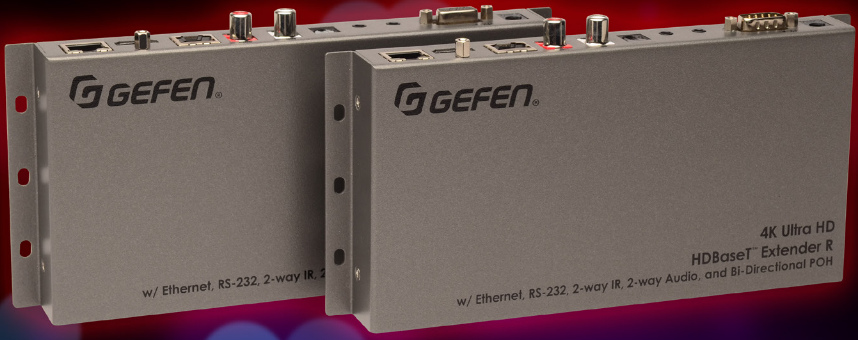
GEFEN
TOOLBOX

4K ULTRA HD
HDBaseT™ Extender
w/ RS-232, 2-way IR, and POH

EXT-UHDA-HBT2

User Manual


GEFEN
w/ Ethernet, RS-232, 2-way IR, 2
GEFEN
4K Ultra HD
HDBaseT™ Extender R
w/ Ethernet, RS-232, 2-way IR, 2-way Audio, and Bi-Directional POH

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

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.

Contacting Gefen Technical Support

Technical Support

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

Email

support@gefen.com

Web

http://www.gefen.com

Mailing Address

Gefen
Core Brands, LLC
c/o Customer Service
1800 S McDowell Blvd
Petaluma, CA 94954

Product Registration

Register your product here: http://www.gefen.com/kvm/Registry/Registration.jsp

Operating Notes

- The Gefen Syner-G™ Software Suite is a free downloadable application from Gefen that provides automatic download and installation of firmware upgrades as well as effortless configuration for this product.

  Download the application here: http://www.gefen.com/synerg/

- This product is only compatible with Gefen Syner-G 2.1.x and later.

4K Ultra HD HDBaseT™ Extender w/ Ethernet, RS-232, 2-way IR, 2-way Audio, and Bidirectional POH
is a trademark of Gefen, LLC.

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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 or CE-compliant power supplies.

Features and Packing List

Features

- Extends HDMI, Ethernet, RS-232, 2-way IR, and 2-way Audio over a single CAT-5e
    - ▶ 4K Ultra HD (3840 x 2160 @ 60Hz, 4:2:0, 8-bit), up to 330 feet/100 meters
    - ▶ 4K Ultra HD (3840 x 2160 @ 30Hz, 4:4:4, 8-bit), up to 330 feet/100 meters
    - ▶ 4K DCI-Cinema (4096 x 2160 @ 30Hz 4:4:4, 8-bit), up to 330 feet/100 meters
    - ▶ 1080p Full HD (1920 x 1080 @ 60Hz, 4:4:4, 12-bit), up to 330 feet/100 meters
    - ▶ 1080p Full HD (1920 x 1080 @ 60Hz, 4:4:4, 8-bit), up to 495 feet/150 meters
    - ▶ WUXGA (1920 x 1200 @ 60Hz, 8-bit), up to 495 feet/150 meters
- HDMI Features Supported:
    - ▶ HDMI 2.0
    - ▶ HDCP 2.2 and 1.4
    - ▶ 12-bit Deep Color
    - ▶ LPCM 7.1 audio, Dolby Atmos®, Dolby® TrueHD, DTS:X™, and DTS-HD Master Audio™ pass-through
    - ▶ 3DTV pass-through
    - ▶ CEC pass-through
    - ▶ Lip Sync pass-through
- IR extension from Sender to Receiver and from Receiver to Sender
- TOSLINK® Optical Digital Audio extension from Receiver to Sender
- Analog L/R Stereo Audio extension from Sender to Receiver
- Bi-Directional POH (Power Over HDBaseT™) feature provides power to the Sender or the Receiver unit over the link cable - only one side needs external power
- Advanced EDID Management via Gefen Syner-G™ software
- Link Quality Monitoring via Gefen Syner-G™ software
- Firmware upgradable via USB, using Gefen Syner-G™ software
- Locking power connector
- Low profile, surface-mountable enclosures

Packing List

The 4K Ultra HD HDBaseT™ Extender w/ Ethernet, RS-232, 2-way IR, 2-way Audio, and Bidirectional POH 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 4K Ultra HD HDBaseT™ Extender w/ Ethernet, RS-232, 2-way IR, 2-way Audio, and Bidirectional POH (Sender)
- 1 x 4K Ultra HD HDBaseT™ Extender w/ Ethernet, RS-232, 2-way IR, 2-way Audio, and Bidirectional POH (Receiver)
- 1 x IR emitter
- 1 x IR extender
- 1 x DB-9 cable (M-F)
- 1 x 48V DC locking power supply
- 1 x Quick-Start Guide

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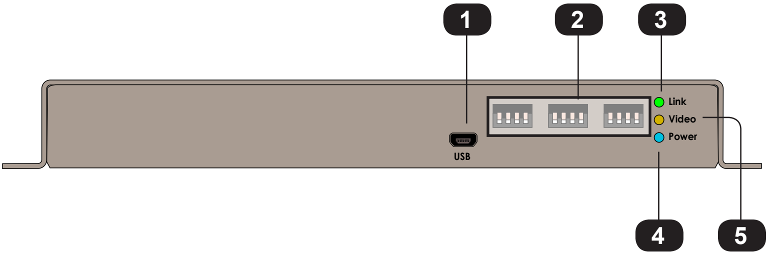
4K ULTRA HD

HDBaseT™ Extender

w/ Ethernet, RS-232, 2-way IR, 2-way Audio, and Bidirectional POH

1 Getting Started

Sender Unit


1
2
3
Link
Video
Power
USB
4
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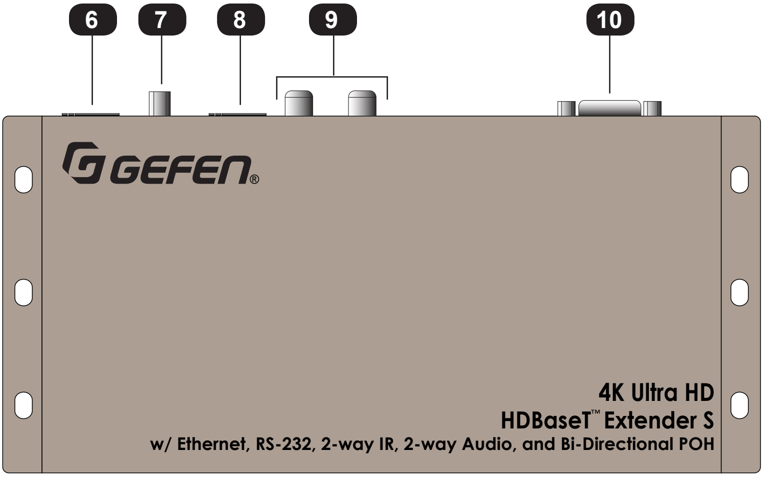
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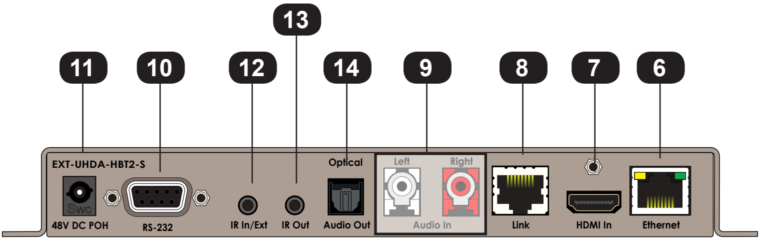
GEFEN®
4K Ultra HD
HDBaseT™ Extender S
w/ Ethernet, RS-232, 2-way IR, 2-way Audio, and Bi-Directional POH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12
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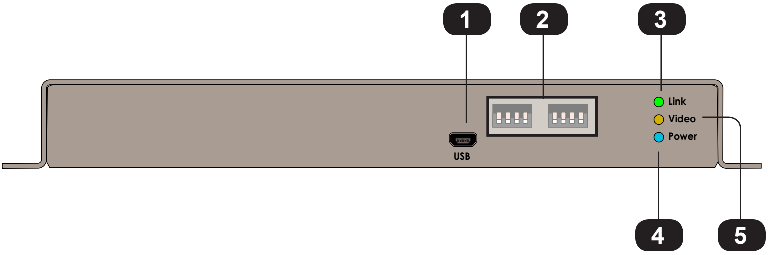
6
EXT-UHDA-HBT2-S
48V DC POH
RS-232
IR In/Ext
IR Out
Optical
Audio Out
Left
Right
Audio In
Link
HDMI In
Ethernet

ID	Name	Description
1	USB	For use with the Syner-G Software Suite. See Using Syner-G™ (page 24) for more information.
2	DIP switches	See DIP Switch Configuration (page 10) for more information.
3	Link	This LED indicator glows solid green when the Sender and Receiver unit are connected by a CAT-5 (or better) cable.
4	Power	This LED indicator glows solid blue when the Sender unit is powered.
5	Video	This LED indicator glows solid amber when a video source is connected to the Sender unit.
6	Ethernet	This port is used to extend a network device. Connect a CAT-5 (or better) cable from this port to the LAN.
7	HDMI In	Connect a 4K Ultra HD source to this HDMI port using an HDMI cable.
8	Link	Connect a CAT-5 (or better) cable from this port to the **Link** port on the Receiver unit.
9	Audio In (Left / Right)	Use L/R RCA audio cables to connect an analog audio source to these jacks.
10	RS-232	Connect the included RS-232 cable from this port to an automation device. See RS-232 Interface (page 19) for more information.
11	POH 48V DC	Connect the included 48V DC power supply to this connector.
12	IR In / Ext	Connect an IR extender (Gefen part no. EXT-RMT-EXTIRN) to this port.
13	IR Out	Connect an IR emitter (Gefen part no. EXT-2IREMIT) to this port.
14	Optical (Audio Out)	Connect an optical audio cable from this TOSLINK port to an A/V receiver.

Receiver Unit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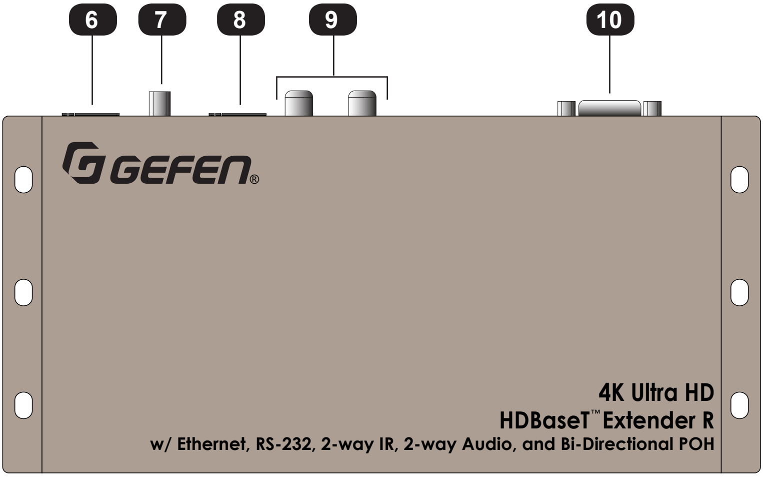
Link
Video
Power
USB
4
5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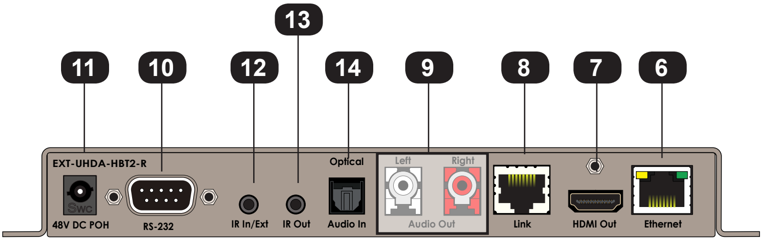
GEFEN®
4K Ultra HD
HDBaseT™ Extender R
w/ Ethernet, RS-232, 2-way IR, 2-way Audio, and Bi-Directional POH


13
11
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12
14
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EXT-UHDA-HBT2-R
Optical
Left
Right
48V DC POH
RS-232
IR In/Ext
IR Out
Audio In
Audio Out
Link
HDMI Out
Ethernet

ID	Name	Description
1	USB	For use with the Syner-G Software Suite. See Using Syner-G™ (page 24) for more information.
2	DIP switches	See DIP Switch Configuration (page 10) for more information.
3	Link	This LED indicator glows solid green when the Sender and Receiver unit are connected by a CAT-5 (or better) cable.
4	Power	This LED indicator glows solid blue when the Sender unit is powered.
5	Video	This LED indicator glows solid amber when a video source is connected to the Sender unit.
6	Ethernet	This port is used to extend a network device. Connect a CAT-5 (or better) cable from this port to the network device.
7	HDMI Out	Connect a 4K Ultra HD display to this HDMI port using an HDMI cable
8	Link	Connect a CAT-5 (or better) cable from this port to the **Link** port on the Sender unit.
9	Audio Out (Left / Right)	Use L/R RCA audio cables to connect an audio sink device to these jacks.
10	RS-232	Connect the included RS-232 cable from this port to an RS-232 device. See RS-232 Interface (page 19) for more information.
11	POH 48V DC	This power connector is not used.
12	IR In / Ext	Connect an IR extender (Gefen part no. EXT-RMT-EXTIRN) to this port.
13	IR Out	Connect an IR emitter (Gefen part no. EXT-2IREMIT) to this port.
14	Optical (Audio In)	Connect an optical audio cable from the sink device to this TOSLINK port.

Connection Instructions

▶ Video

1. Connect the included HDMI cable from the 4K Ultra HD source device to the **HDMI In** port on the Sender unit.

2. Connect an HDMI cable from the **HDMI Out** port on the Receiver unit to a 4K Ultra HD display.

▶ Audio

3. Connect a stereo RCA cable from an analog audio source to the **Audio In** ports on the Sender unit.

4. Connect a stereo RCA cable from the **Audio Out** ports on the Receiver unit to an A/V receiver.

5. Connect an optical audio cable from the 4K Ultra HD display to the **Optical Audio In** TOSLINK port on the Receiver unit.

6. Connect an optical audio cable from the **Optical Audio Out** TOSLINK port on the Sender unit to an A/V receiver.

▶ Link

7. Connect a shielded CAT-5 (or better) cable from the **Link** port on the Sender unit to the **Link** port on the Receiver unit.

Maximum Resolution	Mode	Distance
1920 x 1080p 60 Hz @ 8-bit	Long Reach mode	495 feet (150 meters)
3840 x 2160p 60 Hz @ 4:2:0	Normal mode	330 feet (100 meters)

See DIP Switch Configuration (page 10) for more information on setting the extension distance.

▶ Ethernet

8. Connect a CAT-5 (or better) cable from the LAN to the **Ethernet** port on the Sender unit.

9. Connect a CAT-5 (or better) cable from the **Ethernet** port on the Receiver unit to a network device.

- **RS-232 Control** (Optional)
  For more information see RS-232 Interface (page 19).

10. Connect the included DB-9 cable from the **RS-232** port on the Sender unit to the automation control device.

11. Connect a DB-9 cable from the **RS-232** port on the Receiver unit to the RS-232 device to be controlled.

- **IR Control** (Optional)
  For more information see Two-way IR Control (page 16).

