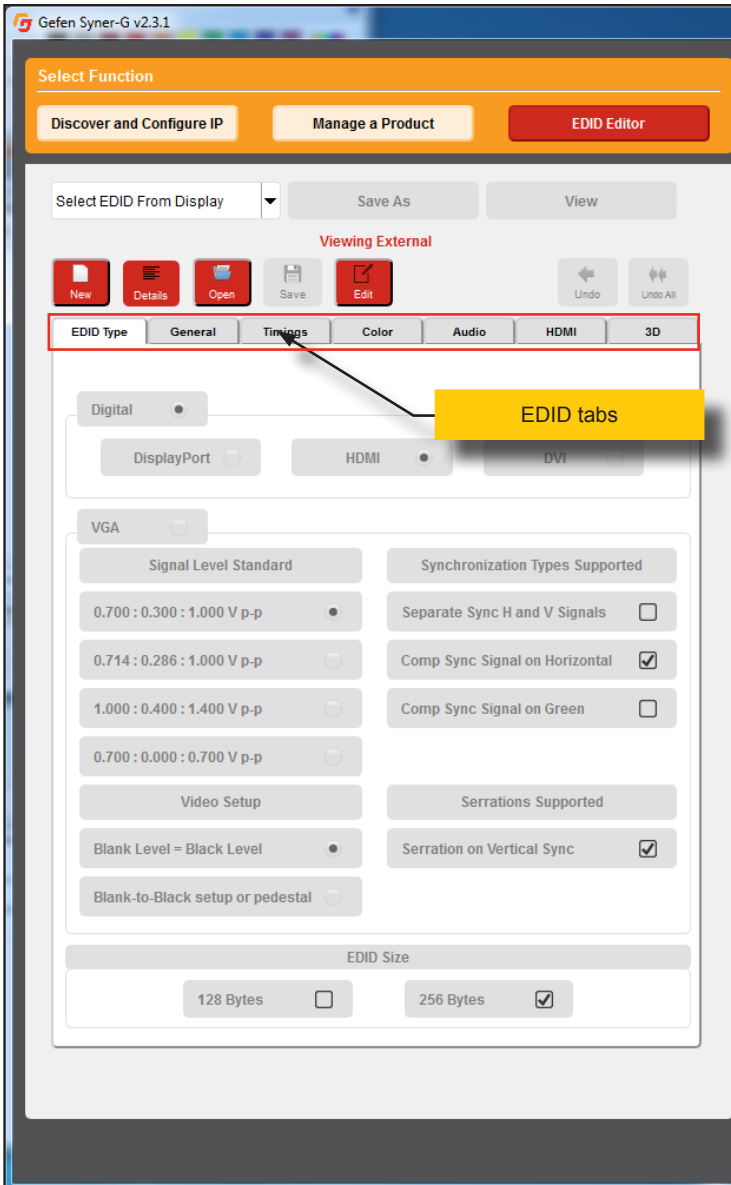
3. Click the **Select EDID From Device / Display** drop-down list to select the desired EDID.



4. Click the **View** button.

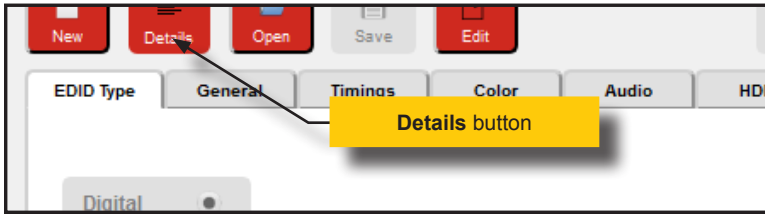


- After a few seconds, Syner-G will also switch to the **EDID Editor** screen. See the Gefen Syner-G™ User Manual for more information on using the EDID Editor.
- Click the desired EDID tab to view specified information on the EDID. Note that some sections within a tab use scroll bars to indicate that more information is available.

