

# ULTRA HD

## Booster for HDMI with EDID Detective

EXT-HDBOOST-141

User Manual

Release A4



# Important Safety Instructions

## GENERAL SAFETY INFORMATION

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

Gefen warrants the equipment it manufactures to be free from defects in material and workmanship.

If equipment fails because of such defects and Gefen is notified within two (2) years from the date of shipment, Gefen will, at its option, repair or replace the equipment, provided that the equipment has not been subjected to mechanical, electrical, or other abuse or modifications. Equipment that fails under conditions other than those covered will be repaired at the current price of parts and labor in effect at the time of repair. Such repairs are warranted for ninety (90) days from the day of reshipment to the Buyer.

This warranty is in lieu of all other warranties expressed or implied, including without limitation, any implied warranty or merchantability or fitness for any particular purpose, all of which are expressly disclaimed.

1. Proof of sale may be required in order to claim warranty.
2. Customers outside the US are responsible for shipping charges to and from Gefen.
3. Copper cables are limited to a 30 day warranty and cables must be in their original condition.

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.

For the latest warranty coverage information, refer to the Warranty and Return Policy under the Support section of the Gefen Web site at [www.gefen.com](http://www.gefen.com).

### PRODUCT REGISTRATION

**Please register your product online by visiting the Register Product page under the Support section of the Gefen Web site.**

# Contacting Gefen Technical Support

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Technical Support Hours: 8:00 AM to 5:00 PM Monday - Friday, Pacific Time

## **Booster for HDMI with EDID Detective**

is a trademark of Gefen, LLC.

### **Important Notice**

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

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## Operating Notes

- The Gefen Booster for HDMI with EDID Detective extends HDMI up to 150 feet (45 meters) at 1080p Full HD and up to 115 feet (35 meters) at 4K x 2K Ultra HD resolution, using standard copper HDMI cables to keep sources and displays in sync.
- The Gefen Booster for HDMI with EDID Detective comes pre-programmed with 6 default EDID profiles as well as 6 user-programmable EDID banks.
- To access all features and select the Default EDID profiles, refer to [Installing the Gefen EDID Tool+](#).

# Features and Packing List

## Features

- Extends copper HDMI cables up to 150 feet (45 meters) at 1080p Full HD, and up to 115 feet (35 meters) at 4K x 2K Ultra HD
- Supports resolutions up to Ultra HD 4K x 2K (3840 x 2160 @ 30Hz), 1080p Full HD, and 2048 x 1536 (QXGA)
- HDMI Features Supported:
  - ▶ HDCP
  - ▶ 12-bit Deep Color
  - ▶ LPCM 7.1 audio, Dolby® TrueHD, and DTS-HD Master Audio™
  - ▶ 3DTV pass-through
  - ▶ Lip-Sync pass-through
  - ▶ CEC pass-through
- USB port for advanced programming of features such as video equalization, pre-emphasis, and EDID management
- DDC Re-clocking
- EQ adjustment for best results with varying cable types and lengths
- Can record the EDID from a display
- 6 pre-programmed EDID profiles
- 6 user-programmable EDID banks for copying/uploading EDIDs
- Selectable HDCP pass-through
- Field-upgradable firmware via USB port
- Compact and portable



## Packing List

The Booster for HDMI with EDID Detective ships with the items listed below. If any of these items are not present in your box when you first open it, immediately contact your dealer or Gefen.

- 1 x Booster for HDMI with EDID Detective
- 1 x 1 ft. locking HDMI cable
- 1 x 6ft. USB Mini USB to USB
- 1 x 5V DC power supply
- 1 x Quick-Start Guide



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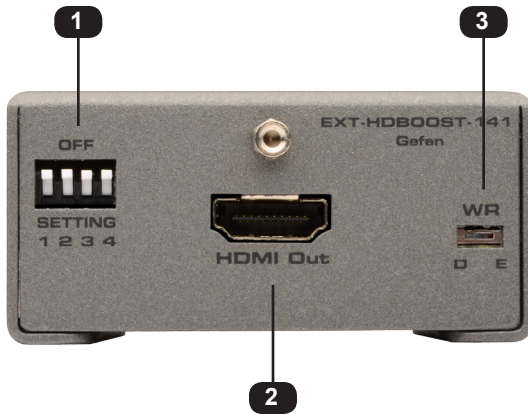
# Booster for HDMI with EDID Detective

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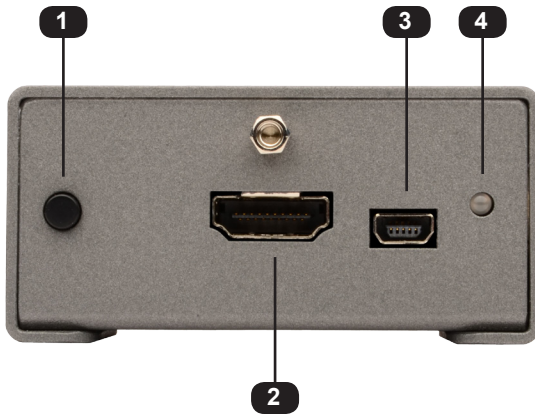
# Panel Layout

## Front Panel



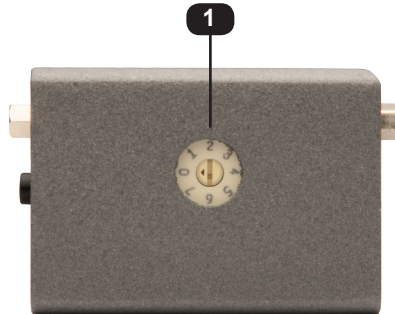
ID	Name	Description
1	DIP switches	Use this DIP switch bank to select a pre-programmed EDID. See <a href="#">EDID Programming</a> for more information.
2	HDMI Out	Connect the HDTV display to this port using an HDMI cable.
3	WR	Write-enable switch. Flip this switch to the "E" position to allow the booster to be programmed with an EDID. Set this switch to the "D" position to disable programming and prevent an accidental erasure of the current EDID.

## Back Panel



ID	Name	Description
1	Prog	Press this button to program the unit with the desired EDID. See <a href="#">EDID Programming</a> for more information.
2	HDMI In	Connect the Hi-Def source to this port using an HDMI cable.
3	USB	Connect a USB cable to provide an alternate power source for the booster.
4	Power	This LED will glow bright green when the booster is powered.

### Right Panel



ID	Name	Description
1	EQ	Use this 8-position rotary pot to adjust the signal quality, based on the cable type and length.