12. Connect the included IR emitter to the **IR Out** port on the Sender unit.

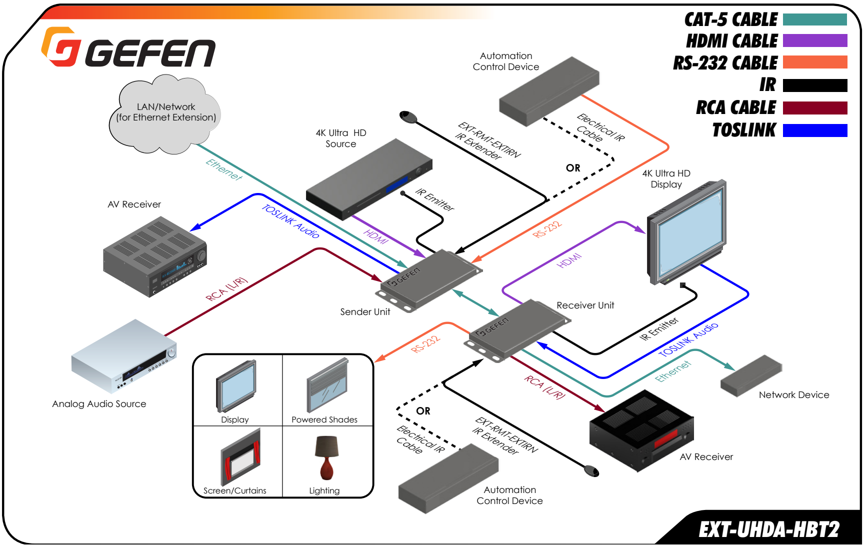
13. Connect the included IR extender to the **IR In/Ext** port on the Receiver unit.

- **Power**

14. Connect the included power supply to the **POH 48V DC** connector on either the Sender or Receiver unit. Power is supplied to the other unit over the **Link** connector.

15. Connect the power supply to an available electrical outlet.

Application Diagram


GEFEN
CAT-5 CABLE
HDMI CABLE
RS-232 CABLE
IR
RCA CABLE
TOSLINK
LAN/Network (for Ethernet Extension)
Automation Control Device
4K Ultra HD Source
EXT-RMT-EXTIRN IR Extender
Electrical IR Cable
OR
4K Ultra HD Display
Ethernet
AV Receiver
TOSLINK Audio
HDMI
IR Emitter
RS-232
HDMI
RCA (L/R)
Sender Unit
Receiver Unit
IR Emitter
TOSLINK Audio
Ethernet
RS-232
RCA (L/R)
Network Device
Analog Audio Source
Display
Powered Shades
Screen/Curtains
Lighting
OR
Electrical IR Cable
EXT-RMT-EXTIRN IR Extender
AV Receiver
Automation Control Device
EXT-UHDA-HBT2

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4K ULTRA HD

HDBaseT™ Extender

w/ Ethernet, RS-232, 2-way IR, 2-way Audio, and Bidirectional POH

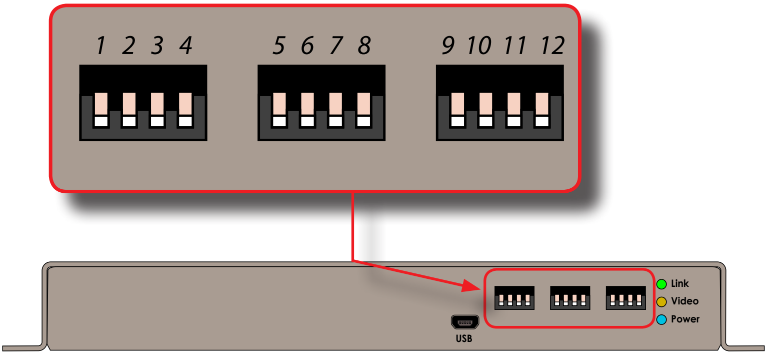
2 Basic Operation

Sender unit

The back panel of the Sender unit contains three banks of DIP switches. Each bank contains four DIP switches. These DIP switches control EDID, HPD, HDCP, IR, and HDBT mode. The *default* setting, for each DIP switch, is in the "down" (OFF) position.

Each DIP switch (1 - 12) is arranged from left to right. DIP switches 11 and 12 are not used. Although the DIP switch numbers do not appear on the unit, we have included them for easy reference.

If a DIP switch is in the "up" position, then it is ON. If a DIP switch is in the "down" position, then it is OFF.



DIP	Feature	Description
1	Local / pass-through EDID	▶ **ON** Allows all video and audio features of the connected device to be passed to the source device. ▶ **OFF** (default) Copies the downstream EDID locally in HDBT mode; modifies downstream EDID to support only up to 1080p60 8-bit in Long Reach mode.
2	HPD Control	▶ **ON** HPD will toggle, depending upon the HPD status of the display (sink) or source device. ▶ **OFF** (default) HPD remains high, even when the display is hot-plugged (disconnected then reconnected to the source device).

DIP	Feature	Description
3	Local / pass-through EDID	▶ **ON** EDID Lock *enabled*. The current (downstream) EDID will be stored on the input even if the unit is power-cycled. ▶ **OFF** (default) EDID Lock *disabled*.
4	HDCP Control	▶ **ON** Prevents HDCP content from passing through to the display (sink) device. ▶ **OFF** (default) Allows HDCP content to pass through to the display (sink) device.
5	Sender IR carrier filter	▶ **ON** IR carrier signal is stripped at the Sender unit. ▶ **OFF** (default) IR carrier signal is passed-through.
6	Receiver IR carrier filter	▶ **ON** IR carrier signal is stripped at the Receiver unit. ▶ **OFF** (default) IR carrier signal is passed-through.
7	IR Polarity	▶ **ON** Set to work with third-party IR extenders. ▶ **OFF** (default) Operates with Gefen part no. EXT-RMT-EXTIRN.
8	Long-Reach Mode	▶ **ON** Resolutions up to 1080p Full HD can be extended to a maximum distance of 495 feet (150 meters). Color depth is limited to 8-bit. ▶ **OFF** (default) HDBT mode. Resolutions up to 4K x 2K, can be extended up to 330 feet (100 meters) with deep color.

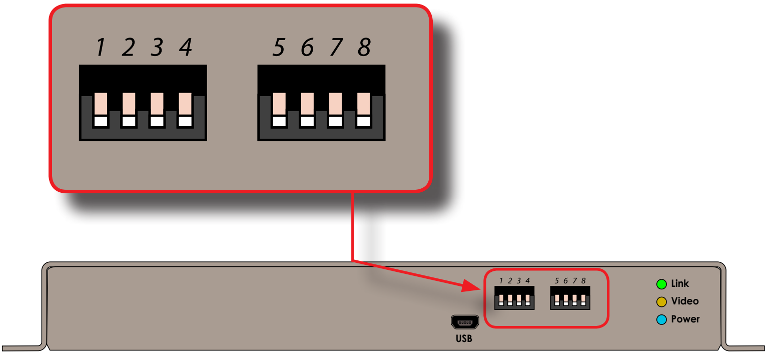
DIP	Feature	Description
9	IR Carrier Frequency	▶ **ON** 56 kHz. ▶ **OFF** (default) 38 kHz.
10	IR Carrier Frequency	▶ **ON** 47 kHz. ▶ **OFF** (default) Depends upon setting of DIP 9.
11	N/A	---
12	N/A	---

Receiver unit

The back panel of the Receiver unit contains two banks of DIP switches. Each bank contains four DIP switches. These DIP switches control IR and HDBT mode. The *default* setting, for each DIP switch, is in the "down" (OFF) position.

Each DIP switch (1 - 8) is arranged from left to right. DIP switches 7 and 8 are not used. Although the DIP switch numbers do not appear on the unit, we have included them for easy reference.

If a DIP switch is in the "up" position, then it is ON. If a DIP switch is in the "down" position, then it is OFF.



DIP	Feature	Description
1	Sender IR carrier filter	▶ **ON** The IR carrier signal is stripped at the Sender unit. ▶ **OFF** (default) The IR carrier signal is passed-through to the Receiver unit.
2	Receiver IR carrier filter	▶ **ON** The IR carrier signal is stripped at the Receiver unit. ▶ **OFF** (default) The IR carrier signal is passed-through to the Sender unit.
3	IR Polarity	▶ **ON** Set to work with third-party IR extenders. ▶ **OFF** (default) Operates with Gefen part no. EXT-RMT-EXTIRN.
4	Long-Reach Mode	▶ **ON** Resolutions up to 1080p Full HD can be extended to a maximum distance of 495 feet (150 meters). Color depth is limited to 8-bit. ▶ **OFF** (default) HDBT mode. Resolutions up to 4K x 2K, can be extended up to 330 feet (100 meters) with deep color.
5	IR carrier frequency	▶ **ON** 56 kHz. ▶ **OFF** (default) 38 kHz.
6	IR carrier frequency	▶ **ON** 47 kHz. ▶ **OFF** (default) Depends upon setting of DIP 5.
7	N/A	---
8	N/A	---

Notes on IR Carrier Signals

When an IR carrier frequency is passed through from the Sender unit to the Receiver unit, or from the Receiver unit to the Sender unit, the carrier signal is not renewed. Any carrier frequency between 30 kHz and 60 kHz is natively passed through.

If the IR carrier signal is stripped at the Sender unit and added at the Receiver unit (or vice versa), then the carrier signal can be set to 38 kHz, 47 kHz, or 56 kHz.

To set the carrier signal frequency on the Sender unit, use DIP switches 9 and 10 on the Sender unit. To set the carrier signal frequency on the Receiver unit, use DIP switches 5 and 6 on the Receiver unit.

Stripping the IR carrier signal is commonly used when directly connecting an IR cable from the output of one device to the input on another IR device.

LED Status

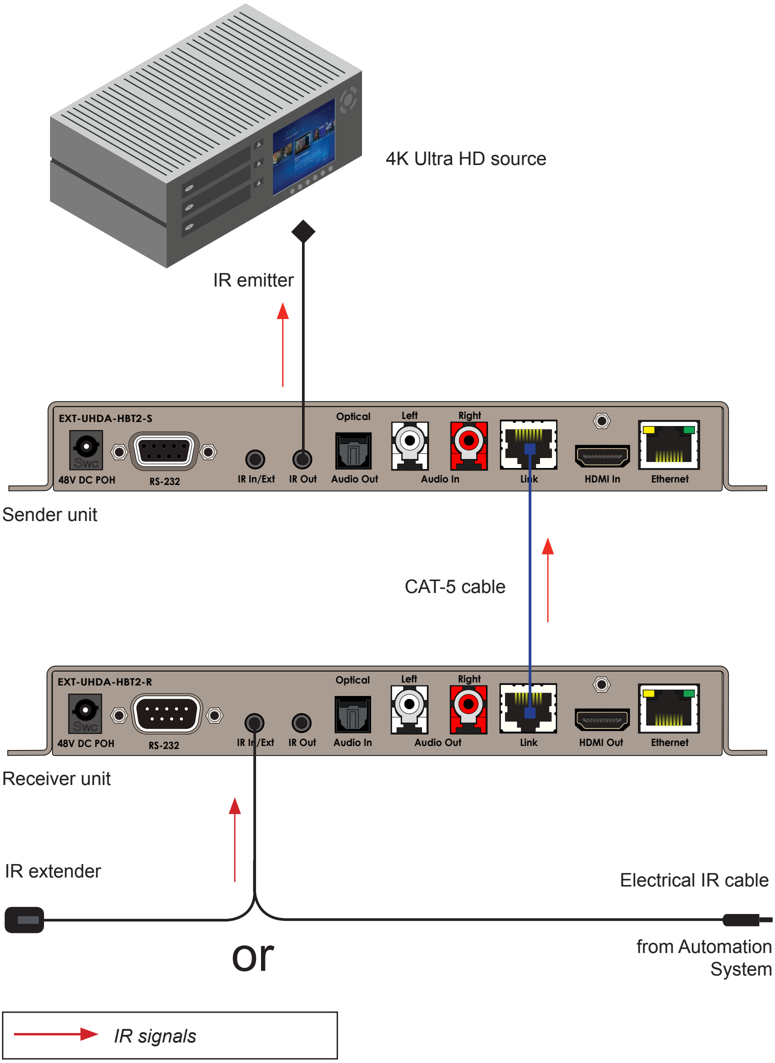
The **Link, Video, and Power** LED indicators provides basic information on the current status of the this product.

The information, in the table below, applies to both the Sender and Receiver unit.

LED	Status	Description
Link	● Solid green	• The Sender / Receiver unit is powered. • Link integrity between Sender and Receiver unit is good.
Video	● Solid amber	• HDCP content is detected
	☀ Flashing amber	• Non-HDCP content is detected.
Power	● Solid blue	• The Sender / Receiver unit is powered.

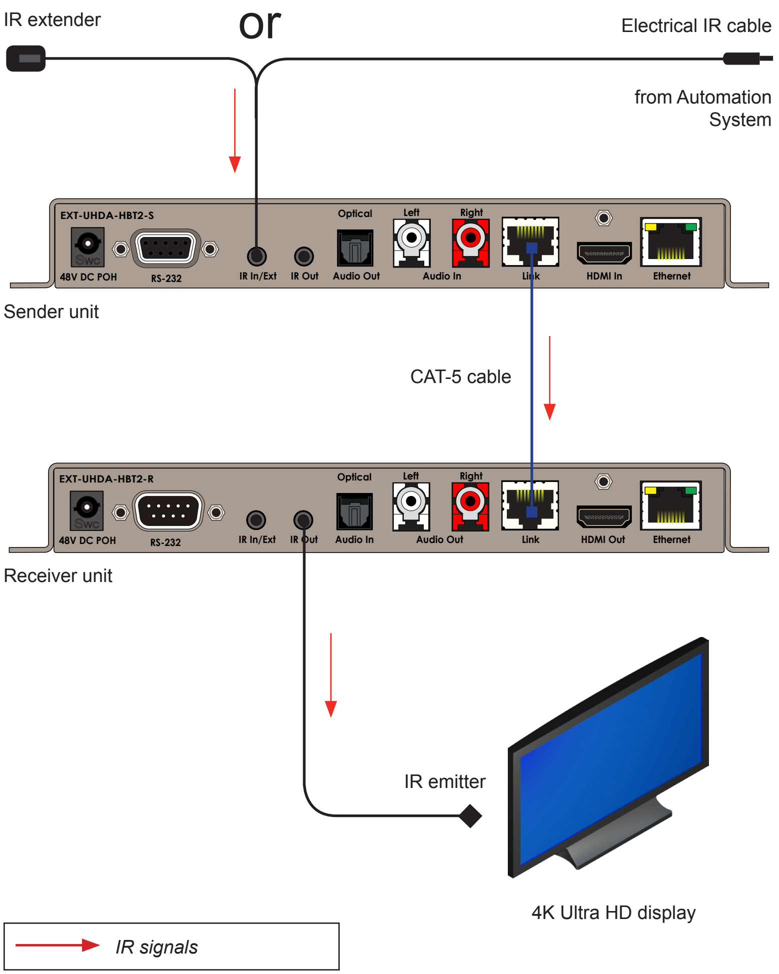
Controlling the Source from the Viewing Location

1. Connect an IR extender (Gefen part no. EXT-RMT-EXTIRN) to the **IR In/Ext** port on the Receiver unit. If using an automation system, connect the 3.5mm mini-mono connector from the **IR In/Ext** port on the Receiver unit to the automation system. IR signals are transmitted over the CAT-5 cable.
2. Connect the IR emitter from the **IR Out** port, on the Sender unit, to the IR sensor window on the source device.


