ULTRA HD

Booster for HDMI with EDID Detective

EXT-HDBOOST-141

User Manual

Release A4

Gefen

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.

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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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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registered trademarks of HDMI Licensing in the United States and other countries.

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

01 Getting Started

Panel Layout

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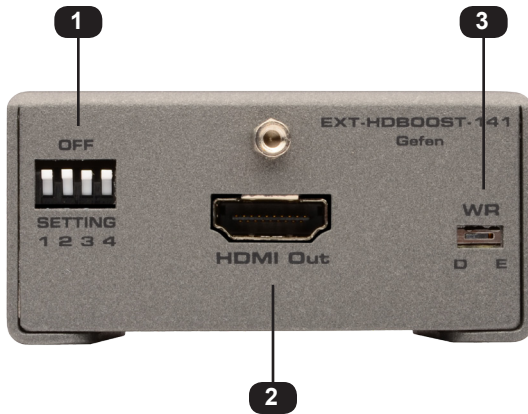
ID	Name	Description
1	DIP switches	Use this DIP switch bank to select a pre-programmed EDID. See EDID Programming for more information.
2	HDMI Out	Connect the HDTV display to this port using an HDMI cable.
3	WR	Write-enable switch. Flip this switch to the "E" position to allow the booster to be programmed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

Back Panel
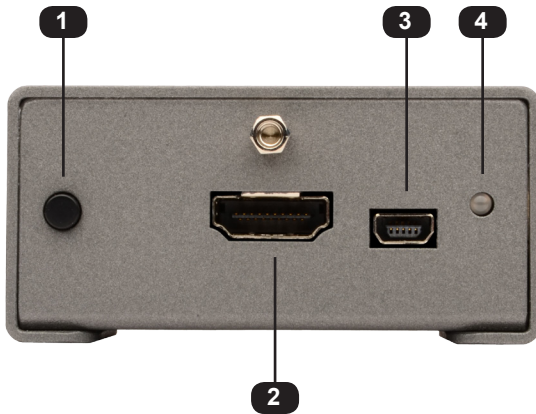
ID	Name	Description
1	Prog	Press this button to program the unit with the desired EDID. See EDID Programming for more information.
2	HDMI In	Connect the Hi-Def source to this port using an HDMI cable.
3	USB	Connect a USB cable to provide an alternate power source for the booster.
4	Power	This LED will 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
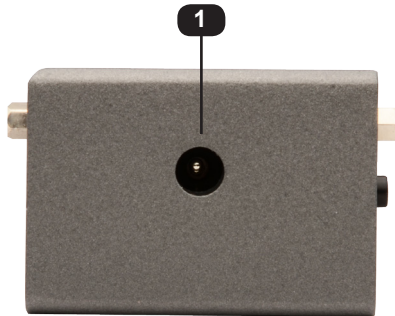
ID	Name	Description
1	5V DC	Connect the included 5V DC power supply to this power receptacle.

Installation

Connecting the Booster for HDMI with EDID Detective

> **STOP:** Before connecting the Booster for HDMI with EDID
> Detective, 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

Ultra HD Source

Booster for HDMI w/ EDID Detective

Ultra HD Display

ULTRA HD
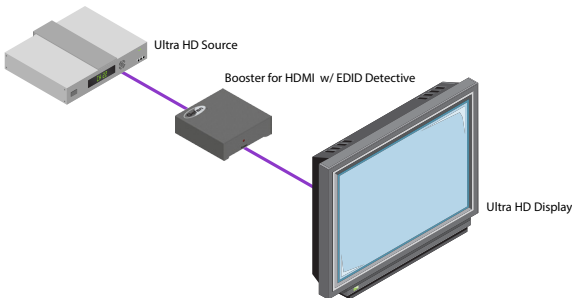
Booster for HDMI with EDID Detective

02 Operating the Booster for HDMI with EDID Detective

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.

Press the **Prog** button

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	🟢	• Booster is powered. • EDID recorded successfully.
	Flashing red	🔴	• Bad / corrupt EDID at sink. • No sink device detected. • Write-protected booster (WR = D).
	Flashing green	🟢	• EDID is being recorded.

7. 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.

8. 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: T**he 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 swtiches to the OFF (up) position, as shown below.