### Left Panel



ID	Name	Description
1	5V DC	Connect the included 5V DC power supply to this power receptacle.

# Installation

## Connecting the Booster for HDMI with EDID Detectable



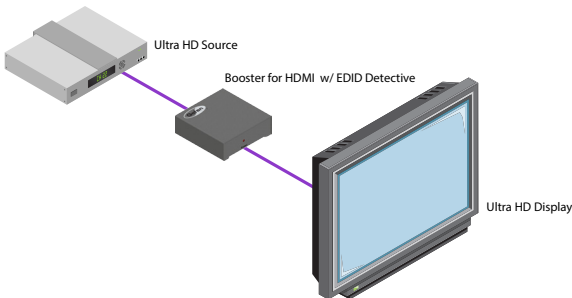
**STOP:** Before connecting the Booster for HDMI with EDID Detectable, the unit must be programmed with an EDID. See [EDID Programming](#) for instructions on EDID programming before continuing.

1. Connect the included locking HDMI cable from the Hi-Def source to the **HDMI In** port on the booster.
2. Use another locking HDMI cable to connect the display (or other sink) to the **HDMI Out** port on the booster.
3. Connect the included 5V DC power supply to the power receptacle on the booster.
4. Connect the power supply to an available electrical outlet.

## Sample Wiring Diagram



**HDMI CABLE** 









# Booster for HDMI with EDID Detective

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## EDID Programming

Before using the Booster for HDMI with EDID Detective, the unit must be programmed with an EDID. Once programmed, the EDID data will be read by the source, providing all the necessary details of the type of signal that the display (or other sink device) can process.

There are two ways in which to program the booster: 1) The EDID data can come from an external source, such as a display or A/V receiver. 2) The booster can be programmed using any of the 6 Default EDID profiles .

### Programming an External EDID

1. Begin by powering-on the display or other sink device containing the EDID to be recorded.
2. Connect an HDMI cable from the sink device to the **HDMI Out** port on the booster.
3. Set all DIP switches to the OFF (up) position, as shown below.






4. Set the **WR** (write) switch to the **E** position in order to allow the EDID to be written to the booster.
5. Connect the included 5V DC power supply to the booster. The **Power** LED will glow bright green.
6. Press and hold the **Program** button on the booster, until the **Power** LED begins to flash rapidly. The Power LED will continue to flash as the EDID is recorded by the booster. This process only takes about 1 second.



If the EDID was recorded successfully, then the **Power** LED will glow solid green. If an error was encountered during the recording process, then the Power LED will flash bright red.

If an error is encountered, disconnect the 5V DC power supply from the booster, power-cycle the display, then repeat steps 5 and 6. If an error is encountered after several attempts, then this may indicate that the sink device has a bad EDID.

LED	Status	Condition(s)
Power	Solid green 	<ul style="list-style-type: none"> <li>Booster is powered.</li> <li>EDID recorded successfully.</li> </ul>
	Flashing red 	<ul style="list-style-type: none"> <li>Bad / corrupt EDID at sink.</li> <li>No sink device detected.</li> <li>Write-protected booster (WR = D).</li> </ul>
	Flashing green 	<ul style="list-style-type: none"> <li>EDID is being recorded.</li> </ul>

- Set the **WR** (write) switch to the D position in order to prevent the stored EDID from being accidentally erased or overwritten.

If the **WR** (write) switch is in the D position while attempting to record an EDID, the **Power** LED will flash red, once.

- The Booster for HDMI with EDID Detective can now be used to connect two cables, between the source and the sink. See [Connecting the Booster for HDMI with EDID Detective](#) for details.

## Loading an EDID from a Bank



**NOTE:** The Booster for HDMI with EDID Detective ships with 6 Default EDID Profiles. See [Default EDID Profiles](#) for each internal pre-programmed EDID profile.

1. Connect the included 5V DC power supply to the booster.
2. Set the **WR** (write) switch to the **E** position in order to allow the EDID to be written to the booster.
3. Select the desired EDID bank, using the piano DIP switches. Refer to the chart, below. DIP switch 4 is not used when selecting an EDID bank.

Bank	DIP SW 1	DIP SW 2	DIP SW 3	DIP SW 4
1	ON	OFF	OFF	Not used
2	OFF	ON	OFF	
3	ON	ON	OFF	
4	OFF	OFF	ON	
5	ON	OFF	ON	
6	OFF	ON	ON	

For example, if we wanted to recall the EDID that is stored in EDID bank 4, then we would set the DIP switches to SW1 = OFF, SW2 = OFF, SW3 = ON.

4. Press and hold the **Program** button on the booster. The Power LED will flash as the EDID is recalled from the specified bank and loaded to the local input (HDMI In) on the booster.
5. Set the **WR** (write) switch to the **D** position in order to prevent the stored EDID from being accidentally erased or overwritten.

Recalling an EDID from a bank (to the Local EDID) can also be accomplished by using the `#edidbatolo` command.

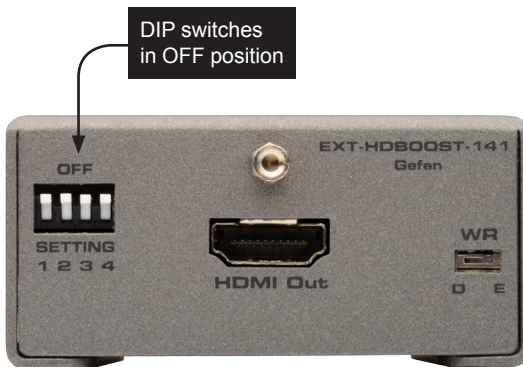
## Storing an EDID to a Bank



**WARNING:** When an EDID is stored in an EDID bank, the original EDID data will be lost. The `#saveloedid` command can be used as part of the process to save the EDID data to a file.

The Booster for HDMI with EDID Detective can store EDID data in 6 separate EDID banks. Once an EDID is stored in a bank, it can be recalled for later use. Each EDID bank can store up to 256 bytes of EDID data. In order to store an EDID to a bank, use the `#ediddstoba` command. See [Using the Virtual COM Port](#) for more information on using commands.

1. Begin by powering-on the display or other sink device containing the EDID to be recorded.
2. Connect the included 5V DC power supply to the booster.
3. Set all DIP switches to the OFF (up) position, as shown below.