4K Ultra HD source
IR emitter
EXT-UHDA-HBT2-S
48V DC POH
RS-232
IR In/Ext
IR Out
Optical
Audio Out
Left
Right
Audio In
Link
HDMI In
Ethernet
Sender unit
CAT-5 cable
EXT-UHDA-HBT2-R
48V DC POH
RS-232
IR In/Ext
IR Out
Optical
Audio In
Left
Right
Audio Out
Link
HDMI Out
Ethernet
Receiver unit
IR extender
Electrical IR cable
or
from Automation System
IR signals

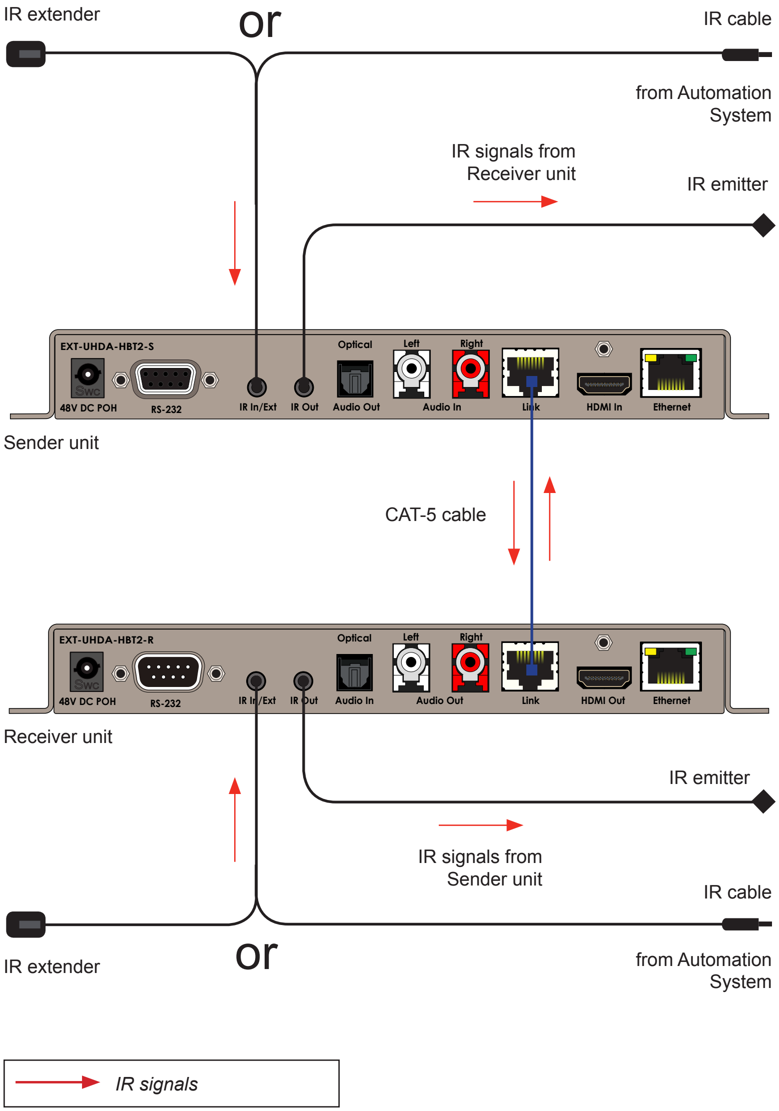
Controlling the Display from the Source Location

1. Connect an IR extender (Gefen part no. EXT-RMT-EXTIRN) to the **IR In/Ext** port on the Sender unit. If using an automation system, connect the 3.5mm mini-mono connector from the **IR In/Ext** port on the Receiver unit to the automation system. IR signals are transmitted over the CAT-5 cable.
2. Connect an IR emitter (Gefen part no. EXT-IREMIT) from the **IR Out** port on the Receiver unit to the IR sensor on the display.

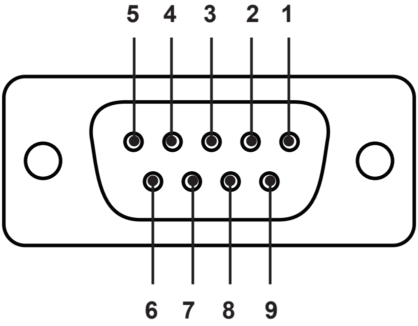

IR extender
or
Electrical IR cable
from Automation System
EXT-UHDA-HBT2-S
Swc
48V DC POH
RS-232
IR In/Ext
IR Out
Optical
Audio Out
Left
Right
Audio In
Link
HDMI In
Ethernet
Sender unit
CAT-5 cable
EXT-UHDA-HBT2-R
Swc
48V DC POH
RS-232
IR In/Ext
IR Out
Optical
Audio In
Left
Right
Audio Out
Link
HDMI Out
Ethernet
Receiver unit
IR emitter
4K Ultra HD display
IR signals

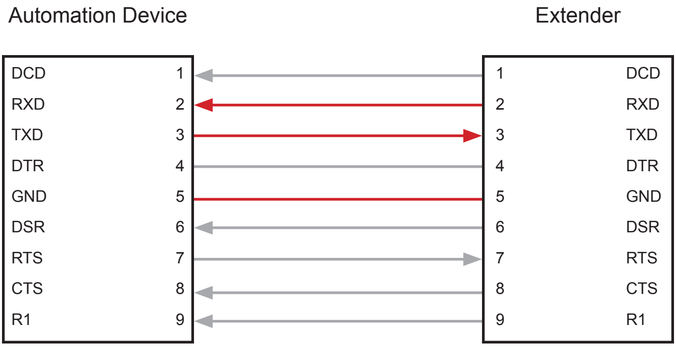
Controlling the Source / Display from Different Locations

Two-way IR allows the source and/or display to be controlled from the Sender or Receiver unit. Refer to the diagram, below, for connection details. IR signals are transmitted over the CAT-5 cable.


IR extender
or
IR cable
from Automation System
IR signals from Receiver unit
IR emitter
EXT-UHDA-HBT2-S
48V DC POH
RS-232
IR In/Ext
IR Out
Optical
Audio Out
Left
Right
Audio In
Link
HDMI In
Ethernet
Sender unit
CAT-5 cable
EXT-UHDA-HBT2-R
48V DC POH
RS-232
IR In/Ext
IR Out
Optical
Audio In
Left
Right
Audio Out
Link
HDMI Out
Ethernet
Receiver unit
IR emitter
IR signals from Sender unit
IR cable
IR extender
or
from Automation System
IR signals

RS-232 Interface





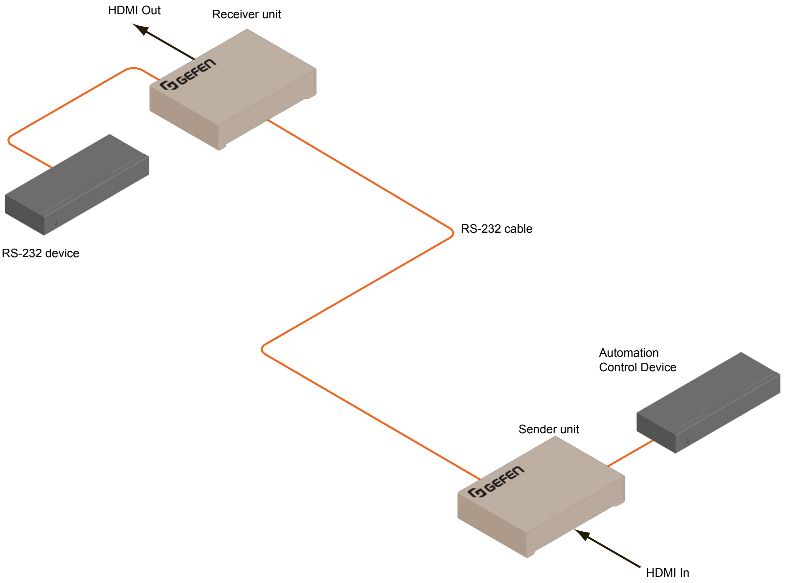
Automation Device				Extender
DCD	1	←	1	DCD
RXD	2	←	2	RXD
TXD	3	→	3	TXD
DTR	4	—	4	DTR
GND	5	—	5	GND
DSR	6	←	6	DSR
RTS	7	→	7	RTS
CTS	8	←	8	CTS
R1	9	←	9	R1

Only TXD, RXD, and GND pins are used.

This product supports RS-232 pass-through, allowing the control of remote RS-232 devices.

In the example below, an RS-232 device has been connected to the Receiver unit. Connect the automation control device to the Sender unit.

Figure 2.1 - Basic RS-232 connection


HDMI Out
Receiver unit
RS-232 device
RS-232 cable
Automation
Control Device
Sender unit
HDMI In

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4K ULTRA HD

HDBaseT™ Extender

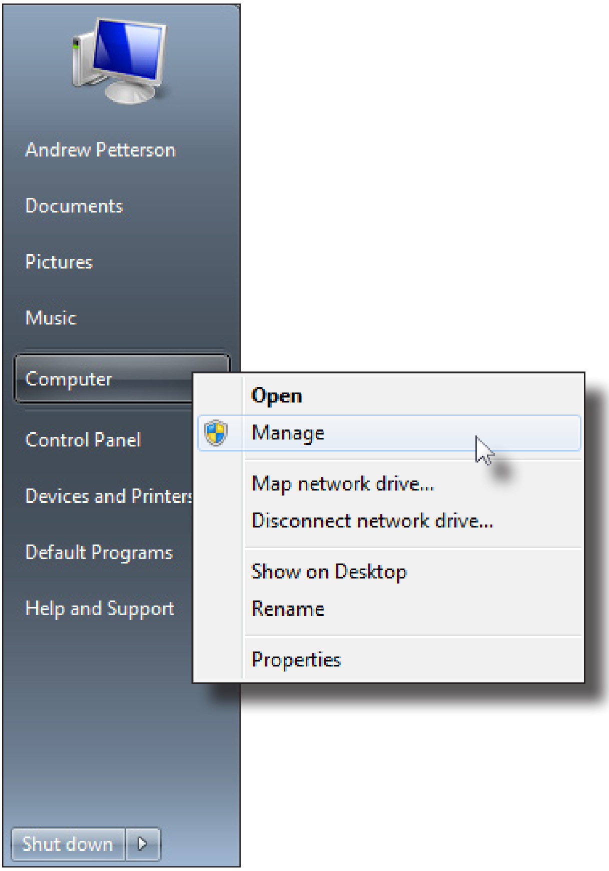
w/ Ethernet, RS-232, 2-way IR, 2-way Audio, and Bidirectional POH

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.

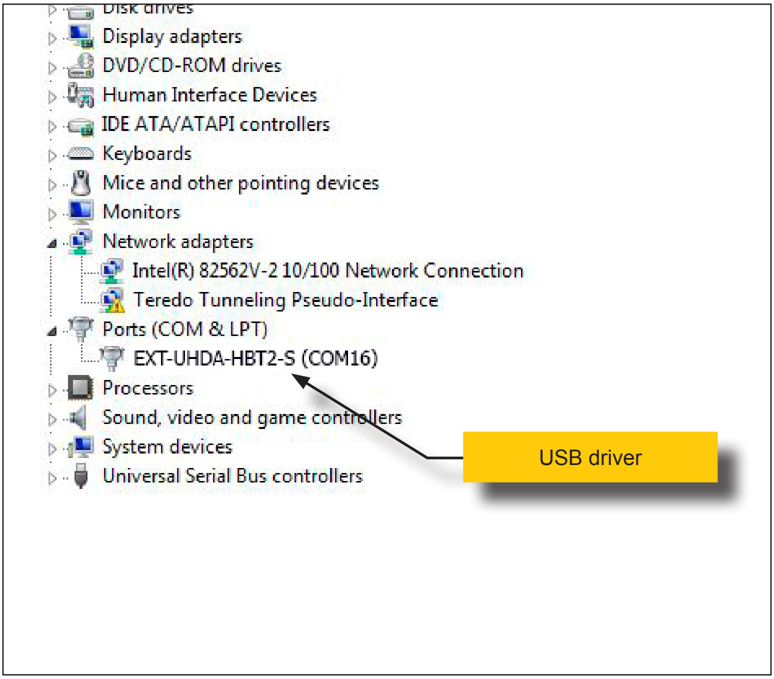

Andrew Petterson
Documents
Pictures
Music
Computer
Control Panel
Devices and Printers
Default Programs
Help and Support
Shut down
Open
Manage
Map network drive...
Disconnect network drive...
Show on Desktop
Rename
Properties

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)**.

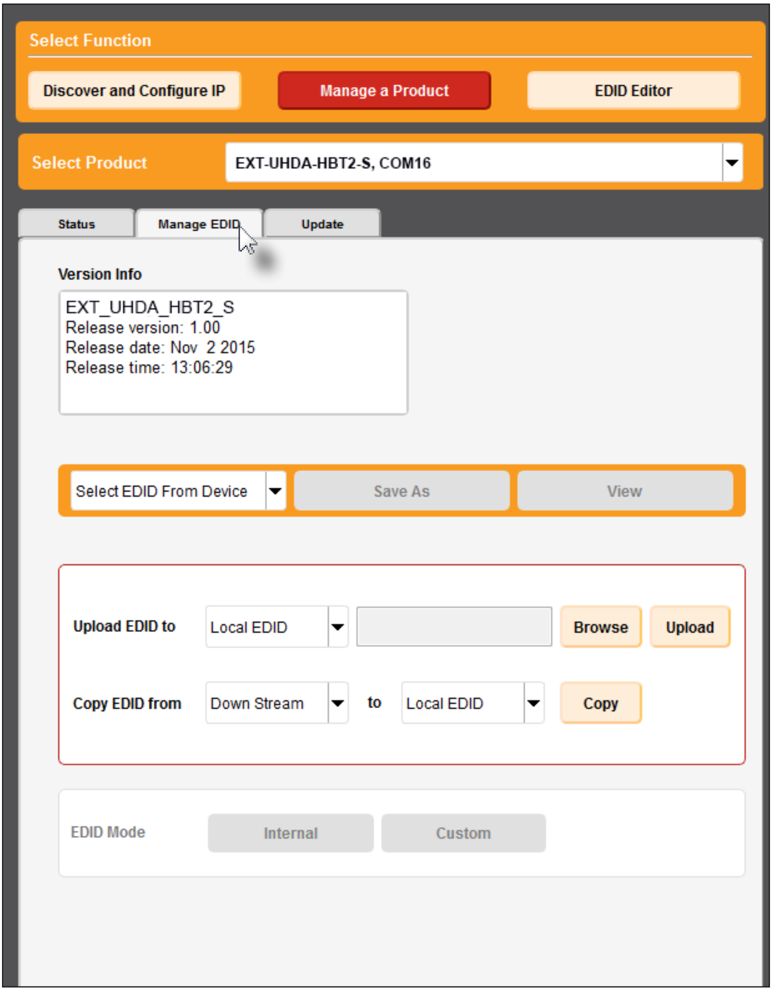
   The device driver will be displayed. In this case, `EXT-UHDA-HBT2-S` will be displayed. If the USB cable is connected to the Receiver unit, then the device driver will be `EXT-UHDA-HBT2-R`.