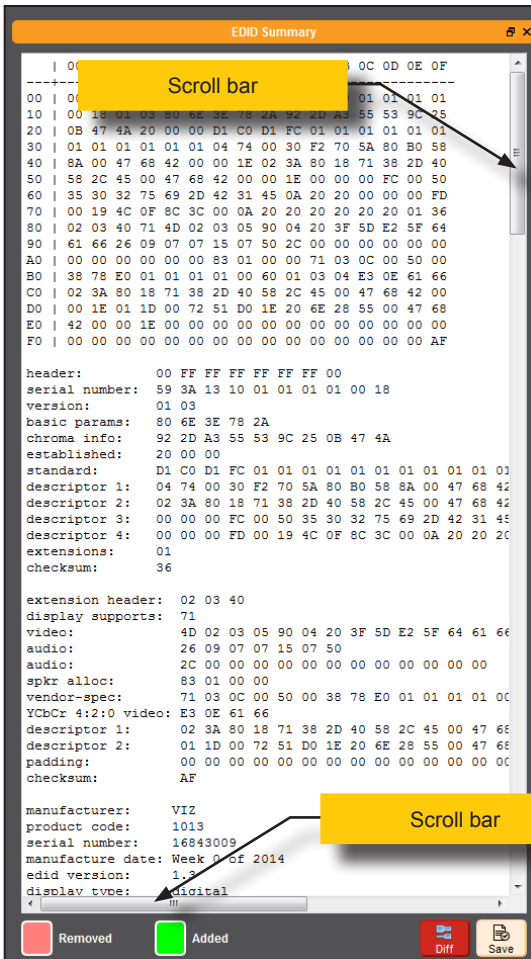





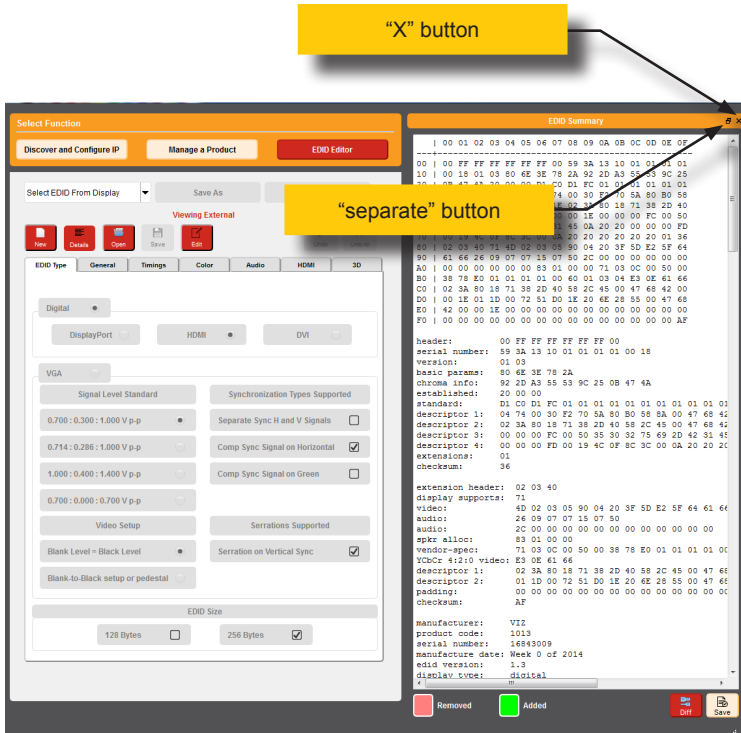
7. Click the **Details** button.



8. The **EDID Summary** window will be displayed. Use the horizontal and vertical scroll bar, as needed, to view the EDID information.



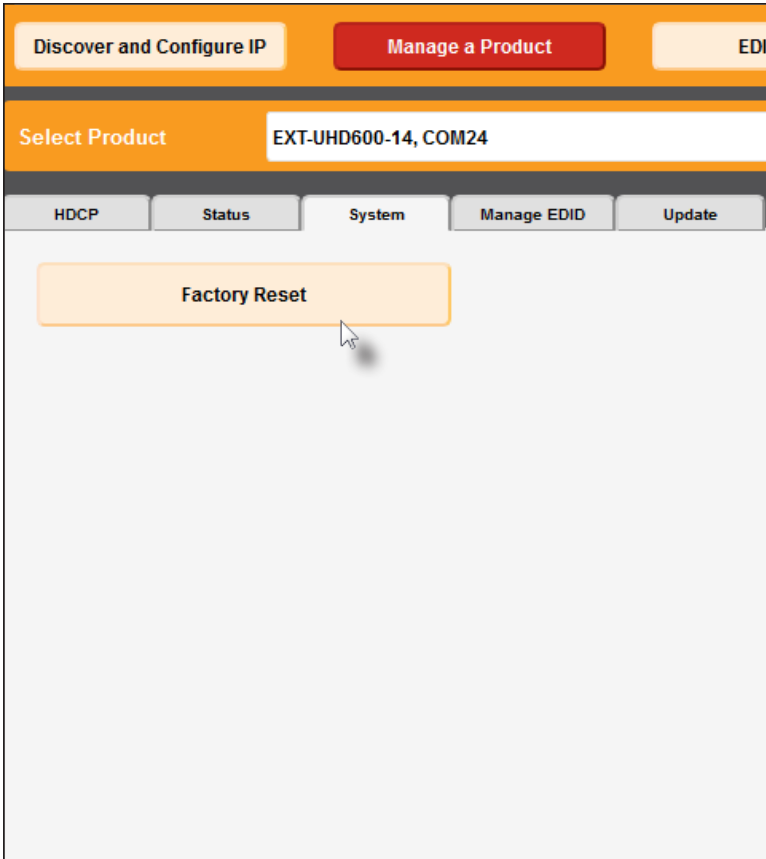
- Click the  button, in the upper-right corner of the **EDID Summary** window to separate the **EDID Summary** window from the main Syner-G window:



- Double-click the window title bar of the detached **EDID Summary** to reattach it to the main window. it to the main Syner-G window.
- To close the **EDID Summary** window, either click the **X** button, in the upper-right corner of the **EDID Summary** window or click the **Details** button in the main Syner-G window.