4. Connect an HDMI cable from the sink device to the **HDMI Out** port on the booster. The **Power** LED will glow bright green if the sink device contains a valid EDID. If the EDID is corrupt or invalid, then the **Power** LED will flash bright red.
5. Use the `#ediddstoba` command to record the downstream EDID to the desired bank. For example, to record the downstream EDID to bank 2, we would use the following command syntax:

```
#ediddstoba 2
```

6. To fill the remaining 5 EDID banks with EDID data, repeat steps 4 and 5, following the `#ediddstoba` command with a different bank number. If an EDID is stored in a bank with existing EDID data, then the existing EDID data will be overwritten.

## HDCP Control

In order for the Booster for HDMI with EDID Detective to pass HDCP content (e.g. Blu-ray, etc.), DIP switch 4 must be set to the OFF (up) position. This is the factory-default setting.

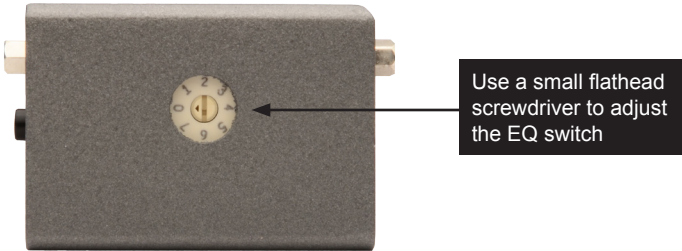
In some cases, computers will enable HDCP if an HDCP-compliant display is detected. To force the computer to ignore detection of an HDCP-compliant display, set DIP switch 4 to the ON (down) position.

HDCP can also be controlled using the `#ddcmode` command.

# Adjusting the Video Signal

## Using the EQ Switch

Due to the high data rates supported by the booster over long cables, video artifacts and/or drop-outs may occur. The rotary EQ switch can boost signal gain from 0 dB to 27 dB. Use a small flathead screwdriver to rotate the EQ switch to one of the 8 positions.



Switch Position	Signal gain	Switch Position	Signal gain
0	0 dB	4	23 dB
1	10 dB	5	25 dB
2	16 dB	6	26 dB
3	19 dB	7	27 dB

The following table provides general guidelines for cable length, gauge (AWG), and timing information:

Length	Gauge (AWG)	Timing
115 feet (35 meters)	24	4K x 2K
148 feet (45 meters)	24	1080p / 60 Hz
180 feet (55 meters)	24	720p / 60 Hz

Since each situation is unique, different lengths and gauges may produce different timings.

## Using Commands

In addition to adjusting the EQ setting using the rotary switch, the `#eq` command can also be used. The command set also provides control of additional features. See [Commands](#) for information on each command.







# Booster for HDMI with EDID Detective

## 03 Advanced Operation

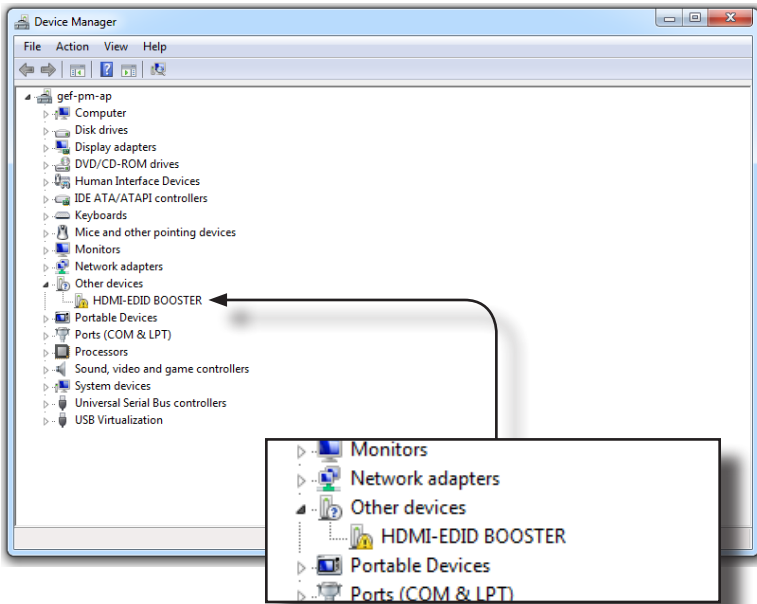
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# Using the Virtual COM Port

## Installing the Driver

When the Booster for HDMI with EDID Detective is connected to a computer running the Windows® operating system, a virtual communications port is created. This feature allows the internal command set to be used to control the booster. Macintosh computers are also supported. The following set of instructions is for Windows® only.

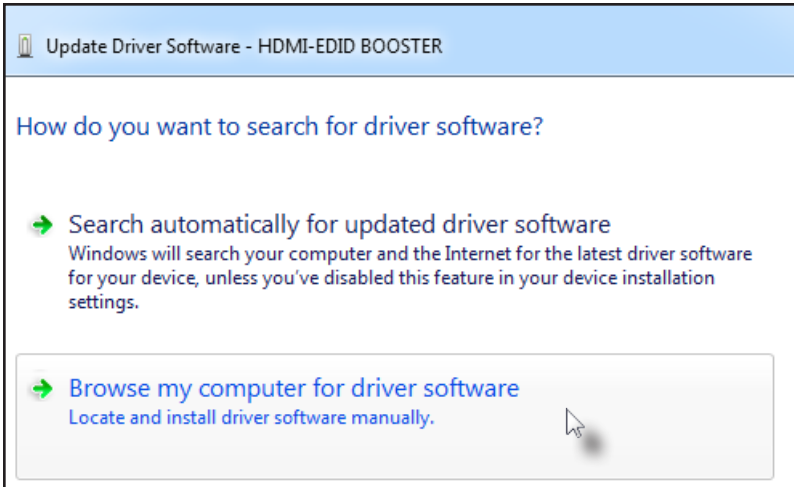
1. Download the driver for the Booster for HDMI with EDID Detective from the Gefen Web site.
2. Extract the contents of the .zip file to the Windows® Desktop.
3. Connect the USB-to-Mini USB cable between the detective and the PC.
4. After connecting the booster, Windows® will indicate that a driver for the device cannot be located.
5. Go to **Control Panel > Device Manager** and click **Ports**. The Booster for HDMI with EDID Detective device will appear under the Other devices section, as shown below. An exclamation mark, within a yellow triangle, indicates that the device is not recognized by Windows®.