Disk drives
Display adapters
DVD/CD-ROM drives
Human Interface Devices
IDE ATA/ATAPI controllers
Keyboards
Mice and other pointing devices
Monitors
Network adapters
Intel(R) 82562V-2 10/100 Network Connection
Teredo Tunneling Pseudo-Interface
Ports (COM & LPT)
EXT-UHDA-HBT2-S (COM16)
Processors
Sound, video and game controllers
System devices
Universal Serial Bus controllers
USB driver

Downloading an EDID

EDID data can be downloaded from the connected Gefen Detective 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 31) 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.

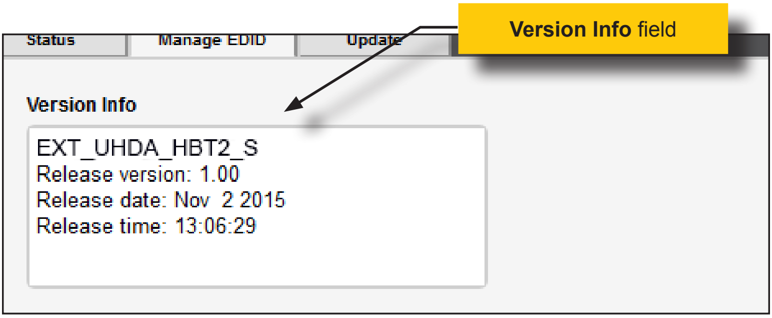


Select Function
Discover and Configure IP
Manage a Product
EDID Editor
Select Product
EXT-UHDA-HBT2-S, COM16
Status
Manage EDID
Update
Version Info

EXT_UHDA_HBT2_S
Release version: 1.00
Release date: Nov 2 2015
Release time: 13:06:29

Select EDID From Device
Save As
View
Upload EDID to
Local EDID
Browse
Upload
Copy EDID from
Down Stream
to
Local EDID
Copy
EDID Mode
Internal
Custom

3. Information about the currently selected device will be displayed in the **Version Info** field.

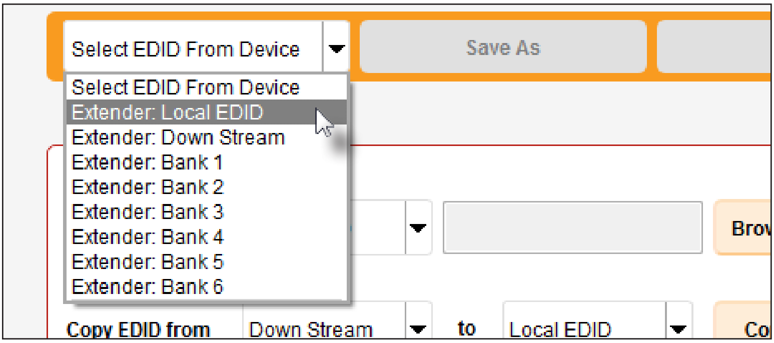


Version Info field

Status
Manage EDID
Update
Version Info

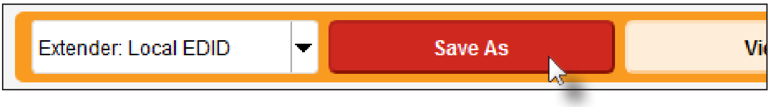
EXT_UHDA_HBT2_S
Release version: 1.00
Release date: Nov 2 2015
Release time: 13:06:29

4. Click the drop-down list next to the **Download** button, and select the desired EDID. In this example, we will select `Extender: Local EDID`.



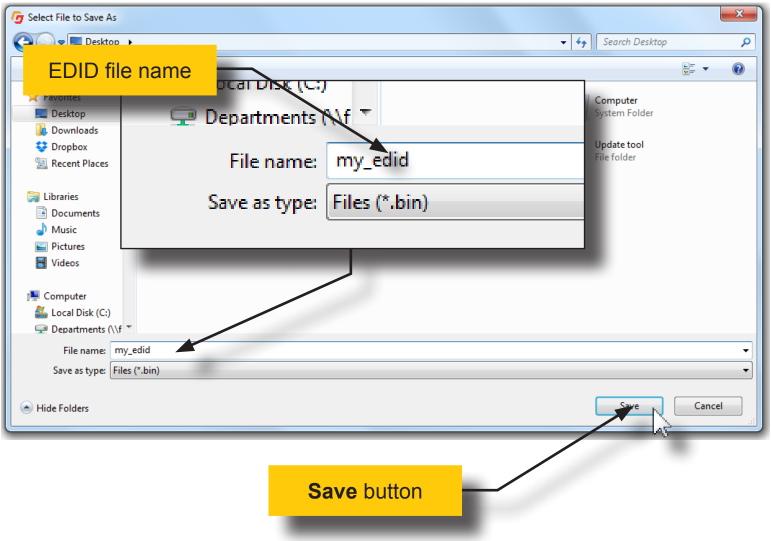
Select EDID From Device
Save As
Select EDID From Device
Extender: Local EDID
Extender: Down Stream
Extender: Bank 1
Extender: Bank 2
Extender: Bank 3
Extender: Bank 4
Extender: Bank 5
Extender: Bank 6
Brow
Copy EDID from
Down Stream
to
Local EDID
Co

5. Click the **Save As** button.



Extender: Local EDID
Save As
Vi

6. The Windows **Save File** dialog will be displayed. Select the desired folder and specify the name of the file in the **File name** field, within the **Save File** dialog. Make sure to specify the `.bin` extension to the filename.



Select File to Save As
Desktop
Search Desktop
EDID file name
Favorites
Desktop
Downloads
Dropbox
Recent Places
Libraries
Documents
Music
Pictures
Videos
Computer
Local Disk (C:)
Departments (\\f
Computer
System Folder
Update tool
File folder
Hide Folders
Save
Cancel
Save button

File name: my_edid

Save as type: Files (*.bin)

7. Click the **Save** button.

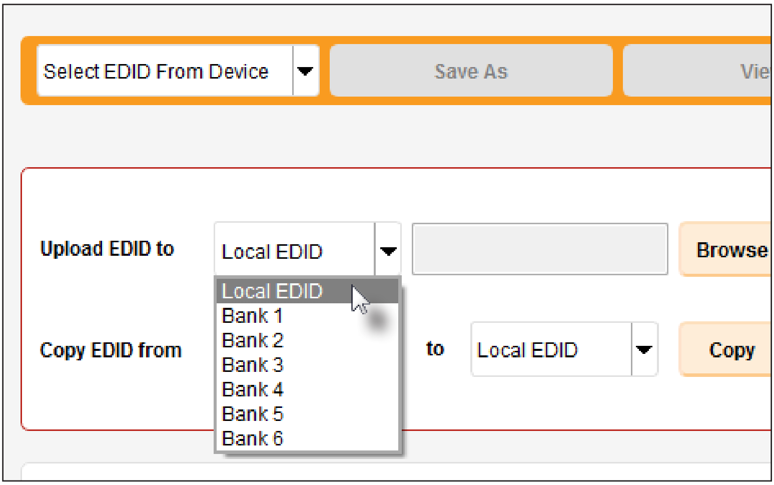
Uploading an EDID

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

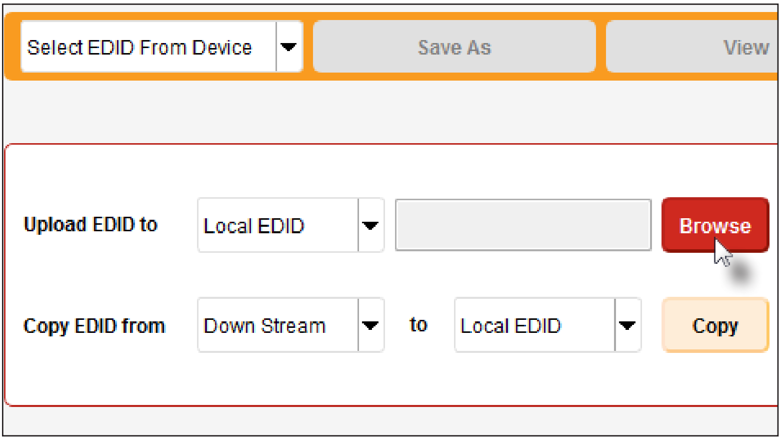
2. Click the **Manage EDID** tab.

3. Click the **Upload EDID to** drop-down list to select the location where the EDID will be uploaded. The EDID can be uploaded to the Local EDID or an EDID bank.

   In the example below, we will select **Local EDID**.


Select EDID From Device
Save As
Vie
Upload EDID to
Local EDID
Browse
Local EDID
Bank 1
Bank 2
Bank 3
Bank 4
Bank 5
Bank 6
Copy EDID from
to
Local EDID
Copy

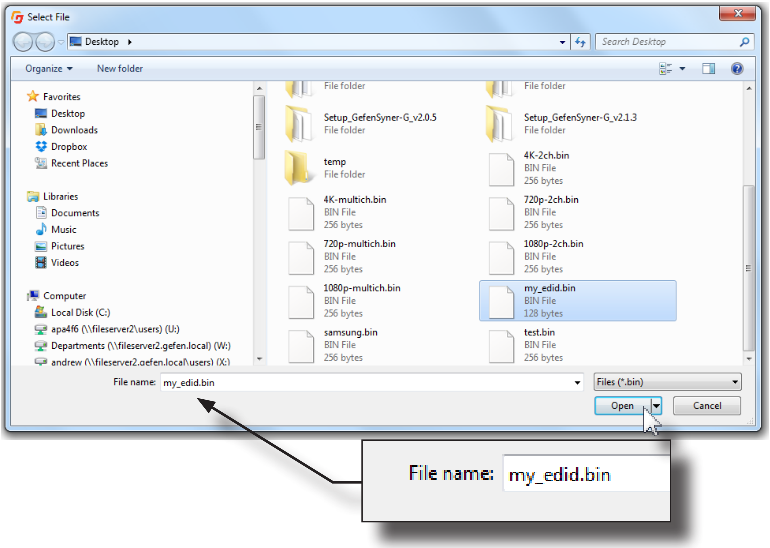
4. Click the **Browse** button.


Select EDID From Device
Save As
View
Upload EDID to
Local EDID
Browse
Copy EDID from
Down Stream
to
Local EDID
Copy

5. The Windows **Select File** dialog will be displayed.

6. Select the desired EDID file. The EDID file must be in `.bin` format.

7. Click the **Open** button.

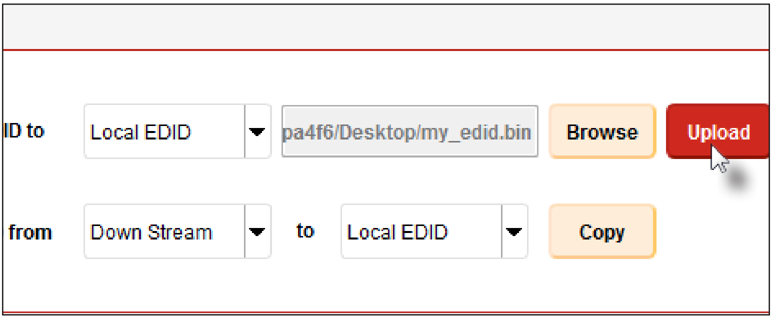

Select File
Desktop
Search Desktop
Organize
New folder
Favorites
Desktop
Downloads
Dropbox
Recent Places
Libraries
Documents
Music
Pictures
Videos
Computer
Local Disk (C:)
apa4f6 (\\fileserver2\users) (U:)
Departments (\\fileserver2.gefen.local) (W:)
andrew (\\fileserver2.gefen.local\users) (X:)
File folder
File folder
Setup_GefenSyner-G_v2.0.5
File folder
Setup_GefenSyner-G_v2.1.3
File folder
temp
File folder
4K-2ch.bin
BIN File
256 bytes
4K-multich.bin
BIN File
256 bytes
720p-2ch.bin
BIN File
256 bytes
720p-multich.bin
BIN File
256 bytes
1080p-2ch.bin
BIN File
256 bytes
1080p-multich.bin
BIN File
256 bytes
my_edid.bin
BIN File
128 bytes
samsung.bin
BIN File
256 bytes
test.bin
BIN File
256 bytes
Open
Cancel

File name: my_edid.bin

Files (*.bin)

File name: my_edid.bin

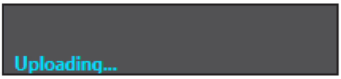
8. Click the **Upload** button.


Browse
Upload
Copy

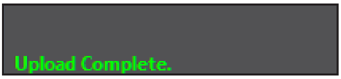
ID to Local EDID pa4f6/Desktop/my_edid.bin

from Down Stream to Local EDID

9. In the lower-left corner of the interface, the "Uploading..." message will appear as the EDID is uploaded. Once the operation is complete, the "Upload Complete." message will be displayed.



Uploading...



Upload Complete.

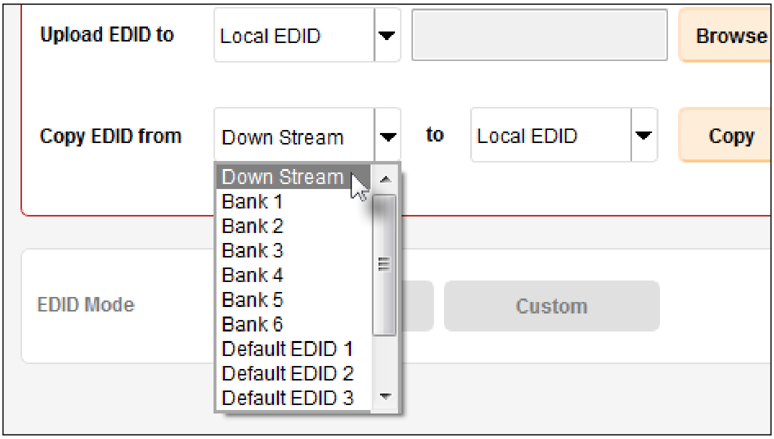
Copying an EDID

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 **Copy EDID from** drop-down list to select the location from where the EDID will be copied. The EDID can be copied from any of the following locations:
   The downstream EDID, an EDID bank, or a default EDID location

   In the example below, we will select **Down Stream**.

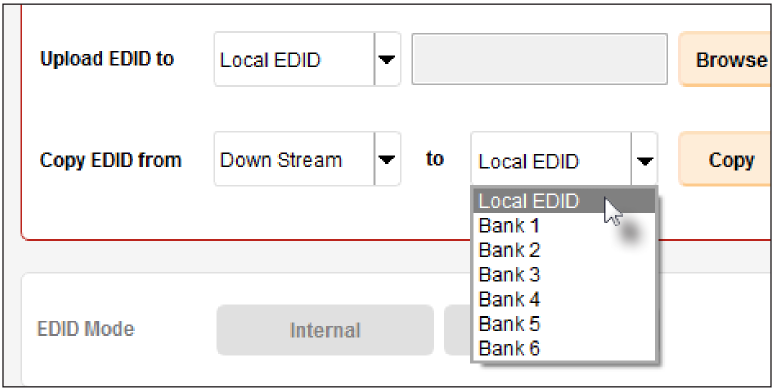


Upload EDID to: Local EDID

Copy EDID from: Down Stream to Local EDID

Browse
Copy
Down Stream
Bank 1
Bank 2
Bank 3
Bank 4
Bank 5
Bank 6
Default EDID 1
Default EDID 2
Default EDID 3
EDID Mode
Custom

4. Click the **Copy EDID** to drop-down list to select the location to where the EDID will be copied. The EDID can by copied to the Local EDID or to an EDID bank.