DIP switches in OFF position
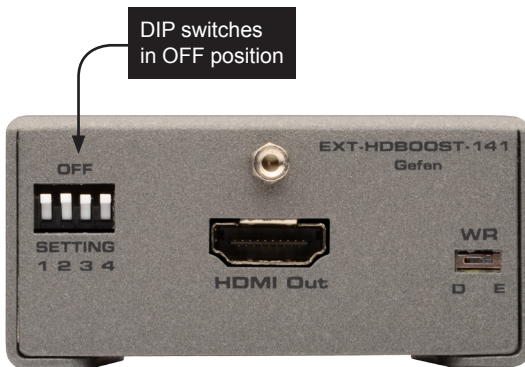
4.   Connect an HDMI cable from the sink device to the **HDMI Out** port on the booster. The **Power** LED will glow bright green if the sink device contains a valid EDID. If the EDID is corrupt or invalid, then the **Power** LED will flash bright red.

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.

Use a small flathead screwdriver to adjust the EQ switch
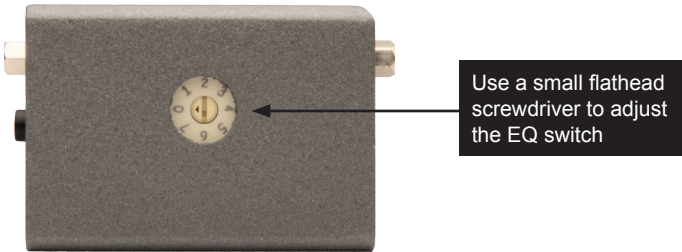
Switch Position	Signal gain	Switch Position	Signal gain
0	0 dB	4	23 dB
1	10 dB	5	25 dB
2	16 dB	6	26 dB
3	19 dB	7	27 dB

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.

ULTRA HD

Booster for HDMI with EDID Detective

03 Advanced Operation

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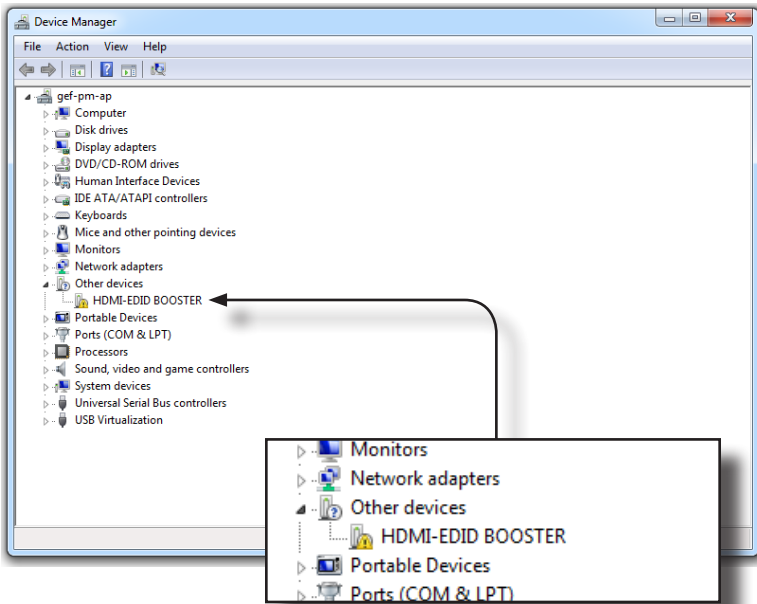
6. Right-click on the HDMI-EDID BOOSTER device and select **Update Driver Software...** from the context menu.