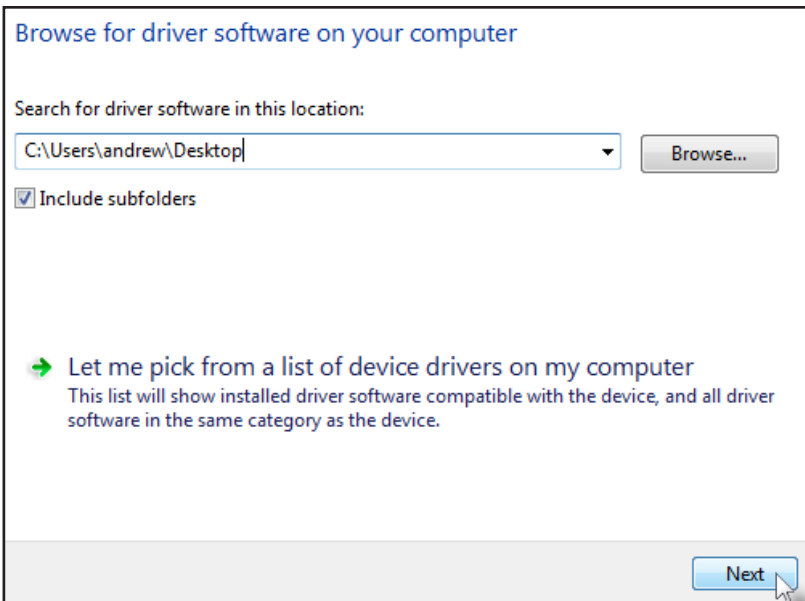
6. Right-click on the HDMI-EDID BOOSTER device and select **Update Driver Software...** from the context menu.

(continued on next page)

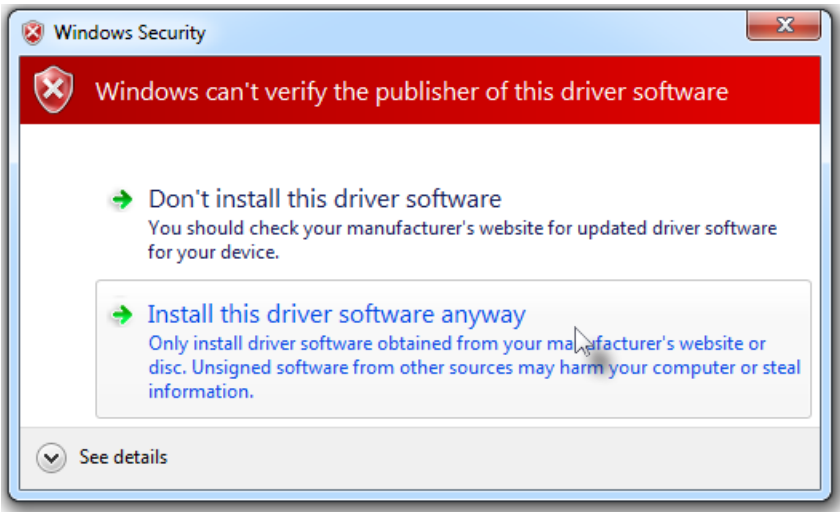
7. Select **Browse my computer for driver software** on the Update Driver Software dialog.



8. On the following dialog, click the **Browse...** button and select the location of the .inf file, which was extracted from the .zip file in step 2. Then, click the **Next** button.



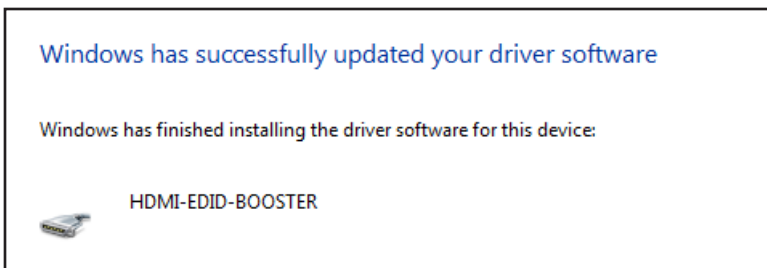
9. While attempting to install the driver, the following dialog will be displayed:



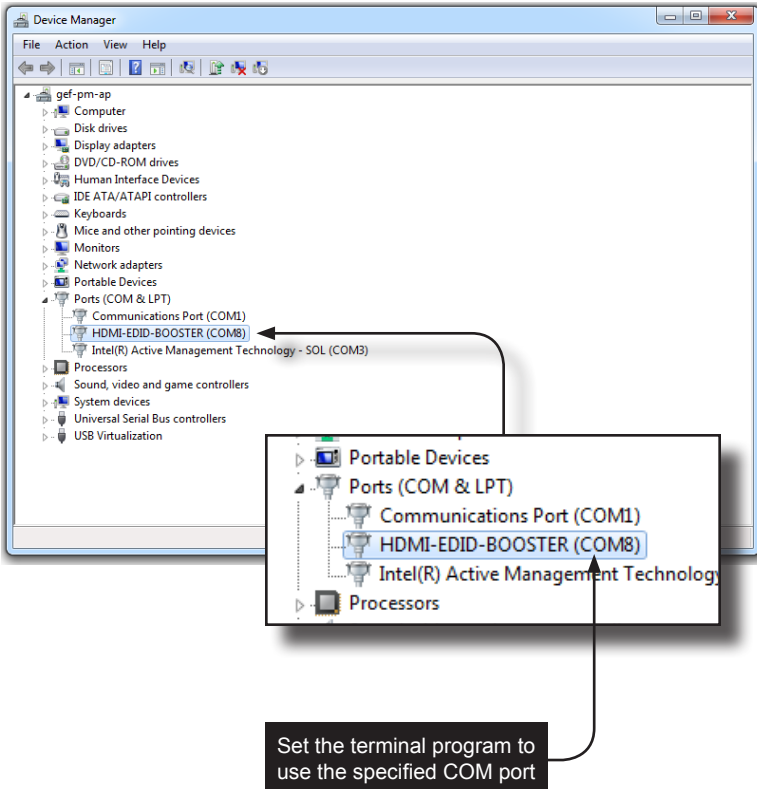
10. Select **Install this software anyway**.

The driver installation may take a couple of minutes.

11. Once the driver has installed, a dialog with the following message will be displayed. Click the **Close** button to complete the installation.



9. Verify the installation of the driver by going to **Control Panel > Device Manager** and clicking **Ports**. The Booster for HDMI with EDID Detective will be listed, along with the virtual COM port that should be used when issuing commands to the booster.