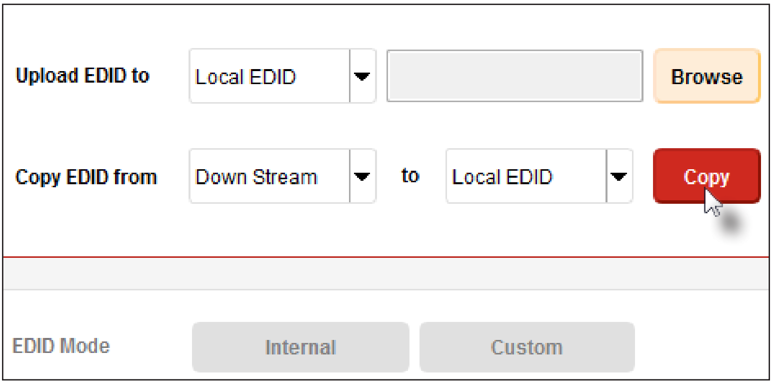


Upload EDID to: Local EDID

Copy EDID from: Down Stream to Local EDID

Browse
Copy
Local EDID
Bank 1
Bank 2
Bank 3
Bank 4
Bank 5
Bank 6
EDID Mode
Internal

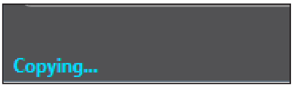
5. Click the **Copy** button.



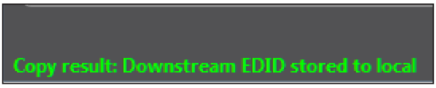
Upload EDID to Local EDID

Copy EDID from Down Stream to Local EDID

6. 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...



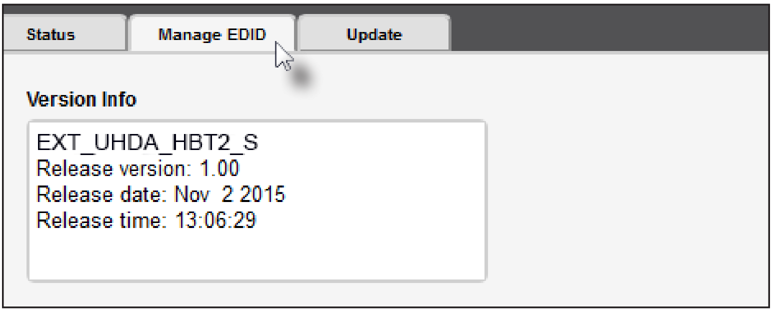
Copy result: Downstream EDID stored to local

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 drop-down list.

2. Click the **Manage EDID** tab.

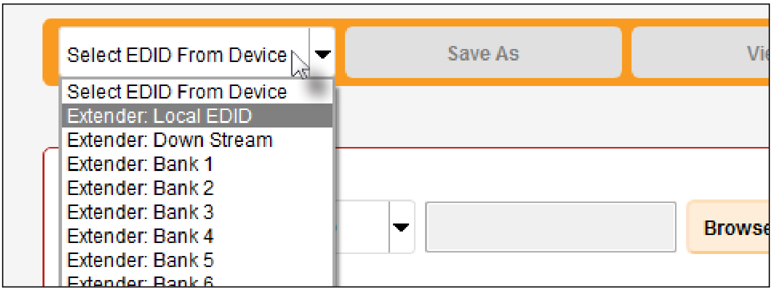


Status
Manage EDID
Update

Version Info

EXT_UHDA_HBT2_S
Release version: 1.00
Release date: Nov 2 2015
Release time: 13:06:29

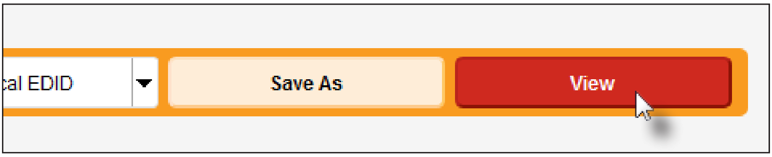
3. Click the **Select EDID From Device / Display** drop-down list to select the desired EDID.



Select EDID From Device
Save As
Vi
Select EDID From Device
Extender: Local EDID
Extender: Down Stream
Extender: Bank 1
Extender: Bank 2
Extender: Bank 3
Extender: Bank 4
Extender: Bank 5
Browse

Note that the display, which is connected to the computer, is also available in the drop-down list. In this way, we can download, view, and/or edit the EDID from the display (sink) device.

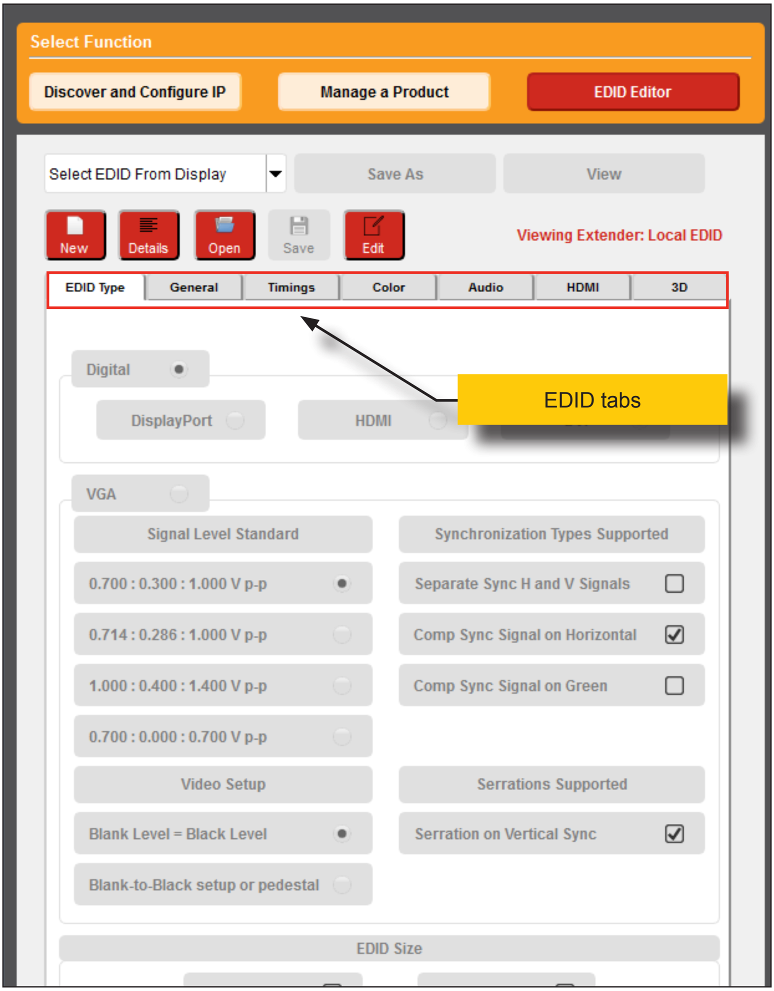
4. Click the **View** button.



al EDID
Save As
View

4. 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.

5. 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.


Select Function
Discover and Configure IP
Manage a Product
EDID Editor
Select EDID From Display
Save As
View
New
Details
Open
Save
Edit
Viewing Extender: Local EDID
EDID Type
General
Timings
Color
Audio
HDMI
3D
EDID tabs
Signal Level Standard
Synchronization Types Supported
Video Setup
Serrations Supported
EDID Size

● Digital
○ DisplayPort
○ HDMI
○ VGA

● 0.700 : 0.300 : 1.000 V p-p
○ 0.714 : 0.286 : 1.000 V p-p
○ 1.000 : 0.400 : 1.400 V p-p
○ 0.700 : 0.000 : 0.700 V p-p

Separate Sync H and V Signals ☐
Comp Sync Signal on Horizontal ☑
Comp Sync Signal on Green ☐

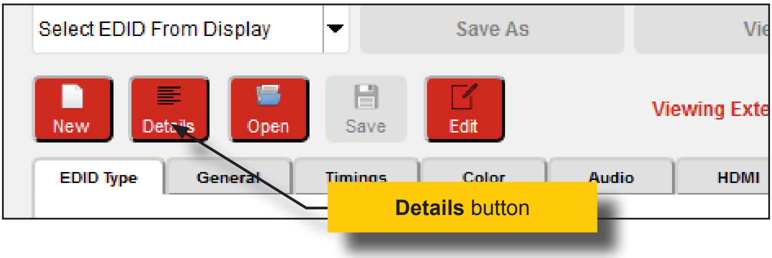
● Blank Level = Black Level
○ Blank-to-Black setup or pedestal

Serration on Vertical Sync ☑

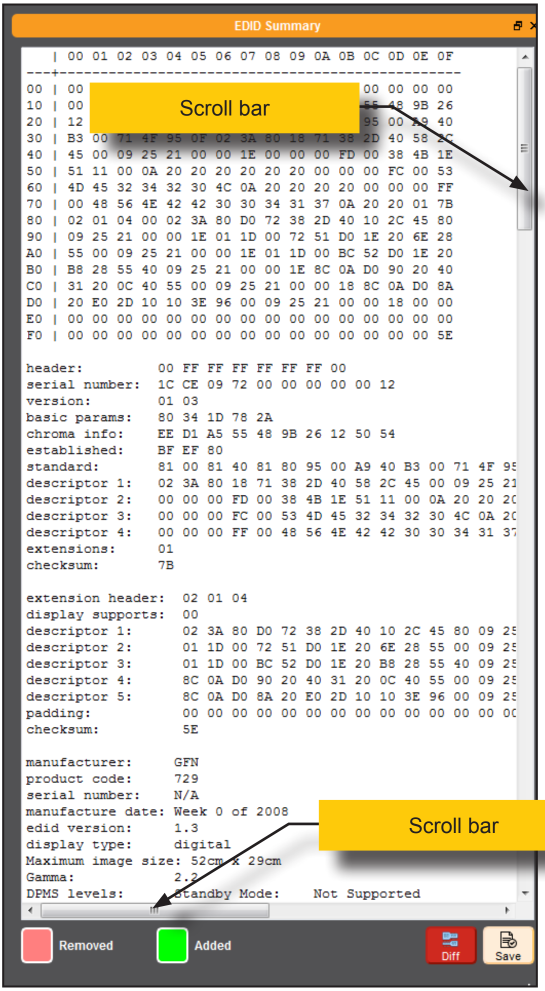
Information

Video cards which use Intel® chipsets will only retrieve the first block (128 bytes) of the EDID.

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.



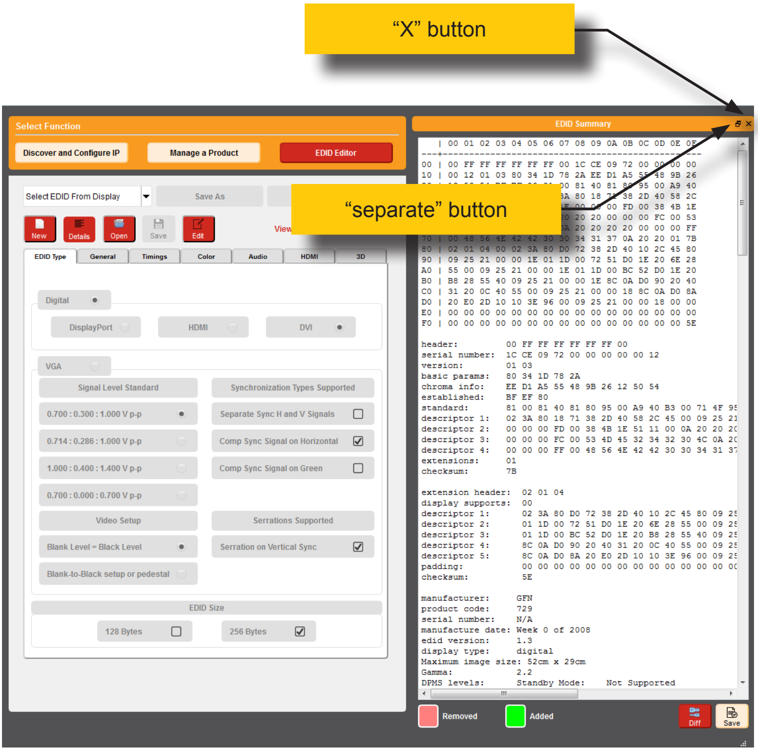
```
   | 00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0E 0F
---+------------------------------------------------
00 | 00                                  00 00 00 00
10 | 00                                  55 48 9B 26
20 | 12                                  95 00 A9 40
30 | B3 00 71 4F 95 0F 02 3A 80 18 71 38 2D 40 58 2C
40 | 45 00 09 25 21 00 00 1E 00 00 00 FD 00 38 4B 1E
50 | 51 11 00 0A 20 20 20 20 20 20 00 00 00 FC 00 53
60 | 4D 45 32 34 32 30 4C 0A 20 20 20 20 00 00 00 FF
70 | 00 48 56 4E 42 42 30 30 34 31 37 0A 20 20 01 7B
80 | 02 01 04 00 02 3A 80 D0 72 38 2D 40 10 2C 45 80
90 | 09 25 21 00 00 1E 01 1D 00 72 51 D0 1E 20 6E 28
A0 | 55 00 09 25 21 00 00 1E 01 1D 00 BC 52 D0 1E 20
B0 | B8 28 55 40 09 25 21 00 00 1E 8C 0A D0 90 20 40
C0 | 31 20 0C 40 55 00 09 25 21 00 00 18 8C 0A D0 8A
D0 | 20 E0 2D 10 10 3E 96 00 09 25 21 00 00 18 00 00
E0 | 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
F0 | 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 5E

header:         00 FF FF FF FF FF FF 00
serial number:  1C CE 09 72 00 00 00 00 00 12
version:        01 03
basic params:   80 34 1D 78 2A
chroma info:    EE D1 A5 55 48 9B 26 12 50 54
established:    BF EF 80
standard:       81 00 81 40 81 80 95 00 A9 40 B3 00 71 4F 95
descriptor 1:   02 3A 80 18 71 38 2D 40 58 2C 45 00 09 25 21
descriptor 2:   00 00 00 FD 00 38 4B 1E 51 11 00 0A 20 20 20
descriptor 3:   00 00 00 FC 00 53 4D 45 32 34 32 30 4C 0A 20
descriptor 4:   00 00 00 FF 00 48 56 4E 42 42 30 30 34 31 37
extensions:     01
checksum:       7B

extension header:  02 01 04
display supports:  00
descriptor 1:      02 3A 80 D0 72 38 2D 40 10 2C 45 80 09 25
descriptor 2:      01 1D 00 72 51 D0 1E 20 6E 28 55 00 09 25
descriptor 3:      01 1D 00 BC 52 D0 1E 20 B8 28 55 40 09 25
descriptor 4:      8C 0A D0 90 20 40 31 20 0C 40 55 00 09 25
descriptor 5:      8C 0A D0 8A 20 E0 2D 10 10 3E 96 00 09 25
padding:           00 00 00 00 00 00 00 00 00 00 00 00 00 00
checksum:          5E

manufacturer:     GFN
product code:     729
serial number:    N/A
manufacture date: Week 0 of 2008
edid version:     1.3
display type:     digital
Maximum image size: 52cm x 29cm
Gamma:            2.2
DPMS levels:      Standby Mode:    Not Supported
```

9. 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:



Digital ●
DisplayPort ○ HDMI ○ DVI ●

VGA ○

Signal Level Standard
0.700 : 0.300 : 1.000 V p-p ●
0.714 : 0.286 : 1.000 V p-p ○
1.000 : 0.400 : 1.400 V p-p ○
0.700 : 0.000 : 0.700 V p-p ○