## Resetting to Factory Defaults

1. Click the **Manage a Product** button.
2. Select the connected product from the **Select Product** drop-down list.
3. Click the **System** tab.
4. Click the **Factory Reset** button. Factory-default settings are:
  - ▶ EDID mode is set to `Ext`. See [Setting the EDID Mode \(page 14\)](#).
  - ▶ Input HDCP is set to `VERSION 2.2 AND BELOW`.
  - ▶ Output HDCP is set to `FOLLOW INPUT` for all outputs. See [HDCP Settings \(page 27\)](#).



## Viewing Signal Status

1. Click the **Manage a Product** button.
2. Select the connected product from the **Select Product** drop-down list.
3. Click the **Status** tab.

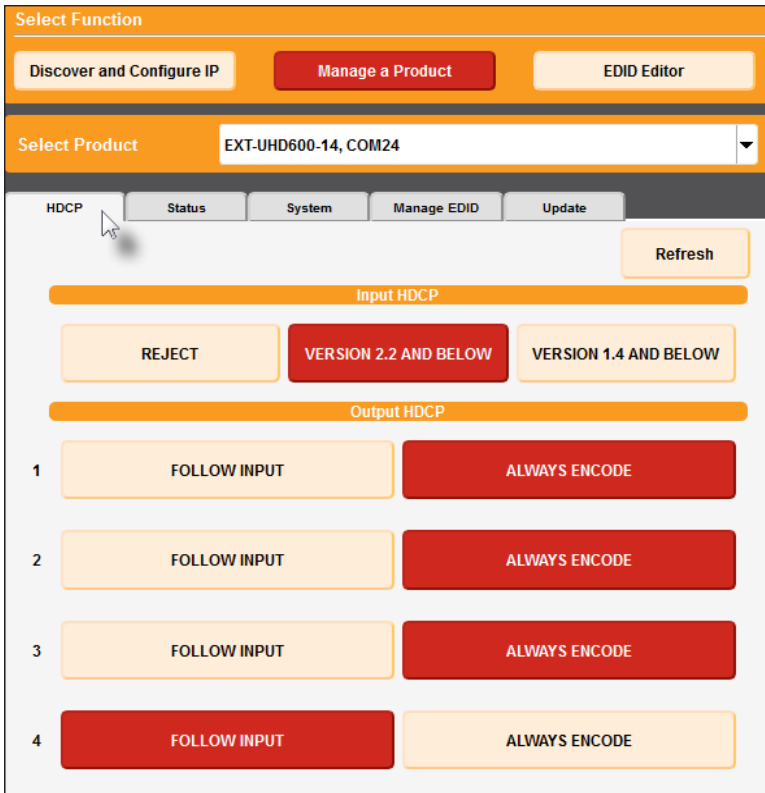
The screenshot displays the Syner-G web interface. At the top, there is a 'Select Function' bar with three buttons: 'Discover and Configure IP', 'Manage a Product' (highlighted in red), and 'EDID Editor'. Below this is a 'Select Product' dropdown menu showing 'EXT-UHD600-14, COM24'. A navigation bar contains tabs for 'HDCP', 'Status' (selected), 'System', 'Manage EDID', and 'Update'. The main content area is divided into sections for 'Input 1' and four 'Output' sections (Output 1 to Output 4). Each section contains status indicators for Active Signal, HDCP, HPD, and Video Mode (for Input 1), and HPD, RSENSE, and HDCP (for each output). A 'Refresh' button is located in the top right of the Input 1 section.

Input 1		Output 1		Output 2		Output 3		Output 4	
Active Signal	No	HPD	High	HPD	High	HPD	Low	HPD	Low
HDCP	Unencrypted	RSENSE	High	RSENSE	High	RSENSE	Low	RSENSE	Low
HPD	Low	HDCP	Unencrypted	HDCP	Unencrypted	HDCP	Unencrypted	HDCP	Unencrypted
Video Mode	HDMI								

4. Click the **Refresh** button, if necessary, to update each field.

## HDCP Settings

1. Click the **Manage a Product** button.
2. Select the connected product from the **Select Product** drop-down list.
3. Click the **HDCP** tab.