# Commands

Command	Description
#cdr	De-emphasis control; enable/disable CDR bypass
#ddcmode	Sets the DDC mode
#de	Sets the de-emphasis on the output
#edidbatolo	Copies the specified EDID bank to the local input
#ediddetolo	Set to default EDID on local input
#ediddstoba	Read downstream EDID and stores in EDID Bank
#ediddstolo	Read the downstream EDID and stores in the local input
#eq	Adjusts the equalizer settings
#eqstat	Displays the current equalizer status
#eredidbank	Erases the specified EDID bank
#fadefault	Resets the booster to factory-default settings
#fw_upgrade	Updates the booster firmware
#help	Displays the list of available commands
#loedidtoba	Loads an EDID file to the specified EDID bank
#maskout	Enables / disabled video output
#prbaedid	Displays the EDID in the specified bank
#prdsedid	Displays the downstream EDID
#prloedid	Displays the EDID stored in the local input
#saveloedid	Saves the EDID on the local input to a file
#show_ver_data	Displays the current hardware and firmware version
#vstat	Displays the signal loss on the input

## #cdr

The #cdr command provides de-emphasis control and disables / enables CDR bypass. This feature must be *enabled* before using the #de command.

### Syntax

```
#cdr param1
```

### Parameters

*param1* Value [0 ... 1]

Value	Description
0	CDR disable
1	CDR enable

### Example

```
#cdr 1
```

## #ddcmode

The `#ddcmode` command sets the DDC mode. Use this command to enable / disable HDCP with the local EDID or use EDID pass-through (HDCP enabled).

### Syntax

```
#ddcmode param1
```

### Parameters

*param1* Value [0 ... 2]

Value	Description
0	Local EDID with HDCP enable
1	Local EDID with HDCP disable
2	EDID pass-through with HDCP enable

### Example

```
#ddcmode 2
```



## #de

The `#de` command sets the de-emphasis on the output in order to improve performance when long cables are used on the input. The default setting is `param1 = 0`. De-emphasis control must be *enabled* before using this command. See the `#cdr` command for more information.

### Syntax

```
#de param1
```

### Parameters

*param1* Value [0 ... 3]

Value	Gain (dB)
0	0
1	-3
2	-6
3	-9

### Example

```
#de 2
```

## #edidbatolo

The #edidbatolo command loads the EDID from the specified EDID bank and writes it to the local input.

### Syntax

```
#edidbatolo param1
```

### Parameters

<i>param1</i>	EDID bank	[1 ... 6]
---------------	-----------	-----------

### Example

```
#edidbatolo 2  
EDID from bank 2 stored to local
```

## #ediddetolo

The #ediddetolo command reads the specified default EDID and stores it in the local input.

### Syntax

```
#ediddetolo param1
```

### Parameters

<i>param1</i>	EDID bank	[1 ... 6]
---------------	-----------	-----------

### Example

```
#ediddetolo 5  
Default EDID 5 stored to local
```

## #ediddstoba

The #ediddstoba command reads the downstream EDID and stores it to the specified EDID bank.

### Syntax

```
#ediddstoba param1
```

### Parameters

<i>param1</i>	EDID bank	[1 ... 6]
---------------	-----------	-----------

### Example

```
#ediddstoba 3  
Downstream EDID stored in bank 3
```

## #ediddstolo

The #ediddstolo command reads the downstream EDID and stores it to the local input.

### Syntax

```
#ediddstolo
```

### Parameters

*None*

### Example

```
#ediddstolo  
Downstream EDID stored to local
```

## #eq

The #eq command adjusts the equalizer setting in order to optimize performance based on the length of cable being used. This command is identical to manual adjusting the EQ rotary switch on the side of the booster. In general, use higher gain settings when using long cables and low gain settings when using short cables. The default setting is *param1* = 0.

Use the #eqstat command to display the current equalizer setting.

### Syntax

```
#eq param1
```

### Parameters

*param1*

Value

[0 ... 7]

Value	Description
0	0 dB
1	10 dB
2	16 dB
3	19 dB
4	23 dB
5	25 dB
6	26 dB
7	27 dB

### Example

```
#eq 4
```



## #fadefault

The #fadefault command resets the booster to factory-default settings:

Setting	Value (default)	Related command
EQ	0 dB	#eq
CDR bypass	Enable	#cdr
Clock channel	PLL	#clkmode
De-emphasis control	0	#de
Video out	Enable	#maskout
EDID lock	Disable	#lock_edid

### Syntax

```
#fadefault
```

### Parameters

*None*

### Example

```
#fadefault  
Settings were set to default
```

## #fw\_upgrade

The #fw\_upgrade command is used to update the Booster for HDMI with EDID Detective firmware. See the [Firmware Upgrade Procedure](#) for details on using this command.

### Syntax

```
#fw_upgrade
```

### Parameters

*None*

### Example

See the [Firmware Upgrade Procedure](#).





## #loedidtoba

The #loedidtoba command loads an EDID file and stores it in the specified EDID bank. When uploading the EDID file, use the YModem protocol. This process can be selecting **Transfer > Send file...** within Windows® Hyperterminal.

### Syntax

```
#loedidtoba param1
```

### Parameters

<i>param1</i>	EDID bank	[1 ... 6]
---------------	-----------	-----------

### Notes

The "c" character will continue to be echoed to the terminal until the file transfer is initiated.

### Example

```
#loedidtoba 4  
Waiting for file to transfer to bank 4  
CCCC
```

## #loedidtolo

The #loedidtolo command loads an EDID file and stores it in the local EDID (local input). When uploading the EDID file, use the YModem protocol. This process can be selected **Transfer > Send file...** within Windows® Hyperterminal.

### Syntax

```
#loedidtolo param1
```

### Parameters

*None*

### Notes

The "c" character will continue to be echoed to the terminal until the file transfer is initiated.

### Example

```
#loedidtolo
```

```
Waiting for the file to be sent ... (press 'a' to abort).  
CCCC
```

## #maskout

The #maskout command enables / disables the video output.

### Syntax

```
#maskout param1
```

### Parameters

*param1*

Value

[0 ... 1]

Value	Description
0	Enable video (masking OFF)
1	Disable video (masking ON)

### Example

```
#maskout 1  
Video Disabled
```



## #prdsedid

The #prdsedid command displays the downstream EDID.