Synchronization Types Supported
Separate Sync H and V Signals ☐
Comp Sync Signal on Horizontal ☑
Comp Sync Signal on Green ☐

Video Setup
Blank Level = Black Level ●
Blank-to-Black setup or pedestal ○

Serrations Supported
Serration on Vertical Sync ☑

EDID Size
128 Bytes ☐ 256 Bytes ☑

```
   | 00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0E 0F
---+-----------------------------------------------
00 | 00 FF FF FF FF FF FF 00 1C CE 09 72 00 00 00 00
10 | 00 12 01 03 80 34 1D 78 2A EE D1 A5 55 48 9B 26
                           00 81 40 81 80 95 00 A9 40
                           3A 80 18 71 38 2D 40 58 2C
                           1E 00 00 00 FD 00 38 4B 1E
                           20 20 20 00 00 00 FC 00 53
                           0A 20 20 20 20 00 00 00 FF
70 | 00 48 56 4E 42 42 30 30 34 31 37 0A 20 20 01 7B
80 | 02 01 04 00 02 3A 80 D0 72 38 2D 40 10 2C 45 80
90 | 09 25 21 00 00 1E 01 1D 00 72 51 D0 1E 20 6E 28
A0 | 55 00 09 25 21 00 00 1E 01 1D 00 BC 52 D0 1E 20
B0 | B8 28 55 40 09 25 21 00 00 1E 8C 0A D0 90 20 40
C0 | 31 20 0C 40 55 00 09 25 21 00 00 18 8C 0A D0 8A
D0 | 20 E0 2D 10 10 3E 96 00 09 25 21 00 00 18 00 00
E0 | 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
F0 | 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 5E

header:         00 FF FF FF FF FF FF 00
serial number:  1C CE 09 72 00 00 00 00 00 12
version:        01 03
basic params:   80 34 1D 78 2A
chroma info:    EE D1 A5 55 48 9B 26 12 50 54
established:    BF EF 80
standard:       81 00 81 40 81 80 95 00 A9 40 B3 00 71 4F 95
descriptor 1:   02 3A 80 18 71 38 2D 40 58 2C 45 00 09 25 21
descriptor 2:   00 00 00 FD 00 38 4B 1E 51 11 00 0A 20 20 20
descriptor 3:   00 00 00 FC 00 53 4D 45 32 34 32 30 4C 0A 20
descriptor 4:   00 00 00 FF 00 48 56 4E 42 42 30 30 34 31 37
extensions:     01
checksum:       7B

extension header:  02 01 04
display supports:  00
descriptor 1:      02 3A 80 D0 72 38 2D 40 10 2C 45 80 09 25
descriptor 2:      01 1D 00 72 51 D0 1E 20 6E 28 55 00 09 25
descriptor 3:      01 1D 00 BC 52 D0 1E 20 B8 28 55 40 09 25
descriptor 4:      8C 0A D0 90 20 40 31 20 0C 40 55 00 09 25
descriptor 5:      8C 0A D0 8A 20 E0 2D 10 10 3E 96 00 09 25
padding:           00 00 00 00 00 00 00 00 00 00 00 00 00 00
checksum:          5E

manufacturer:     GFN
product code:     729
serial number:    N/A
manufacture date: Week 0 of 2008
edid version:     1.3
display type:     digital
Maximum image size: 52cm x 29cm
Gamma:            2.2
DPMS levels:      Standby Mode:    Not Supported
```

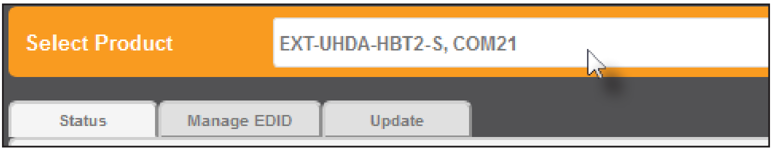
10. Double-click the window title bar of the detached EDID Summary to reattach it to the main window. it to the main Syner-G window.

11. To close the **EDID Summary** window, either click the ✕ button, in the upper-right corner of the **EDID Summary** window or click the **Details** button in the main Syner-G window.

Link Quality Monitoring

The **Status** tab provides information about signal quality in HDBaseT installations. This page will only be available when connected to a Gefen product that uses HDBaseT technology.

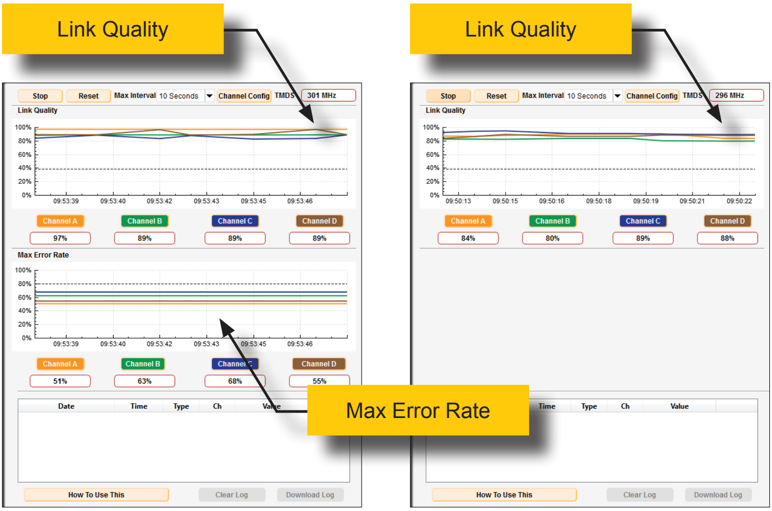
1. Select an HDBaseT product from the **Select Product** drop-down list.



Select Product: EXT-UHDA-HBT2-S, COM21

Status
Manage EDID
Update

2. Under the **Status** tab will automatically be selected. If a Sender unit is selected, both the **Link Quality** and **Max Error Rate** graphs will be displayed. If a Receiver unit is selected, only the **Link Quality** graph will be displayed.



Sender unit

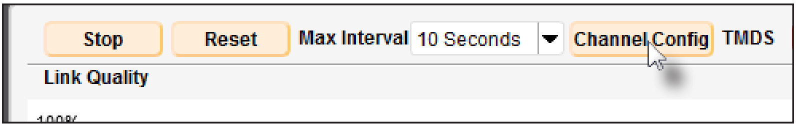
Receiver unit

Max Interval: 10 Seconds

TMDS: 301 MHz (Sender unit), 296 MHz (Receiver unit)

Link Quality
Link Quality
Max Error Rate
Stop
Reset
Channel Config
Channel A
Channel B
Channel C
Channel D
97%
89%
89%
89%
51%
63%
68%
55%
84%
80%
89%
88%
Date
Time
Type
Ch
Value
How To Use This
Clear Log
Download Log

3. Click the **Channel Config** button, above the **Link Quality** graph.

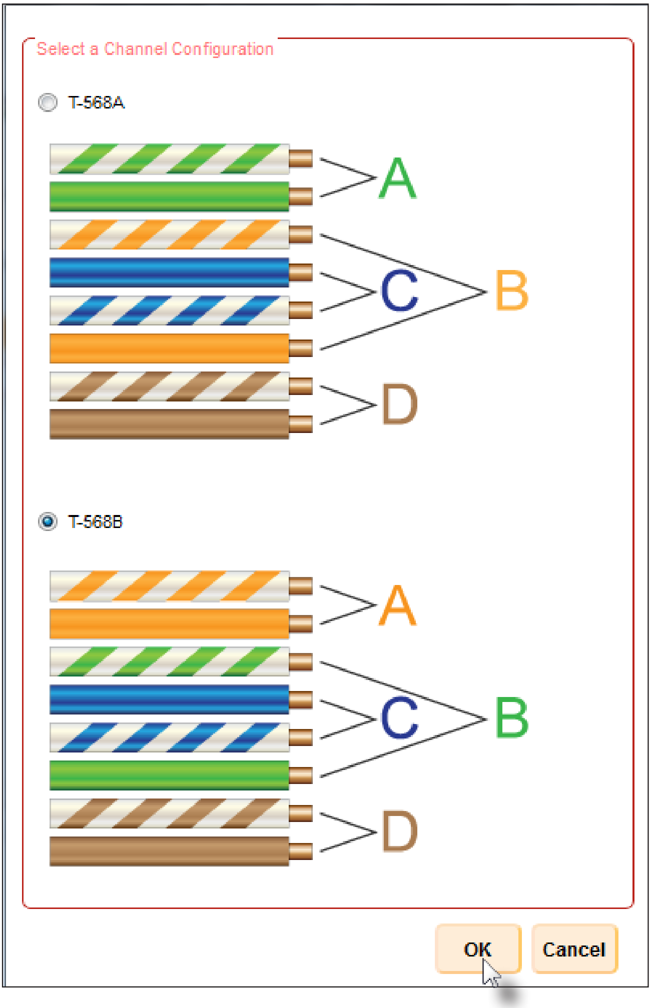


Max Interval: 10 Seconds

Stop
Reset
Channel Config
TMDS
Link Quality
100%

4. The **Select a Channel Configuration** dialog box will be displayed.

5. Click the radio button for the cable termination type. In the example, below, **T-568B** is selected.



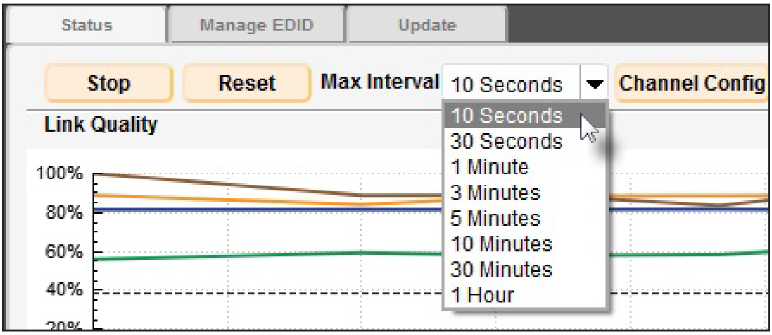
Select a Channel Configuration

○ T-568A

● T-568B

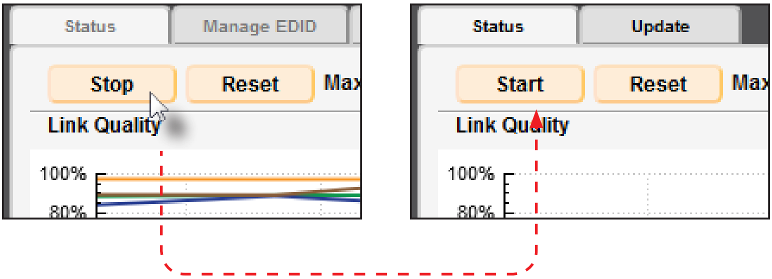
6. Click the **OK** button to save the selection.

7. Click the **Max Interval** drop-down list to select the desired time interval. This interval represent the maximum length of time before the graphs are updated.

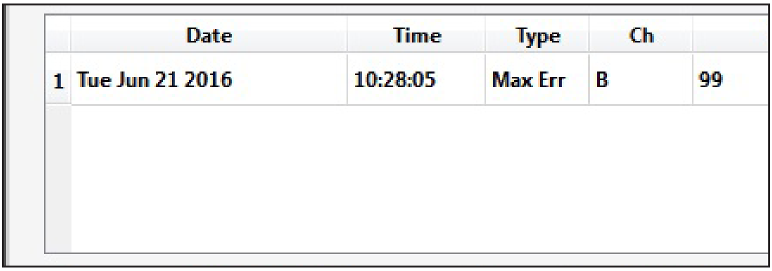

Status
Manage EDID
Update
Stop
Reset
Max Interval
10 Seconds
Channel Config
Link Quality
10 Seconds
30 Seconds
1 Minute
3 Minutes
5 Minutes
10 Minutes
30 Minutes
1 Hour
100%
80%
60%
40%
20%

8. To clear the channel data from both graphs, click the **Reset** button. Click the **Stop** button to halt the link monitoring process.

   When the **Stop** button is clicked, the monitoring process will stop and the button will read **Start.** In addition, Syner-G will ask if the log file should be saved. To continue the monitoring process, click the **Start** button.


Status
Manage EDID
Stop
Reset
Max
Link Quality
100%
80%
Status
Update
Start
Reset
Max
Link Quality
100%
80%

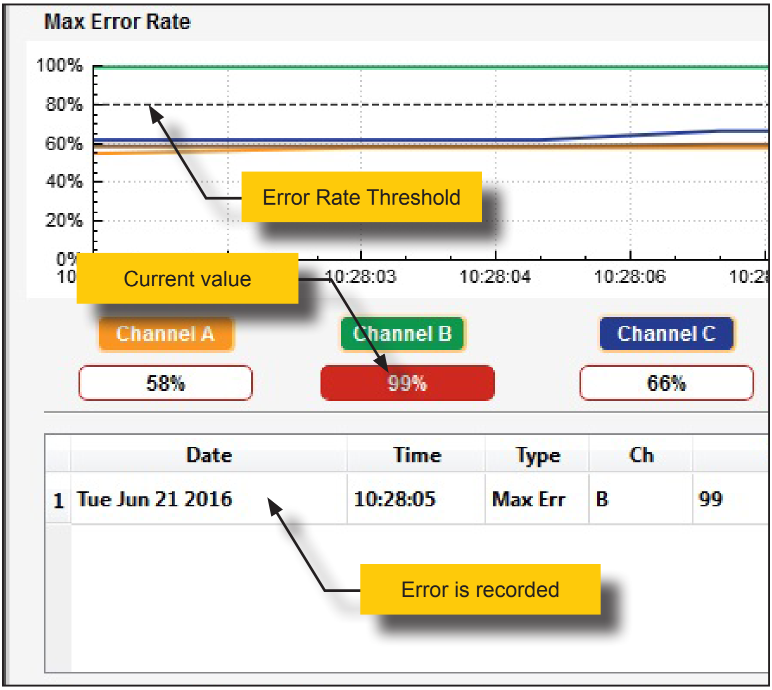
9. Errors are automatically recorded and placed in the list box at the bottom of the Syner-G application, as shown.



	Date	Time	Type	Ch	
1	Tue Jun 21 2016	10:28:05	Max Err	B	99

In the example, below, the **Max Error Rate** for **Channel B** is 100%. Note the horizontal dashed-line at the 80% mark. This line represents the error rate threshold for each channel.

Since **Channel B** has exceed the threshold, the channel's current value is highlighted in red, as shown below.

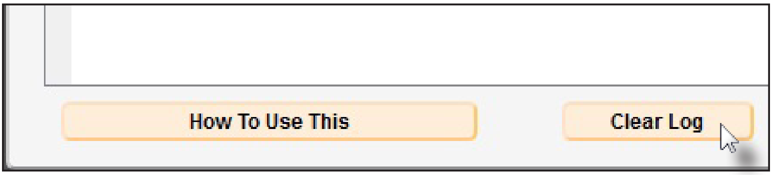

Max Error Rate
100%
80%
60%
40%
20%
0%
10
10:28:03
10:28:04
10:28:06
10:2
Error Rate Threshold
Current value
Channel A
Channel B
Channel C
58%
99%
66%
Error is recorded

	Date	Time	Type	Ch	
1	Tue Jun 21 2016	10:28:05	Max Err	B	99

The following table provides a summary of the error type and the values that will trigger an error report. Note that a threshold value will also trigger a report.