7. Select **Browse my computer for driver software** on the Update Driver Software dialog.
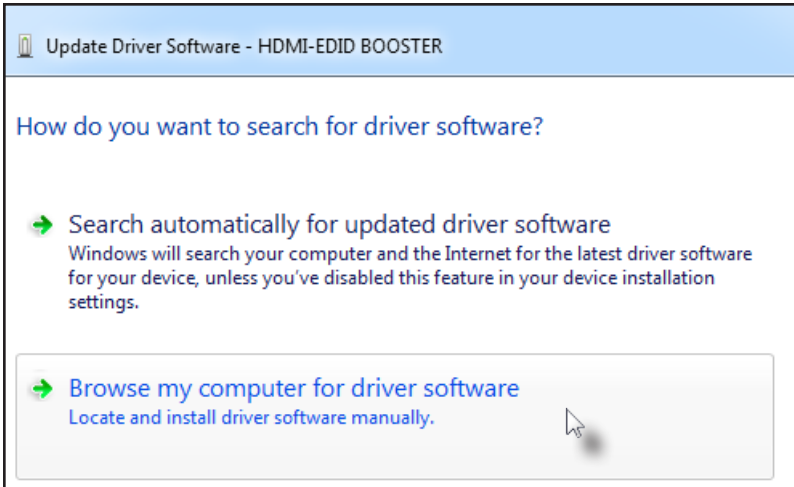
8. On the following dialog, click the **Browse...** button and select the location of the .inf file, which was extracted from the .zip file in step 2. Then, click the **Next** button.
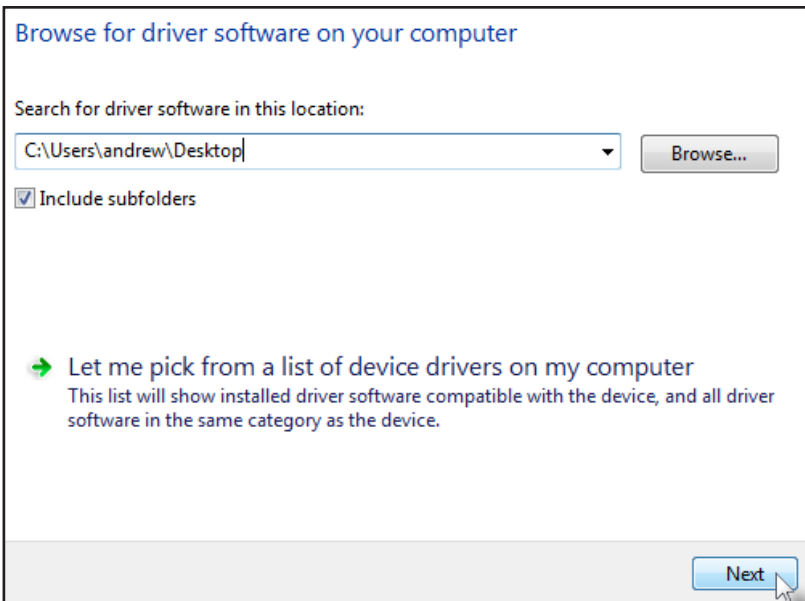
9. While attempting to install the driver, the following dialog will be displayed:
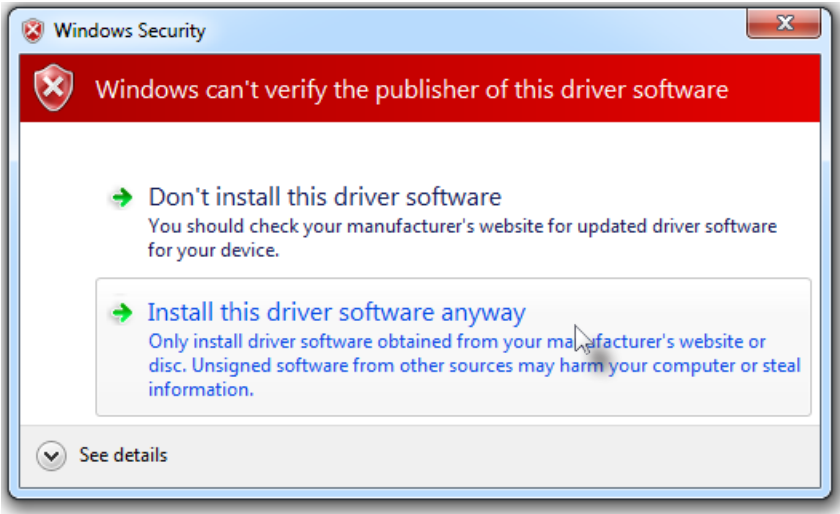
10. Select **Install this software anyway**.

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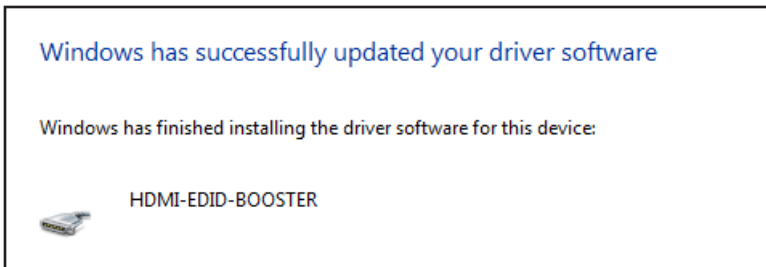
9. Verify the installation of the driver by going to **Control Panel** > **Device Manager** and clicking **Ports**. The Booster for HDMI with EDID Detective will be listed, along with the virtual COM port that should be used when issuing commands to the booster.