### Syntax

```
#prdsedid
```

### Parameters

*None*

### Example

```
#prdsedid 1
Block 0:
00 FF FF FF FF FF FF 00
10 AC 54 40 55 34 31 42
0F 14 01 03 80 2C 19 78
EE EE 95 A3 54 4C 99 26
0F 50 54 A5 4B 00 71 4F
81 80 A9 C0 01 01 01 01
01 01 01 01 01 01 30 2A
40 C8 60 84 64 30 18 50
13 00 BB F9 10 00 00 1E
00 00 00 FF 00 43 32 30
31 52 30 34 45 42 31 34
55 0A 00 00 00 FC 00 44
45 4C 4C 20 45 32 30 31
30 48 0A 20 00 00 00 FD
00 38 4C 1E 53 10 00 0A
20 20 20 20 20 20 00 7C
```

## #prloedid

The #prloedid command displays the EDID stored in the local input.

### Syntax

```
#prloedid
```

### Parameters

*None*

### Example

```
#prloedid 3
Block 0:
00 FF FF FF FF FF FF 00
3D CB 73 0A 00 00 00 00
00 14 01 03 80 00 00 78
0A DA FF A3 58 4A A2 29
17 49 4B 00 00 00 01 01
01 01 01 01 01 01 01 01
01 01 01 01 01 01 02 3A
80 18 71 38 2D 40 58 2C
45 00 BA 88 21 00 00 1E
01 1D 80 18 71 1C 16 20
58 2C 25 00 BA 88 21 00
00 9E 00 00 00 FC 00 44
54 52 2D 34 30 2E 32 0A
20 20 20 20 00 00 00 FD
00 17 3D 0F 44 0F 00 0A
20 20 20 20 20 20 01 8D
```

```
Block 1:
02 03 55 71 4F 90 05 20
04 03 02 07 06 01 0F 0E
0B 0A 24 23 38 09 7F 07
0F 7F 07 17 07 50 3F 06
C0 4D 02 00 57 06 00 5F
7E 01 67 54 00 83 4F 00
00 7F 03 0C 00 22 00 B8
2D E0 00 00 00 00 80 11
06 08 00 10 28 00 33 38
00 40 43 48 00 50 53 58
00 E3 05 1F 01 01 1D 00
72 51 D0 1E 20 6E 28 55
00 BA 88 21 00 00 1E 8C
0A D0 8A 20 E0 2D 10 10
3E 96 00 BA 88 21 00 00
18 00 00 00 00 00 00 4F
```



## #show\_ver\_data

The #show\_ver\_data command displays the current hardware and firmware version.

### Syntax

```
#show_ver_data
```

### Parameters

*None*

### Example

```
#show_ver_data
```

```
EXT-HDBOOST-141
```

```
Release version: 2.24
```

```
Release date: Oct 23 2013
```

```
Release time: 11:54:21
```



## #vstat

The #vstat command displays the signal loss on the input.

### Syntax

```
#vstat param1
```

### Parameters

*None*

### Example

```
#vstat  
Signal_Detect: ON  
PLL_LOCK: LOSS
```





# Booster for HDMI with EDID Detective

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## Default EDID Profiles

The Booster for HDMI with EDID Detective comes 6 pre-programmed EDID profiles. The details of each default EDID profile is described below.

EDID Profile	Supported Features
1	640 x 480 @ 60Hz (IBM, VGA) 1920x1080i @ 50Hz - HDTV (16:9, 1:1) [Native] 1280x720p @ 50Hz - HDTV (16:9, 1:1) 720x576p @ 50Hz - EDTV (4:3, 16:15) 720x576p @ 50Hz - EDTV (16:9, 64:45) 1920x1080p @ 50Hz - HDTV (16:9, 1:1) Audio Format #1 : LPCM, 8-Channel, 24-Bit, 20-Bit, 16-Bit Sampling Frequency : 48 kHz, 44.1 kHz, 32 kHz YCbCr 4:4:4, YCbCr 4:2:2
2	640 x 480 @ 60Hz (IBM, VGA) 1920x1080i @ 59.94/60Hz - HDTV (16:9, 1:1) [Native] 1280x720p @ 59.94/60Hz - HDTV (16:9, 1:1) 720x480p @ 59.94/60Hz - EDTV (16:9, 32:27) 720(1440)x480i @ 59.94/60Hz - SDTV (16:9, 32:27) 1920x1080p @ 59.94/60Hz - HDTV (16:9, 1:1) Audio Format #1 : LPCM, 8-Channel, 24-Bit, 20-Bit, 16-Bit Sampling Frequency : 48 kHz, 44.1 kHz, 32 kHz YCbCr 4:4:4, YCbCr 4:2:2
3	640 x 480 @ 60Hz (IBM, VGA) 1920x1080i @ 50Hz - HDTV (16:9, 1:1) [Native] 1280x720p @ 50Hz - HDTV (16:9, 1:1) 720x576p @ 50Hz - EDTV (4:3, 16:15) 720x576p @ 50Hz - EDTV (16:9, 64:45) 1920x1080p @ 50Hz - HDTV (16:9, 1:1) Audio Format #1 : LPCM, 2-Channel, 24-Bit, 20-Bit, 16-Bit Sampling Frequency : 48 kHz, 44.1 kHz, 32 kHz YCbCr 4:4:4, YCbCr 4:2:2

EDID Profile	Supported Features
4	<p>640 x 480 @ 60Hz (IBM, VGA)  1920x1080i @ 59.94/60Hz - HDTV (16:9, 1:1) [Native]  1280x720p @ 59.94/60Hz - HDTV (16:9, 1:1)  720x480p @ 59.94/60Hz - EDTV (16:9, 32:27)  720(1440)x480i @ 59.94/60Hz - SDTV (16:9, 32:27)  1920x1080p @ 59.94/60Hz - HDTV (16:9, 1:1)  Audio Format #1 : LPCM, 2-Channel, 24-Bit, 20-Bit, 16-Bit  Sampling Frequency : 48 kHz, 44.1 kHz, 32 kHz  YCbCr 4:4:4, YCbCr 4:2:2</p>
5	<p>720 x 400 @ 70Hz (IBM, VGA)  640 x 480 @ 60Hz (IBM, VGA)  800 x 600 @ 60Hz (VESA)  1024 x 768 @ 60Hz (VESA)  1280x720 @ 60 Hz (16:9 Aspect Ratio)  1280x1024 @ 60 Hz (5:4 Aspect Ratio)  1920x1080i @ 59.94/60Hz - HDTV (16:9, 1:1)  1280x720p @ 59.94/60Hz - HDTV (16:9, 1:1)  720x480p @ 59.94/60Hz - EDTV (4:3, 8:9)  720x480p @ 59.94/60Hz - EDTV (16:9, 32:27)  1920x1080p @ 59.94/60Hz - HDTV (16:9, 1:1) [Native]  1440x480p @ 59.94/60Hz (4:3, 4:9 or 8:9<sup>3</sup> )  1440x480p @ 59.94/60Hz (16:9, 16:27 or 32:27<sup>3</sup> )  YCbCr 4:4:4, YCbCr 4:2:2  Audio Format #1 : LPCM, 8-Channel, 24-Bit, 20-Bit, 16-Bit  Sampling Frequency : 96 kHz, 88.2 kHz, 48 kHz, 44.1 kHz, 32 kHz  Audio Format #2 : LPCM, 2-Channel, 24-Bit, 20-Bit, 16-Bit  Sampling Frequency : 192 kHz, 176.4 kHz, 96 kHz, 88.2 kHz, 48 kHz, 44.1 kHz, 32 kHz  Audio Format #3 : DTS, 6-Channel, 1536 k Max bit rate  Sampling Frequency : 96 kHz, 88.2 kHz, 48 kHz, 44.1 kHz, 32 kHz  Audio Format #4 : AC-3, 6-Channel, 648 k Max bit rate  Sampling Frequency : 96 kHz, 88.2 kHz, 48 kHz, 44.1 kHz, 32 kHz</p>