Report Type	Range when value is recorded
Link Quality	40% or below
Max Error Rate	80% or above

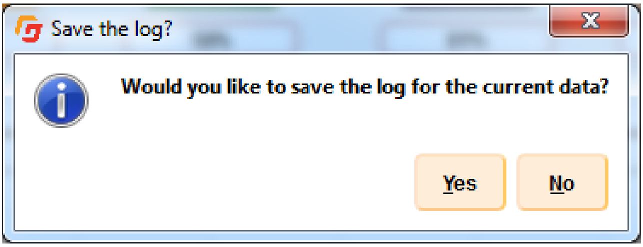
10. Press the **Clear Log** button, at any time, to clear all log entries.


How To Use This
Clear Log

Once the **Clear Log** button is pressed, the following dialog will be displayed, confirming the operation.

Click the **No** button to clear all reports in the list box. Note that once cleared, reports can **not** be recovered.

Click the **Yes** button to save the all current data to a `.csv` file. See the next step for more information on saving the current data to a file.

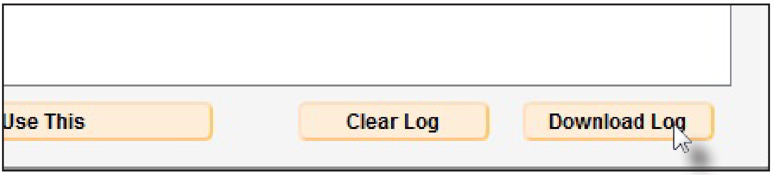


Save the log?

Would you like to save the log for the current data?

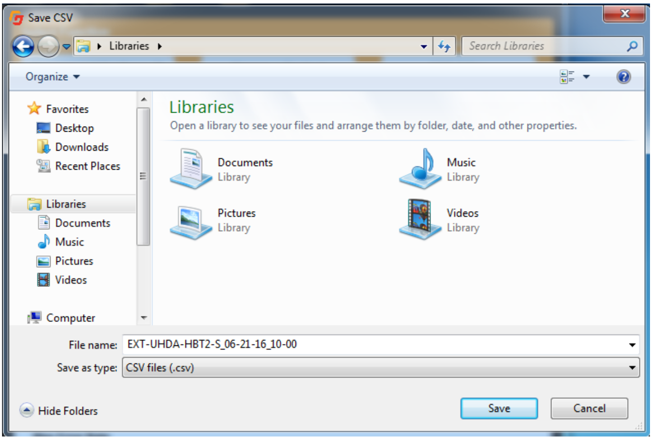
Yes
No

11. Click the **Download Log** button to save all recorded error reports to a `.csv` file. The `.csv` file is a comma-delimited file which allows data to be save in a structured, table-type format, which can be opened using a spreadsheet application.



Use This
Clear Log
Download Log

The **Save CSV** dialog will be displayed.

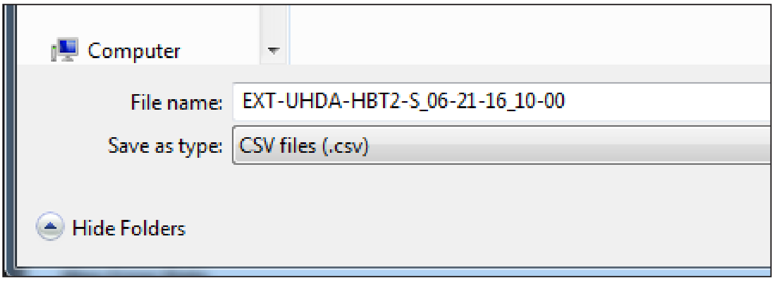


Save CSV
Libraries
Search Libraries
Organize
Favorites
Desktop
Downloads
Recent Places
Libraries
Documents
Music
Pictures
Videos
Computer
Libraries
Open a library to see your files and arrange them by folder, date, and other properties.
Documents Library
Music Library
Pictures Library
Videos Library
Hide Folders
Save
Cancel

File name: EXT-UHDA-HBT2-S_06-21-16_10-00

Save as type: CSV files (.csv)

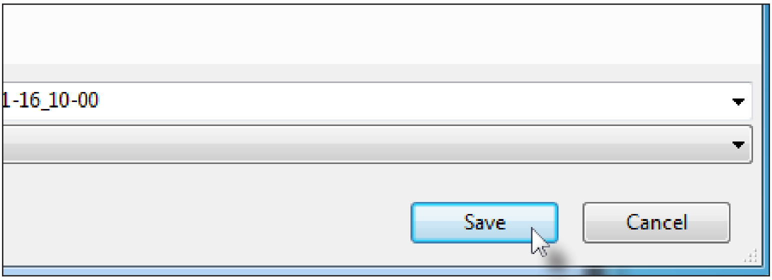
The filename will automatically be created and assigned to the **Filename** field. The name of the file can be changed, if desired.


Computer
Hide Folders

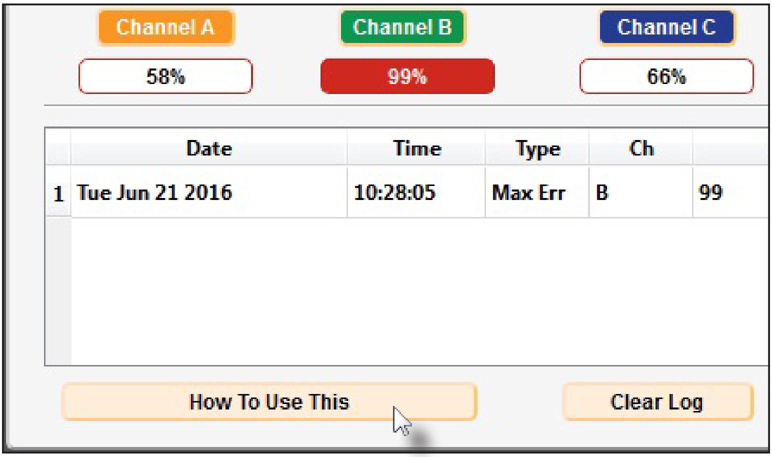
File name: EXT-UHDA-HBT2-S_06-21-16_10-00

Save as type: CSV files (.csv)

Click the **Save** button to save the file.


1-16_10-00
Save
Cancel

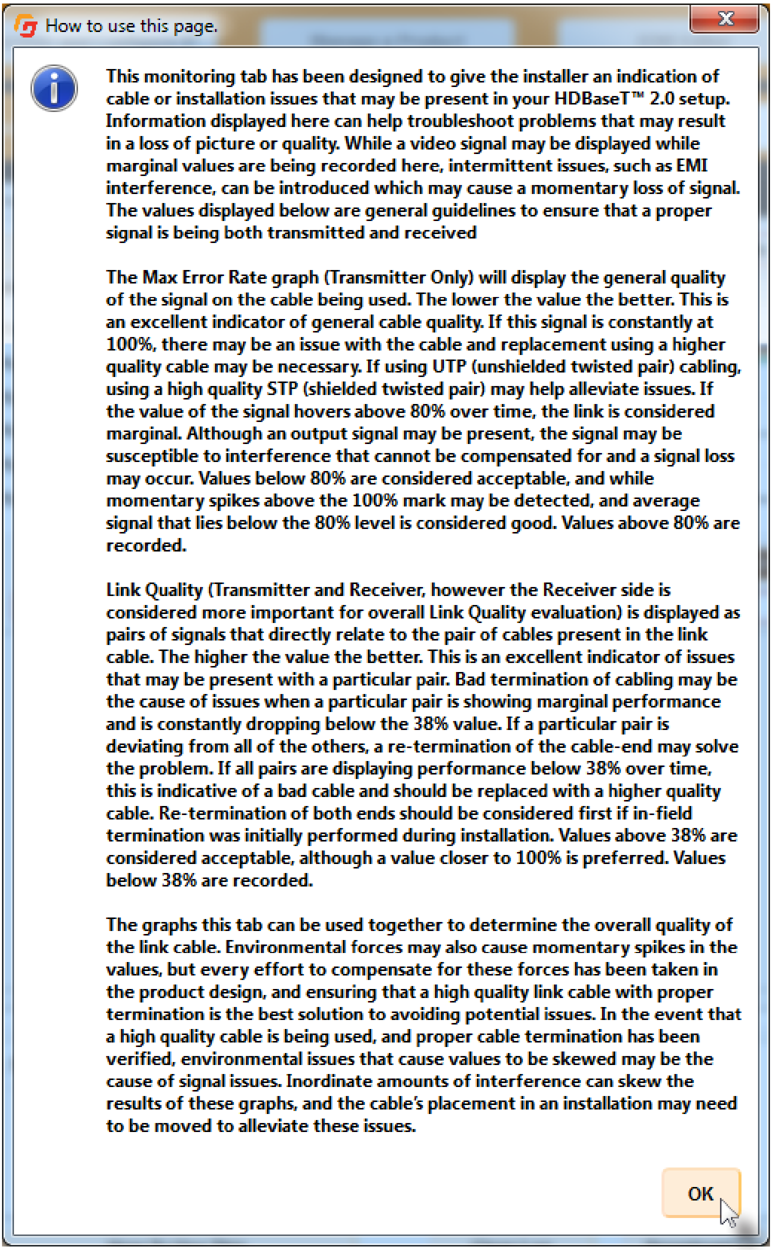
12. To display detailed information on the use of Link Monitoring, click the **How to Use This** button, at the bottom of the Syner-G application window.


Channel A
58%
Channel B
99%
Channel C
66%
How To Use This
Clear Log

	Date	Time	Type	Ch	
1	Tue Jun 21 2016	10:28:05	Max Err	B	99

The **How to use this page** dialog will be displayed. It is recommended that this dialog be read in it entirety as it provides technical details on link monitoring.

To dismiss the dialog, click the **OK** button at the bottom of the dialog.



This monitoring tab has been designed to give the installer an indication of cable or installation issues that may be present in your HDBaseT™ 2.0 setup. Information displayed here can help troubleshoot problems that may result in a loss of picture or quality. While a video signal may be displayed while marginal values are being recorded here, intermittent issues, such as EMI interference, can be introduced which may cause a momentary loss of signal. The values displayed below are general guidelines to ensure that a proper signal is being both transmitted and received

The Max Error Rate graph (Transmitter Only) will display the general quality of the signal on the cable being used. The lower the value the better. This is an excellent indicator of general cable quality. If this signal is constantly at 100%, there may be an issue with the cable and replacement using a higher quality cable may be necessary. If using UTP (unshielded twisted pair) cabling, using a high quality STP (shielded twisted pair) may help alleviate issues. If the value of the signal hovers above 80% over time, the link is considered marginal. Although an output signal may be present, the signal may be susceptible to interference that cannot be compensated for and a signal loss may occur. Values below 80% are considered acceptable, and while momentary spikes above the 100% mark may be detected, and average signal that lies below the 80% level is considered good. Values above 80% are recorded.

Link Quality (Transmitter and Receiver, however the Receiver side is considered more important for overall Link Quality evaluation) is displayed as pairs of signals that directly relate to the pair of cables present in the link cable. The higher the value the better. This is an excellent indicator of issues that may be present with a particular pair. Bad termination of cabling may be the cause of issues when a particular pair is showing marginal performance and is constantly dropping below the 38% value. If a particular pair is deviating from all of the others, a re-termination of the cable-end may solve the problem. If all pairs are displaying performance below 38% over time, this is indicative of a bad cable and should be replaced with a higher quality cable. Re-termination of both ends should be considered first if in-field termination was initially performed during installation. Values above 38% are considered acceptable, although a value closer to 100% is preferred. Values below 38% are recorded.

The graphs this tab can be used together to determine the overall quality of the link cable. Environmental forces may also cause momentary spikes in the values, but every effort to compensate for these forces has been taken in the product design, and ensuring that a high quality link cable with proper termination is the best solution to avoiding potential issues. In the event that a high quality cable is being used, and proper cable termination has been verified, environmental issues that cause values to be skewed may be the cause of signal issues. Inordinate amounts of interference can skew the results of these graphs, and the cable's placement in an installation may need to be moved to alleviate these issues.

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4K ULTRA HD

HDBaseT™ Extender

w/ Ethernet, RS-232, 2-way IR, 2-way Audio, and Bidirectional POH

4 Appendix

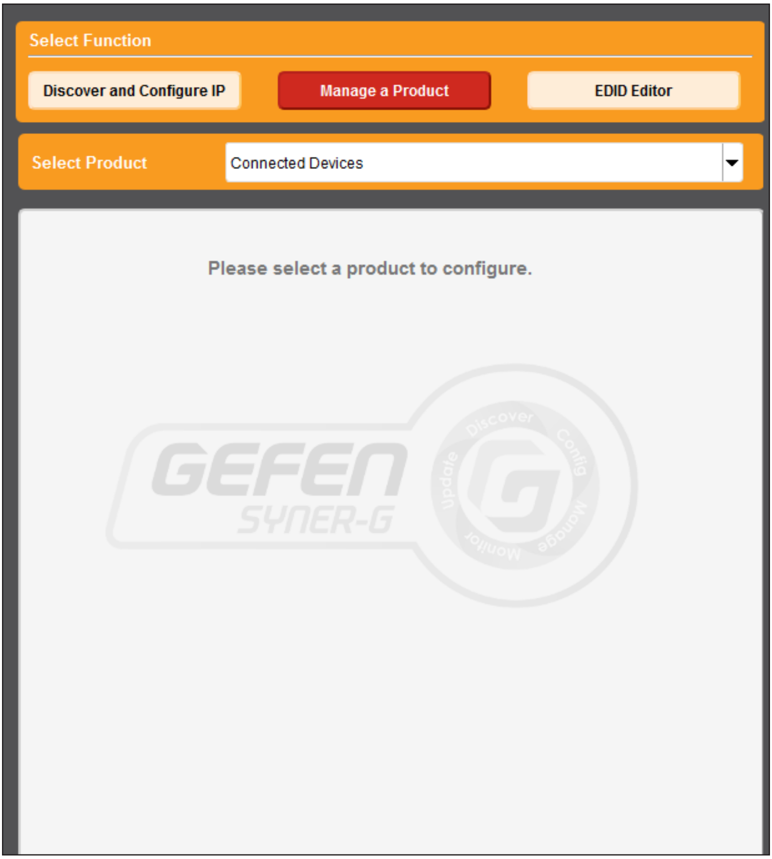
Updating the Firmware

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.

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

Gefen
Syner-G

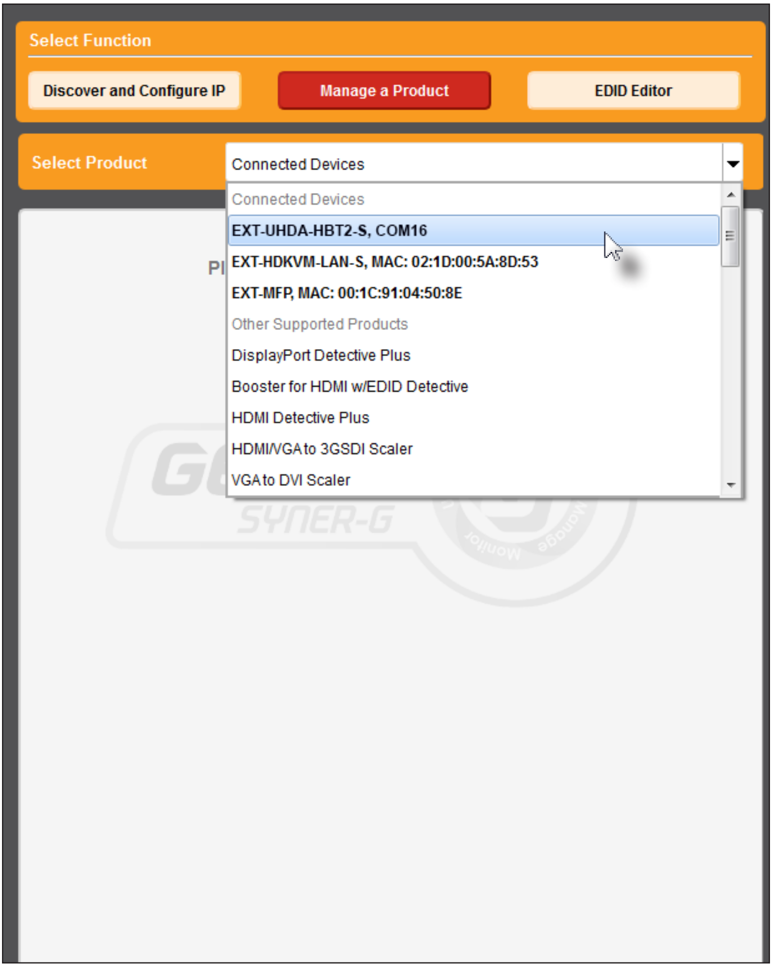
2. Click the **Manage a Product** button.