Select Function

Discover and Configure IP    **Manage a Product**    EDID Editor

Select Product    EXT-UHD600-14, COM24

HDCP    Status    System    Manage EDID    Update    Refresh

Input HDCP

REJECT    **VERSION 2.2 AND BELOW**    VERSION 1.4 AND BELOW

Output HDCP

1	FOLLOW INPUT	<b>ALWAYS ENCODE</b>
2	FOLLOW INPUT	<b>ALWAYS ENCODE</b>
3	FOLLOW INPUT	<b>ALWAYS ENCODE</b>
4	<b>FOLLOW INPUT</b>	ALWAYS ENCODE

4. Select the input settings:
  - ▶ **REJECT** - Does not allow HDCP content to be passed through.
  - ▶ **VERSION 2.2 AND BELOW** - Click this button if the sink device supports HDCP 2.2 and below.
  - ▶ **VERSION 1.4 AND BELOW** - Click this button if the sink device only supports HDCP 1.4 and below.

5. Select the output settings:

- ▶ **FOLLOW INPUT** - Click this button to have the output follow the setting used on the input.
- ▶ **ALWAYS ENCODE** - Encodes the output signal with HDCP, regardless of the input signal. Use this feature for displays that require HDCP-encoded content.



### Information

The output will always be HDCP 2.2, regardless of the HDCP setting on the input.

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**600 MHz**  
**4K ULTRA** 

**1:2 Splitter for HDMI w/HDR**

4

Appendix

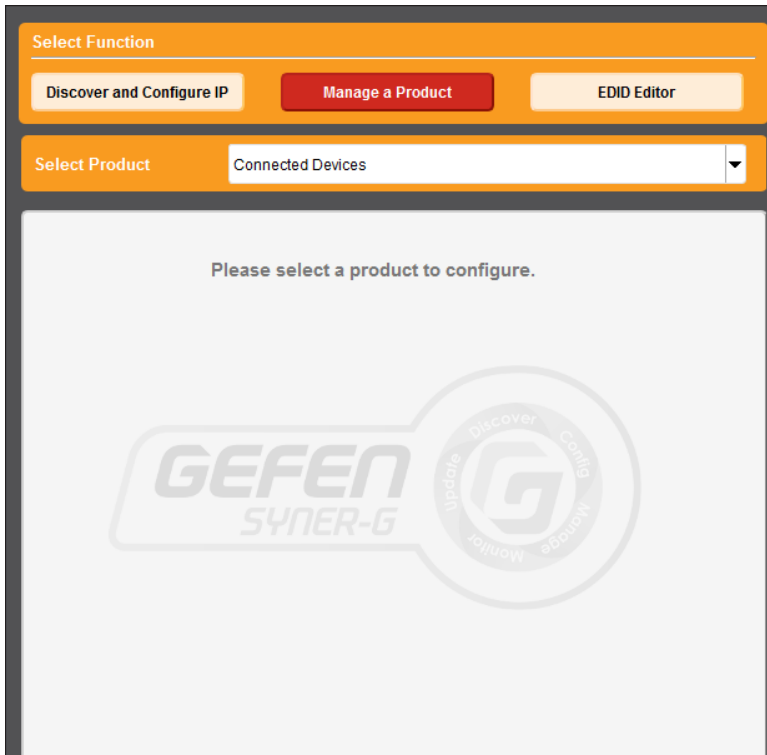
The Syner-G™ Software Suite provides an easy way to perform firmware updates. Before launching Syner-G™, make sure that a USB cable is connected between the product and the computer that is running the Syner-G™ software. Refer to the Syner-G™ Software Suite User Manual for more information on using other features with this product.

## Automatic Update Procedure

1. Launch the Syner-G™ Software Suite from the Start Menu or using the shortcut from the Windows Desktop.



2. Click the **Manage a Product** button.



3. Select the product from the **Select your product** drop-down list.

The screenshot shows the 'Select Function' section with three buttons: 'Discover and Configure IP', 'Manage a Product' (highlighted in red), and 'EDID Editor'. Below this is the 'Select Product' dropdown menu, which is open and shows 'EXT-UHD600-14, COM24' selected. The main interface has five tabs: 'HDCP', 'Status', 'System', 'Manage EDID', and 'Update'. The 'Update' tab is active, showing the following information:

- Product: EXT-UHD600-14
- Update Method: USB Serial
- Current Firmware: v1.08
- Latest Firmware: (empty)
- Check at Startup: Disabled
- Last Checked: Tue Dec 29 15:57:25 2015
- Check for Latest Update: (button)

A message box states: 'Firmware update functionality is currently unavailable for this device.' Below this is the 'Product Options' section, which is currently empty. At the bottom, the 'Download and Install' section shows a progress bar for 'Download Latest Version to Gefen Syner-G' at 0%, with buttons for 'Start', 'Install', and 'Save'.