Set the terminal program to use the specified COM port
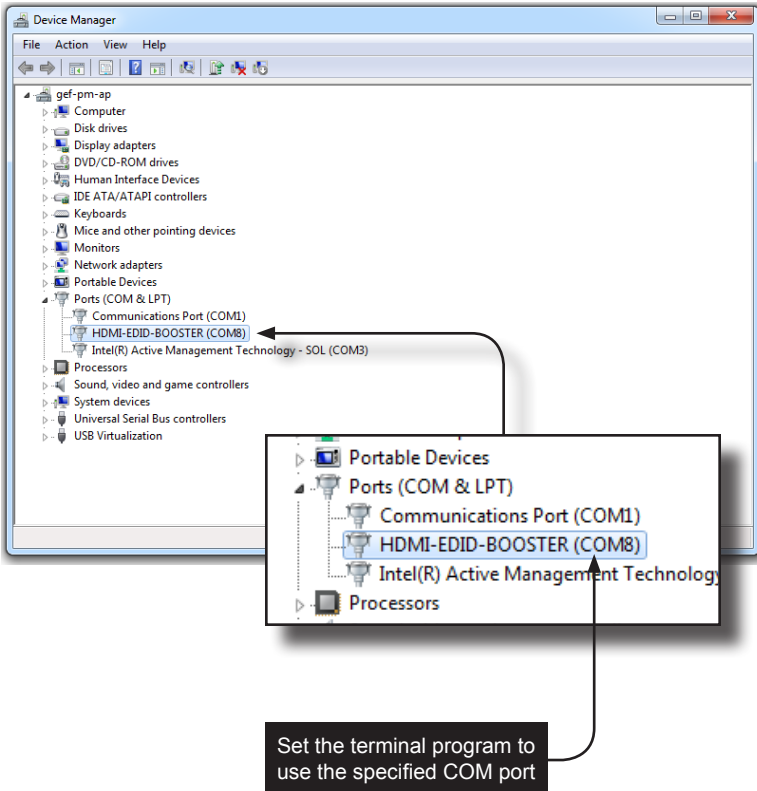
Commands

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

param1   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

param1   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

param1   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
```

#eqstat

The #eqstat command displays the current equalizer setting. Use the #eq command to adjust the equalizer setting.

Syntax

#de param1

Parameters

None

Example

#eqstat

#eredidbank

The #eredidbank command erases the specified EDID bank.

Syntax

#eredidbank param1

Parameters

param1   Bank   [1 ... 6]

Example

#eredidbank 2

#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.

#help

The #help command displays the list of available commands. The #help command can also be used to provide help on a specific command.

Syntax

```
#help [param1]
```

Parameters

param1   Command (optional)

Notes

When asking for help on a specific command, the "#" character must be included as part of the command.

Examples

```
#help #ediddstolo

Cmd #ediddstolo: Reads EDID file from Down Stream and stores it in
Local EDID.
Example: #ediddstolo



#help

Available cmds:


#help
#show_ver_data
#loedidtoba
#ediddstolo
#ediddetolo
#edidbatolo
#ediddstoba
#prloedid
...
...
...
#fadefault
#lock_edid
#fw_upgrade
```

#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

param1   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 selecting **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
```

#prbaedid

The #prbaedid command displays the EDID stored in the specified EDID bank.

Syntax

```
#prbaedid param1
```

Parameters

param1   EDID bank   [1 ... 6]

Example

```
#prbaedid 5
Block 0:
0x00 0xFF 0xFF 0xFF 0xFF 0xFF 0xFF 0x00
0x10 0xAC 0x35 0x40 0x4C 0x32 0x33 0x32
0x31 0x13 0x01 0x03 0x80 0x41 0x29 0x78
0xEA 0x8F 0x95 0xAD 0x4F 0x32 0xB2 0x25
0x0F 0x50 0x54 0xA5 0x4B 0x00 0x81 0x80
0xA9 0x40 0xD1 0x00 0xD1 0x40 0x71 0x4F
0x81 0x00 0xB3 0x00 0x01 0x01 0xB0 0x68
0x00 0xA0 0xA0 0x40 0x2E 0x60 0x30 0x20
0x36 0x00 0x81 0x90 0x21 0x00 0x00 0x1E
0x00 0x00 0x00 0xFF 0x00 0x47 0x35 0x30
0x31 0x48 0x39 0x43 0x32 0x32 0x33 0x32
0x4C 0x0A 0x28 0x3C 0x80 0xA0 0x70 0xB0
0x23 0x40 0x30 0x20 0x36 0x00 0x81 0x91
0x21 0x00 0x00 0x1C 0x00 0x00 0x00 0xFD
0x00 0x31 0x56 0x1D 0x71 0x1C 0x00 0x0A
0x20 0x20 0x20 0x20 0x20 0x20 0x00 0x41
```