EDID Profile	Supported Features
6	720 x 400 @ 70Hz (IBM, VGA) 640 x 480 @ 60Hz (IBM, VGA) 640 x 480 @ 67Hz (Apple, Mac II) 640 x 480 @ 72Hz (VESA) 640 x 480 @ 75Hz (VESA) 800 x 600 @ 60Hz (VESA) 800 x 600 @ 72Hz (VESA) 800 x 600 @ 75Hz (VESA) 832 x 624 @ 75Hz (Apple, Mac II) 1024 x 768 @ 60Hz (VESA) 1024 x 768 @ 70Hz (VESA) 1024 x 768 @ 75Hz (VESA) 1280 x 1024 @ 75Hz (VESA) 1152 x 870 @ 75Hz (Apple, Mac II) 1152x864 @ 75 Hz (4:3 Aspect Ratio) 1280x800 @ 60 Hz (16:10 Aspect Ratio) 1280x960 @ 60 Hz (4:3 Aspect Ratio) 1280x1024 @ 60 Hz (5:4 Aspect Ratio) 1440x900 @ 75 Hz (16:10 Aspect Ratio) 1680x1050 @ 60 Hz (16:10 Aspect Ratio) 1600x1200 @ 60 Hz (4:3 Aspect Ratio) 1920x1080p @ 59.94/60Hz - HDTV (16:9, 1:1) [Native] 1280x720p @ 59.94/60Hz - HDTV (16:9, 1:1) 1920x1080i @ 59.94/60Hz - HDTV (16:9, 1:1) 720x480p @ 59.94/60Hz - EDTV (16:9, 32:27) 1920x1080p @ 23.97/24Hz - HDTV (16:9, 1:1) 1920x1080p @ 29.97/30Hz - HDTV (16:9, 1:1) 640x480p @ 59.94/60Hz - EDTV (4:3, 1:1) YCbCr 4:4:4, YCbCr 4:2:2 Audio Format #1 : LPCM, 2-Channel, 24-Bit, 20-Bit, 16-Bit Sampling Frequency : 48 kHz, 44.1 kHz, 32 kHz

# Installing the Gefen EDID Tool+



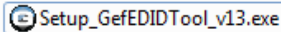
**IMPORTANT:** The Gefen EDID Tool+ application, User Manual, and Firmware (See [Firmware Upgrade Procedure](#)) can be downloaded from the Support Section of the Gefen web site under [EDID Storage Detectives](#). Before launching the Gefen EDID Tool+, make sure that a USB cable is connected between the Booster for HDMI with EDID Detective and the computer that is running the Gefen EDID Tool+.

The Gefen EDID Tool+ is a free downloadable application from Gefen that provides EDID management for select Booster and Detective-based units using an intuitive Windows® interface. Available EDID Tool+ features depend on which Gefen EDID Tool+ compatible product is being used.

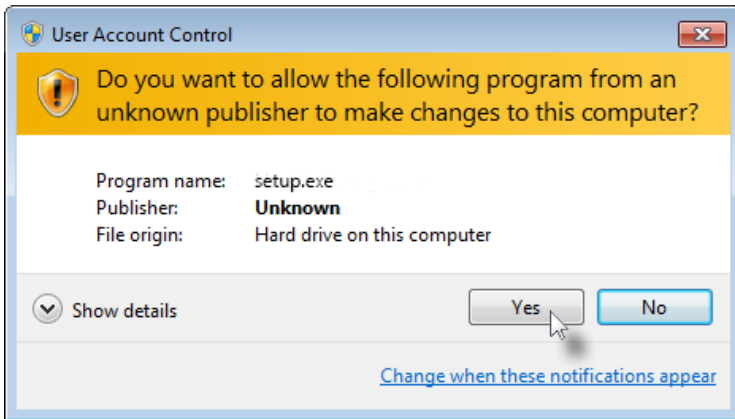
1. Extract the contents of the .zip file to a folder on the Windows® Desktop.

There will be two files within the folder: `setup.exe` and the user manual for the Gefen EDID Tool+.

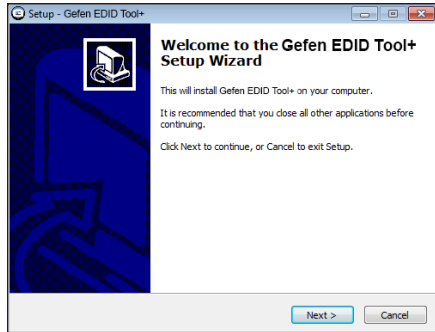
2. Double-click the `setup.exe` file to launch the installation Wizard.



If the following dialog box is displayed, then click **Yes** to continue with the installation Wizard.

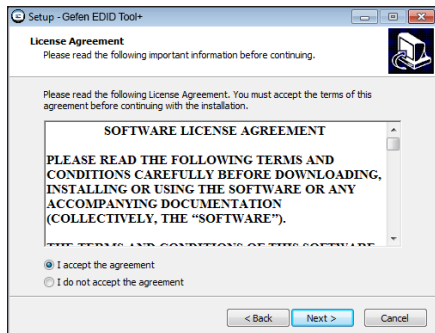


- The **Welcome** dialog box will be displayed.
- Click the **Next** button.