If the product is not detected by Syner-G™, then the product will not be listed in bold type, within the **Select your product** drop-down list. Verify the following:

- ▶ The product is powered and connected to the computer that is running the Syner-G™ Software Suite, using a USB-to-Mini USB cable.
- ▶ Make sure that the USB driver is installed and functioning correctly under Control Panel. See [Verifying the USB Driver \(page 29\)](#) for more information.

4. Click the **Update** tab.

The screenshot shows a web-based interface for managing a product. At the top, there are three main buttons: "Discover and Configure IP", "Manage a Product" (highlighted in red), and "EDID Editor". Below this is a "Select Product" dropdown menu showing "EXT-UHD600-14, COM24".

The main content area has a navigation bar with tabs: "HDCP", "Status", "System", "Manage EDID", and "Update" (which is selected). The "Update" tab displays the following information:

- Product:** EXT-UHD600-14
- Update Method:** USB Serial
- Current Firmware:** v1.08
- Latest Firmware:** (empty field)
- Last Checked:** Tue Dec 29 15:57:25 2015

There are two buttons on the right side of the update section: "Check at Startup Disabled" and "Check for Latest Update". A large message box states: "Firmware update functionality is currently unavailable for this device." Below this, there is a "Product Options" section with a dropdown menu set to "None".

The "Download and Install" section contains three options:

- Download Latest Version to Gefen Syner-G:** Includes a progress bar at 0% and buttons for "Start", "Install", and "Save".
- Download to Computer:** Includes a "Save" button.

The "Install from File" section includes a "Select File to Upload" field with a "Browse" button and an "Install" button.

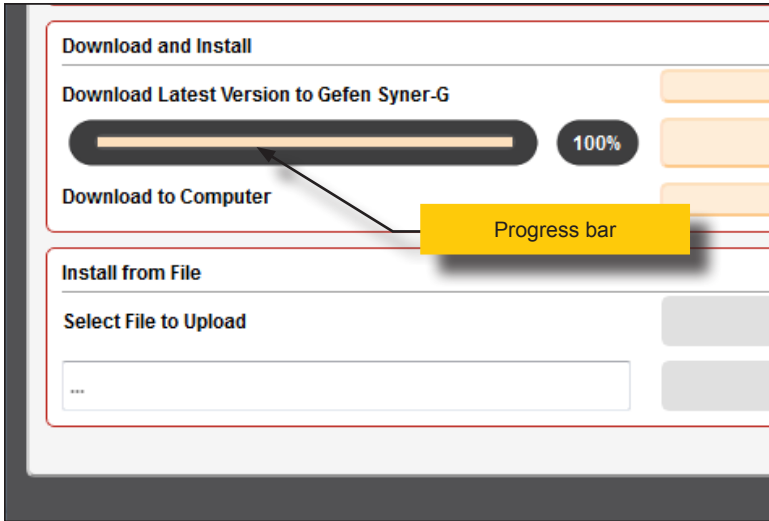
- Click the **Start** button to begin downloading the firmware.

The screenshot displays the 'Update' section of the software suite. At the top, there are three main function buttons: 'Discover and Configure IP', 'Manage a Product', and 'EDID Editor'. Below this, the 'Select Product' dropdown is set to 'EXT-UHD600-14, COM24'. A navigation bar includes 'HDCP', 'Status', 'System', 'Manage EDID', and 'Update' (which is active). The main content area shows product details: 'Product: EXT-UHD600-14', 'Update Method: USB Serial', 'Current Firmware: v0.2S', and 'Latest Firmware' (empty). There are buttons for 'Check at Startup Disabled' and 'Check for Latest Update'. A message box states: 'Firmware update functionality is currently unavailable for this device.' Below this, the 'Product Options' section shows 'None'. The 'Download and Install' section features a progress bar at 0% and a prominent red 'Start' button being clicked by a mouse cursor. Other buttons include 'Install', 'Save', and 'Browse'.

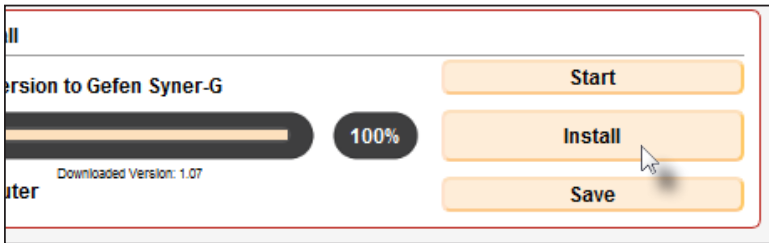
The Syner-G™ Software Suite will automatically download the firmware file for the selected product. This process should take a few seconds.