#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
```

#saveloedid

The `#saveloedid` command saves the local EDID as a `.bin` or `.txt` file.
When saving the EDID to a file, use the YModem protocol. This process can be selecting
Transfer > Receive file... within Windows® Hyperterminal. Once the file is saved, the
message "Saving EDID successfully" will be displayed.

Syntax

```
#saveloedid param1
```

Parameters

param1   Filename (.bin or .txt)

Example

```
#saveloedid myedid.bin
Waiting for the file to be received ... (press 'a' to abort)
```

Notes

The `#saveloedid` command is useful for saving data in EDID banks. Once the data in an
EDID bank has been overwritten, the original data cannnot be restored. To backup the data
in an EDID bank, do the following:

1.   Copy the EDID data from the desired EDID bank to the local input using the
      `#edidbatolo` command.

2.   Use the `#saveloedid` command to save the EDID data to a file.

#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
```

ULTRA HD

Booster for HDMI with EDID Detective

04   Appendix

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 | ```
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
``` |
| 5 | ```
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 8:9³ )
1440x480p @ 59.94/60Hz (16:9, 16:27 or 32:27³ )
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
``` |

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.

	🔘 Setup_GefEDIDTool_v13.exe

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

3.   The **Welcome** dialog box will be displayed.

4.   Click the **Next** button.

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

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

6.   The Select Destination Location dialog will be displayed.

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

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

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 deskop 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 .

5. Type the command: `#fw_upgrade`.

6. The following will be displayed on the terminal screen:

```
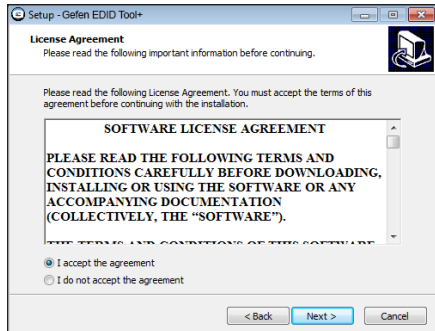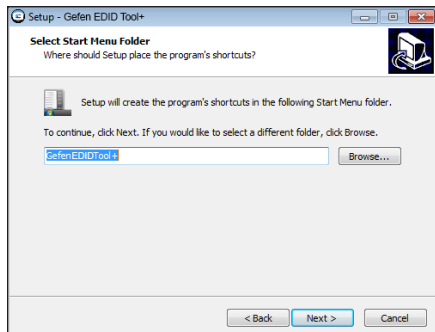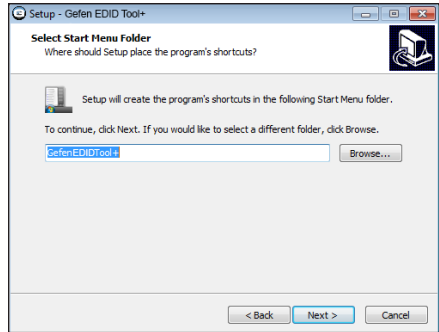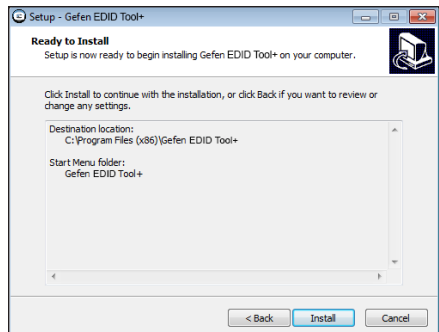#fw_upgrade
CCC
```

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.)	• 3840 x 2160 (Ultra HD 4K x 2K) • 2048 x 1536 (QXGA) • 1920 x 1200 (WUXGA) • 1080p Full HD

Electrical	
Maximum Pixel Clock	• 300 MHz
EDID Bank Size (each bank)	• 256 bytes
EDID Write Protect Switch	• 1 x slide-type
EDID Program Button	• 1 x tact-type
EDID Programming Switches	• 3 x DIP-type
HDCP Pass-through / Block Switch	• 1 x DIP-type
EQ Level Switch	• 1 x 8-position, rotary-type

Connectors	
Video Input	• 1 x HDMI Type A 19-pin, female, locking
Video Output	• 1 x HDMI Type A 19-pin, female, locking
USB	• Mini-B

Operational	
Power Input	• 1 x 5V DC
Power Consumption	• 1.5W (max.)

Physical	
Dimensions (W x H x D)	• 2.7" x 1.3" x 1.8" (68mm x 33mm x 46mm)
Unit Weight	• 0.2 lbs (0.08 kg)

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1-800-545-6900   818-772-9100   fax: 818-772-9120
www.gefen.com   support@gefen.com

This product uses UL or CE listed power supplies.