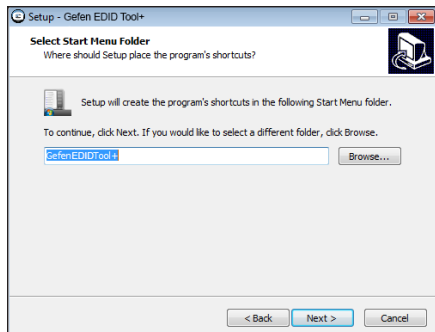


- The **Software License Agreement** dialog will be displayed.

Click the radio button next to **I accept the agreement**, then click the **Next** button.



- The **Select Destination Location** dialog will be displayed.



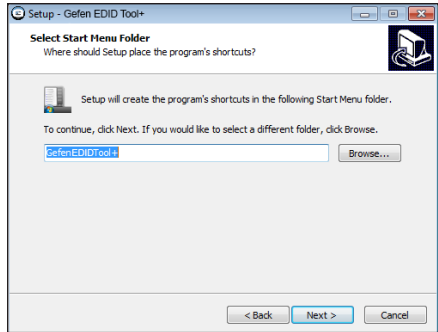
The default installation path is: C:\Program Files (x86)\Gefen EDID Tool+.

- Click the **Browse...** button to change the installation path. Otherwise, click the **Next** button to continue with the default installation path.



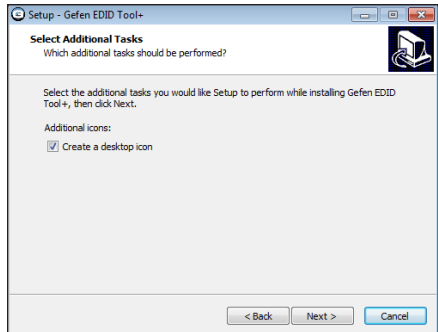
## Installing the Gefen EDID Tool+

8. Select the Start Menu Folder where the application icon will be created. The default folder name is **Gefen Edid Tool+**.
9. Click the **Next** button.



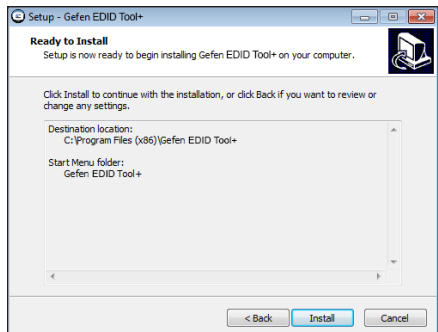
10. The **Select Additional Tasks** dialog will be displayed.

By default, the **Create a desktop icon** check box is selected. If a desktop icon is not desired, check this box to deselect this task. Otherwise, click the **Next** button to continue.



11. The **Ready to Install** dialog will be displayed.

Click the **Install** button to begin the installation process.



# Firmware Upgrade Procedure

The following items are required to update firmware:

- Booster for HDMI with EDID Detective
- Computer running Windows XP
- Terminal-emulation program (e.g. HyperTerminal)
- USB to Mini-USB cable
- Firmware file

1. Download the firmware file from the Gefen Web site.
2. Extract the contents of the .zip file to the Windows® Desktop. The .zip file will contain the file: HdmiEdidP\_[version].bin.
3. Connect the USB cable between the computer and the Mini-USB port on the booster.
4. Launch Hyperterminal and select the Virtual COM Port. For more information see [Using the Virtual COM Port](#).
5. Type the command: #fw\_upgrade.
6. The following will be displayed on the terminal screen:

```
#fw_upgrade  
CCC
```

The "C" character will continue to be echoed to the terminal until the file transfer is initiated.

7. In Hyperterminal, click **Transfer > Send File...**
8. Select the HdmiEdidP\_[version].bin file.
9. Select **YModem** from the Protocol drop-down list and click the **OK** button.

The firmware update procedure will begin. This process should take about 15 seconds. After the firmware update is successful, the following will be displayed in the terminal program:

```
HdmiEdidP_[version].bin  
Download successfully
```

# Specifications

## Supported Formats

Resolutions (max.)	<ul style="list-style-type: none"> <li>• 3840 x 2160 (Ultra HD 4K x 2K)</li> <li>• 2048 x 1536 (QXGA)</li> <li>• 1920 x 1200 (WUXGA)</li> <li>• 1080p Full HD</li> </ul>
--------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------

## Electrical

Maximum Pixel Clock	<ul style="list-style-type: none"> <li>• 300 MHz</li> </ul>
EDID Bank Size (each bank)	<ul style="list-style-type: none"> <li>• 256 bytes</li> </ul>
EDID Write Protect Switch	<ul style="list-style-type: none"> <li>• 1 x slide-type</li> </ul>
EDID Program Button	<ul style="list-style-type: none"> <li>• 1 x tact-type</li> </ul>
EDID Programming Switches	<ul style="list-style-type: none"> <li>• 3 x DIP-type</li> </ul>
HDCP Pass-through / Block Switch	<ul style="list-style-type: none"> <li>• 1 x DIP-type</li> </ul>
EQ Level Switch	<ul style="list-style-type: none"> <li>• 1 x 8-position, rotary-type</li> </ul>

## Connectors

Video Input	<ul style="list-style-type: none"> <li>• 1 x HDMI Type A 19-pin, female, locking</li> </ul>
Video Output	<ul style="list-style-type: none"> <li>• 1 x HDMI Type A 19-pin, female, locking</li> </ul>
USB	<ul style="list-style-type: none"> <li>• Mini-B</li> </ul>

## Operational

Power Input	<ul style="list-style-type: none"> <li>• 1 x 5V DC</li> </ul>
Power Consumption	<ul style="list-style-type: none"> <li>• 1.5W (max.)</li> </ul>

## Physical

Dimensions (W x H x D)	<ul style="list-style-type: none"> <li>• 2.7" x 1.3" x 1.8" (68mm x 33mm x 46mm)</li> </ul>
Unit Weight	<ul style="list-style-type: none"> <li>• 0.2 lbs (0.08 kg)</li> </ul>



Stretch it, Switch it, Split it, Control it.  
Gefen's got it. ®

20600 Nordhoff St., Chatsworth CA 91311  
1-800-545-6900 818-772-9100 fax: 818-772-9120  
[www.gefen.com](http://www.gefen.com) [support@gefen.com](mailto:support@gefen.com)



This product uses UL or CE listed power supplies.

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