Once the download process has completed, the progress bar will indicate 100%, as shown on the next page.

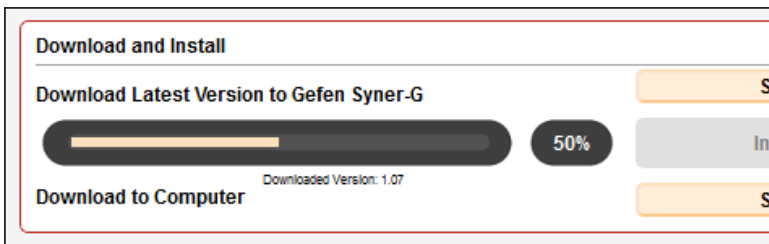
A message will also appear at the bottom of the window, indicating that the firmware file was successfully downloaded.



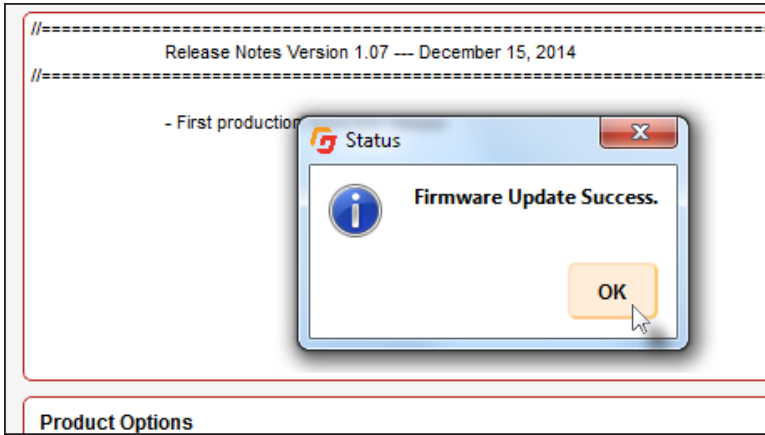
6. Click the **Install** button to begin installing the software.



7. The installation process will begin and the progress bar will indicate the current status.



- After the firmware update process has completed, the following message will be displayed.



- Click the **OK** button to dismiss the message box.
- The procedure is now complete.

## Manual Update Procedure

This method can be used if the computer being used does not have an Internet connection. Download the firmware using another computer, then transfer the file to the computer which is connected to the Gefen product and running the Syner-G software.

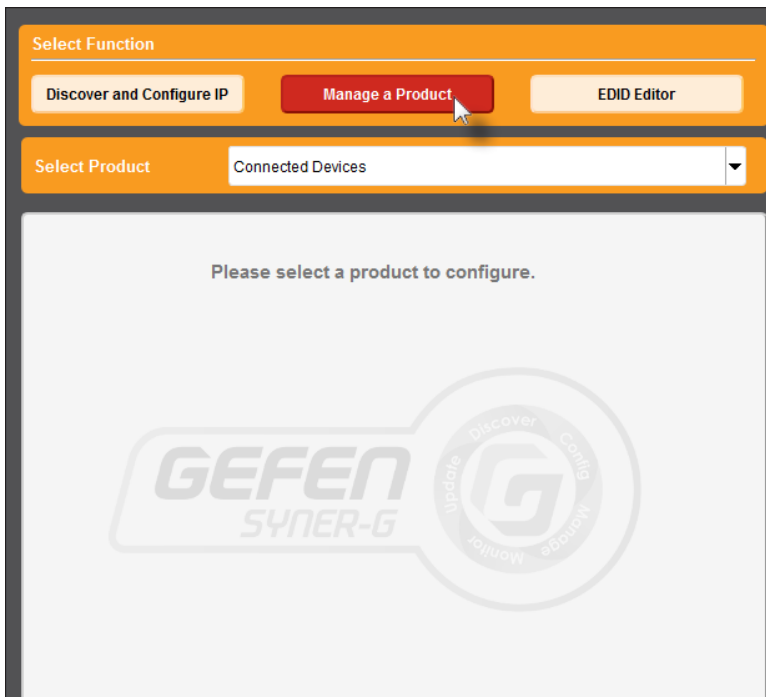
1. Download the required firmware from the Support section of the Gefen Web site using a computer that has an Internet connection.

*Do not* extract the file(s) from the .zip file.

2. Launch the Syner-G Software Suite from the Start Menu or using the shortcut from the Windows Desktop.



3. Click the **Manage a Product** button.





3. Select the product from the **Select your product** drop-down list.

The screenshot shows the 'Select Function' section with three buttons: 'Discover and Configure IP', 'Manage a Product' (highlighted in red), and 'EDID Editor'. Below this is the 'Select Product' dropdown menu, which is open and shows the selected product 'EXT-UHD600-14, COM24'. The main interface has five tabs: 'HDCP', 'Status', 'System', 'Manage EDID', and 'Update'. The 'Update' tab is selected and contains the following information:

- Product:** EXT-UHD600-14
- Update Method:** USB Serial
- Current Firmware:** v1.08
- Latest Firmware:** (empty field)
- Last Checked:** Tue Dec 29 15:57:25 2015
- Check at Startup:** Disabled
- Check for Latest Update:** (button)

A message box states: 'Firmware update functionality is currently unavailable for this device.' Below this, there are sections for 'Product Options' (None) and 'Download and Install' (0% progress bar). The 'Download and Install' section has three buttons: 'Start', 'Install', and 'Save'.

If the product is not detected by Syner-G™, then the product will not be listed in bold type, within the **Select your product** drop-down list. Verify the following:

- ▶ The product is powered and connected to the computer that is running the Syner-G™ Software Suite, using a USB-to-Mini USB cable.
- ▶ Make sure that the USB driver is installed and functioning correctly under Control Panel. See [Verifying the USB Driver \(page 29\)](#) for more information.

- Click the **Browse** button, under the **Install from File** section.

The screenshot displays the 'Select Function' interface for upgrading the firmware of an HDMI Detective Plus, COM11 device. The interface is organized into several sections:

- Select Function:** Contains three buttons: 'Discover and Configure IP', 'Manage a Product' (highlighted in red), and 'EDID Editor'.
- Select Product:** A dropdown menu showing 'HDMI Detective Plus, COM11'.
- Booster, Manage EDID, Update:** A row of three tabs, with 'Update' being the active tab.
- Product Information:**
  - Product: HDMI Detective Plus
  - Update Method: USB Serial
  - Current Firmware: 2.26
  - Latest Firmware: 2.26
  - Check at Startup Enabled (red button)
  - Last Checked: Wed Oct 28 17:58:33 2015
  - Check for Latest Update (yellow button)
- Release Notes:** A scrollable text area containing:
 

```
//=====
Release Notes Version 2.26 --- August 1, 2014
//=====

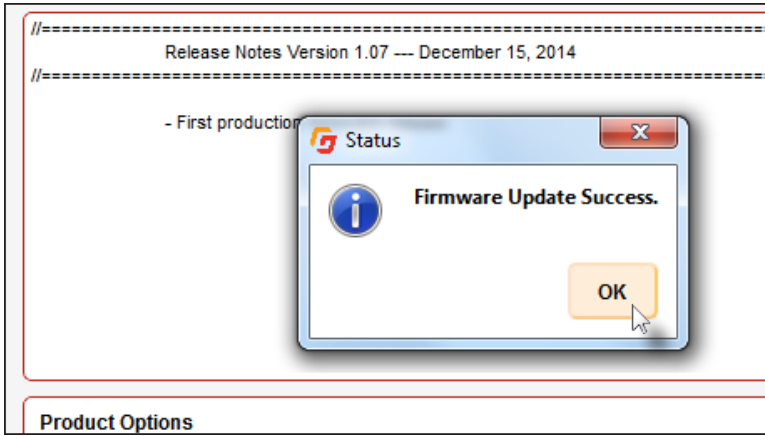
- Fixed USB Product ID code

//=====
Release Notes Version 2.24 --- January 6, 2014
//=====

- First production firmware release
```
- Product Options:** A dropdown menu set to 'None'.
- Download and Install:**
  - Download Latest Version to Gefen Syner-G: 0% progress bar, 'Start' (red button), 'Install' (grey button).
  - Download to Computer: 'Save' (yellow button).
- Install from File:**
  - Select File to Upload: Text input field with '...' placeholder.
  - 'Browse' (yellow button) is highlighted by a mouse cursor.
  - 'Install' (grey button) is also visible.

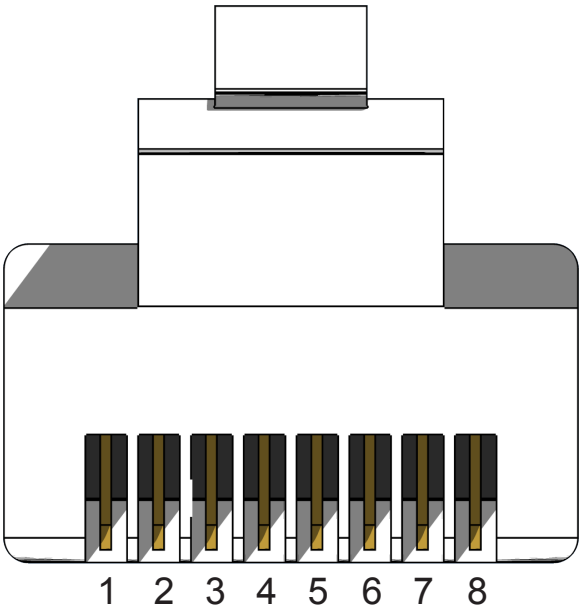
- The **Select File** dialog will be displayed.
- Select the firmware file. The firmware file must be in `.zip` format. Do not extract the contents from the `.zip` file.
- Click the **Open** button on the **Select File** dialog.

8. The selected file will be displayed in the **Select File to Upload** field.
9. Click the **Install** button.
10. The installation process will begin and the progress bar will indicate the current status.
11. After the installation process has completed, the following message box will be displayed.




12. Click the **OK** button and follow the directions that were provided on the message box. After the installation process has completed, click the **OK** button in the message box that is displayed.
13. The firmware upgrade process is now complete.

Front of RJ-45 Connector



Gefen recommends the TIA/EIA-568-B wiring option. Use the table below when field-terminating cable for use with Gefen products.

Pin	Color	Description
1	Orange / White	TD+ (Transmit Data, positive differential signal)
2	Orange	TD- (Transmit Data, negative differential signal)
3	Green / White	RD+ (Receive Data, positive differential signal)
4	Blue	Unused
5	Blue / White	Unused
6	Green	RD- (Receive Data, negative differential signal)
7	Brown / White	Unused
8	Brown / White	Unused

 **Information**  
Shielded CAT-5e (or better) cabling is recommended.

Supported Formats	
Resolutions (max.)	<ul style="list-style-type: none"> <li>• 4K DCI-Cinema (4096 x 2160 at 60 Hz, 4:4:4 color space)</li> <li>• 4K Ultra HD (3860 x 2160 at 60Hz, 4:4:4 color space)</li> <li>• 1080p Full HD</li> <li>• 1920x1200 WUXGA</li> <li>• 3840 x 2160p 60 Hz (4:2:0)</li> </ul>
Audio	<ul style="list-style-type: none"> <li>• LPCM 7.1</li> <li>• Dolby Atmos®, Dolby® TrueHD</li> <li>• DTS:X™, DTS-HD Master Audio™</li> </ul>

Connectors, Controls, and Indicators	
HDMI In	<ul style="list-style-type: none"> <li>• 1 x Type A, 19-pin female, locking</li> </ul>
HDMI Out	<ul style="list-style-type: none"> <li>• 2 x Type A, 19-pin female, locking</li> </ul>
USB	<ul style="list-style-type: none"> <li>• 1 x Mini-B</li> </ul>
Power	<ul style="list-style-type: none"> <li>• 1 x LED, blue</li> </ul>
Input indicator	<ul style="list-style-type: none"> <li>• 1 x LED, green</li> </ul>
Output indicators	<ul style="list-style-type: none"> <li>• 2 x LED, green</li> </ul>
EDID indicators	<ul style="list-style-type: none"> <li>• 4 x LED, green</li> </ul>
EDID selector	<ul style="list-style-type: none"> <li>• 1 x recessed tact switch</li> </ul>
Power connector	<ul style="list-style-type: none"> <li>• 1 x locking type</li> </ul>

Operational	
Maximum pixel clock	<ul style="list-style-type: none"> <li>• 600 MHz</li> </ul>
Power input	<ul style="list-style-type: none"> <li>• 5 V DC</li> </ul>
Power consumption	<ul style="list-style-type: none"> <li>• 6.5 W</li> </ul>
Operating Temperature	<ul style="list-style-type: none"> <li>• +32 to +122 °F (0 to +50 °C)</li> </ul>
Operating Humidity	<ul style="list-style-type: none"> <li>• 5% to 90% RH, non-condensing</li> </ul>
Storage Temperature	<ul style="list-style-type: none"> <li>• -4 to +185 °F (-20 to +85 °C)</li> </ul>
Storage Humidity	<ul style="list-style-type: none"> <li>• 0% to 95% RH, non-condensing</li> </ul>
Pin 18, HDMI output port 1 and 2	<ul style="list-style-type: none"> <li>• 500 mA (max.) @ 5 V</li> </ul>
MTBF	<ul style="list-style-type: none"> <li>• 300000 hours</li> </ul>

Physical	
Dimensions (W x H x D)	<ul style="list-style-type: none"> <li>• 8.4" x 1" x 3.7" (213mm x 25mm x 93mm), without connectors or feet</li> </ul>
Net Weight	<ul style="list-style-type: none"> <li>• 0.75 lbs (0.3 kg)</li> </ul>

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