Select Function
Discover and Configure IP
Manage a Product
EDID Editor
Select Product
GEFEN
SYNER-G
Discover
Config
Manage
Monitor
Update

Connected Devices

Please select a product to configure.

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



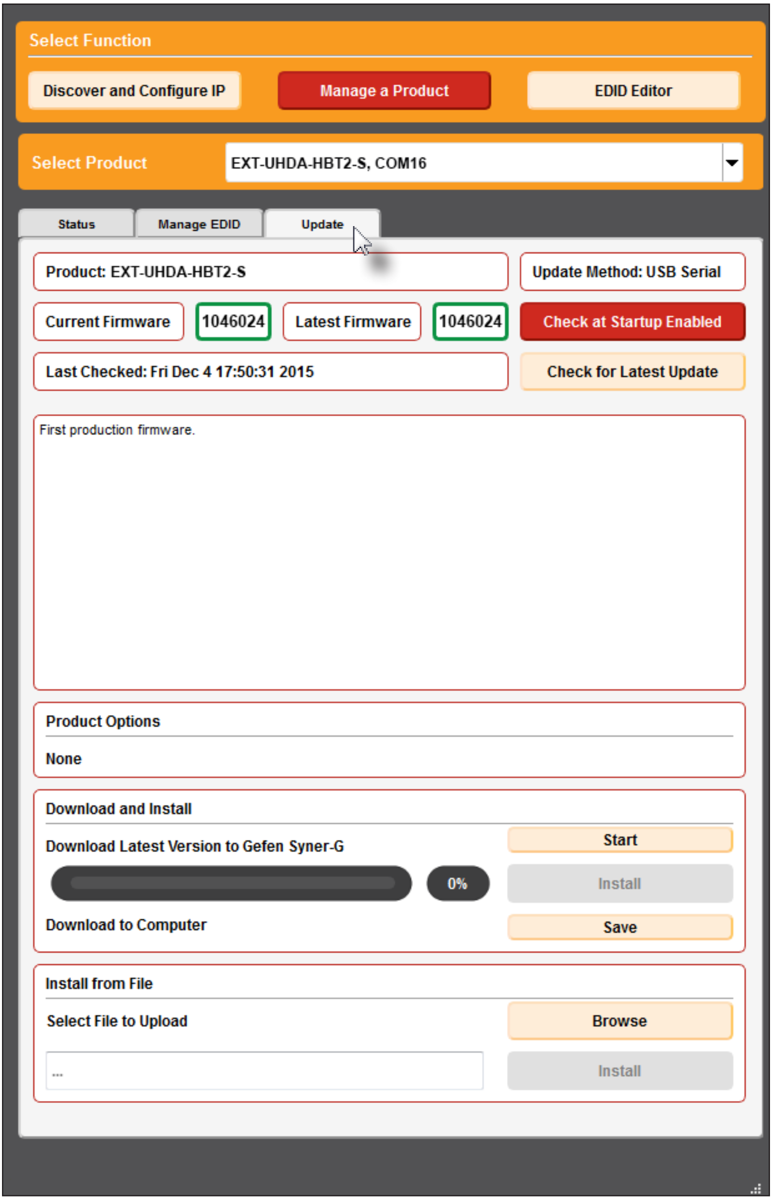
Connected Devices

Connected Devices
EXT-UHDA-HBT2-S, COM16
EXT-HDKVM-LAN-S, MAC: 02:1D:00:5A:8D:53
EXT-MFP, MAC: 00:1C:91:04:50:8E
Other Supported Products
DisplayPort Detective Plus
Booster for HDMI w/EDID Detective
HDMI Detective Plus
HDMI/VGA to 3GSDI Scaler
VGA to DVI Scaler

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 24) for more information.

4. Click the **Update** tab.


Select Function
Discover and Configure IP
Manage a Product
EDID Editor
Select Product
Status
Manage EDID
Update
Check at Startup Enabled
Check for Latest Update
Download and Install
Download Latest Version to Gefen Syner-G
Start
0%
Install
Download to Computer
Save
Install from File
Select File to Upload
Browse
...
Install

Select Product: EXT-UHDA-HBT2-S, COM16

Product: EXT-UHDA-HBT2-S

Update Method: USB Serial

Current Firmware: 1046024

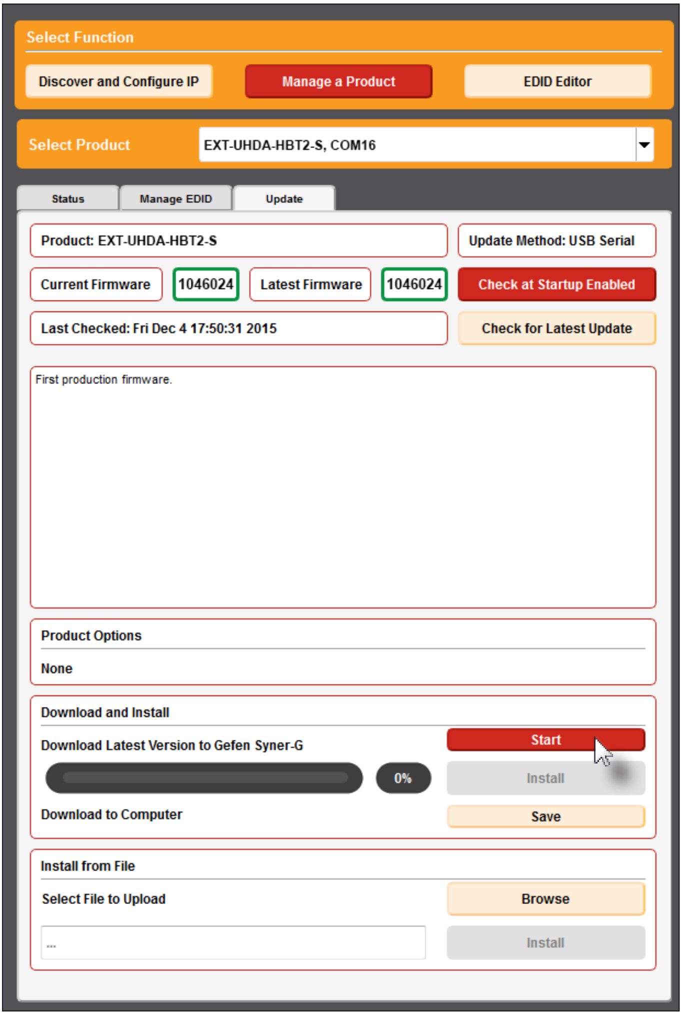
Latest Firmware: 1046024

Last Checked: Fri Dec 4 17:50:31 2015

First production firmware.

Product Options: None

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


Select Function
Discover and Configure IP
Manage a Product
EDID Editor
Select Product
Status
Manage EDID
Update
Check at Startup Enabled
Check for Latest Update
Download and Install
Start
Install
Save
Install from File
Browse
Install

Select Product: EXT-UHDA-HBT2-S, COM16

Product: EXT-UHDA-HBT2-S

Update Method: USB Serial

Current Firmware: 1046024

Latest Firmware: 1046024

Last Checked: Fri Dec 4 17:50:31 2015

First production firmware.

Product Options

None

Download Latest Version to Gefen Syner-G: 0%

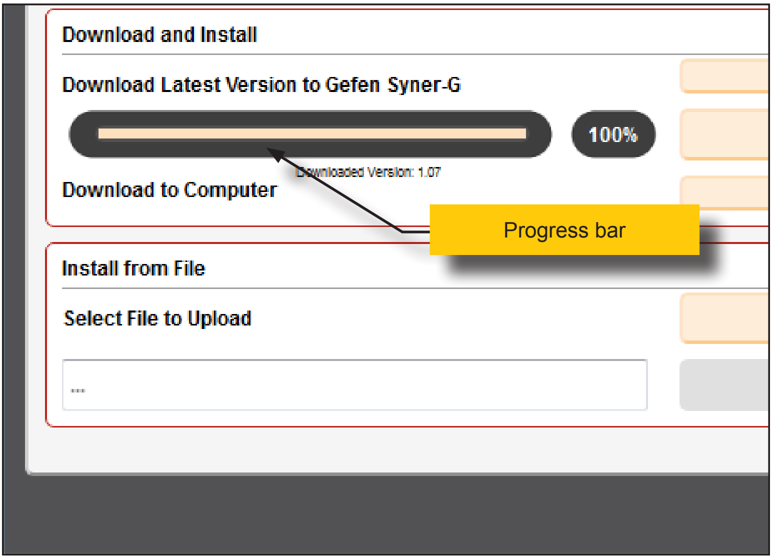
Download to Computer

Select File to Upload: ...

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

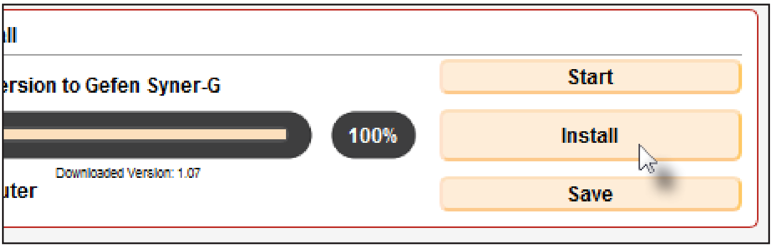
Once the download process has completed, the progress bar will indicate 100%, as shown on the next page.

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



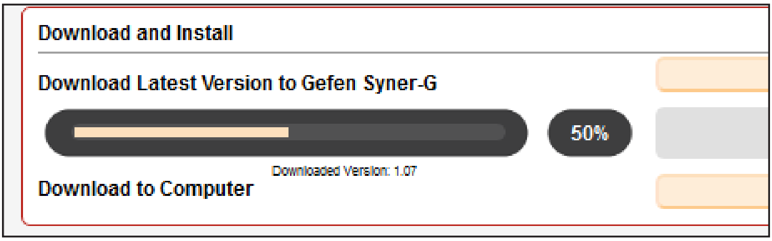
Download and Install
Download Latest Version to Gefen Syner-G
100%
Downloaded Version: 1.07
Download to Computer
Progress bar
Install from File
Select File to Upload
...

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



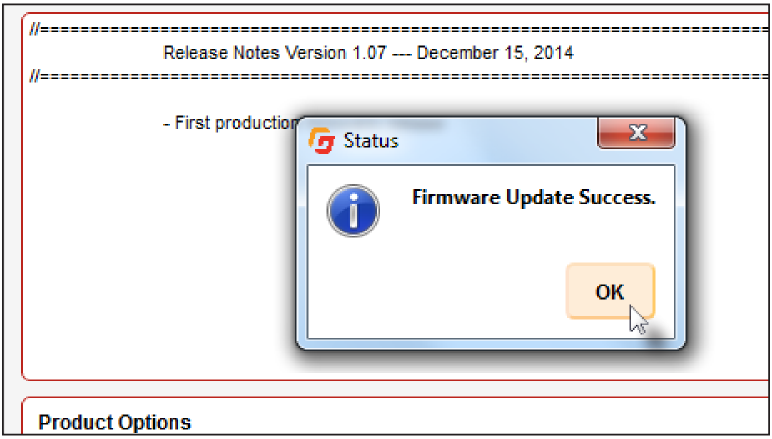
ll
ersion to Gefen Syner-G
100%
Downloaded Version: 1.07
uter
Start
Install
Save

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



Download and Install
Download Latest Version to Gefen Syner-G
50%
Downloaded Version: 1.07
Download to Computer

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



//==

Release Notes Version 1.07 --- December 15, 2014

//==

- First production

Firmware Update Success.

Product Options

9. Click the **OK** button to dismiss the message box.

10. The procedure is now complete.

Sender unit default settings

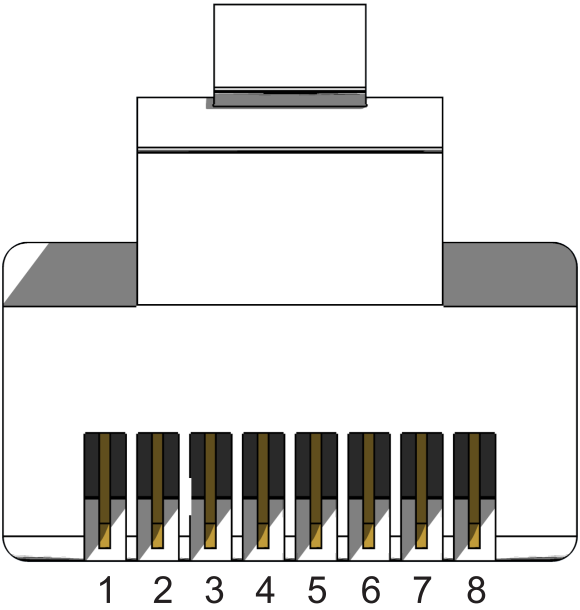
DIP swtich	Funciton	Default setting (OFF position)
1	EDID mode	Internal EDID
2	HPD (Hot Plug Detect)	High
3	EDID lock	Disabled
4	HDCP	Pass-through
5	IR carrier	Pass-through to Receiver unit
6	IR carrier	Pass-through to Sender unit
7	IR polarity	Uses Gefen part no. EXT-RMT-EXTIRN
8	HDBT mode	Enabled
9	IR carrier frequency	38 kHz
10	IR carrier frequency	38 kHz
11	N/A	---
12	N/A	---

Receiver unit default settings

DIP swtich	Funciton	Default setting (OFF position)
1	IR carrier	Pass-through to Receiver unit
2	IR carrier	Pass-through to Sender unit
3	IR polarity	Uses Gefen part no. EXT-RMT-EXTIRN
4	HDBT mode	Enabled
5	IR carrier frequency	38 kHz
6	IR carrier frequency	38 kHz
7	N/A	---
8	N/A	---

Network Cable Diagram

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.

Specifications

Supported Formats	
Resolutions (max.)	• 3840 x 2160p 60 Hz (4:2:0) • 4096 x 2160p 30 Hz (4:4:4) • 3840 x 2160p 30 Hz (4:4:4)

Connectors, Controls, and Indicators	
HDMI In (Sender)	• 1 x Type A 19-pin female, locking
HDMI Out (Receiver)	• 1 x Type A 19-pin female, locking
RS-232 (Sender)	• 1 x DB-9, female
RS-232 (Receiver)	• 1 x DB-9, male
Link (Sender / Receiver)	• 1 x RJ-45, shielded
Ethernet (Sender / Receiver)	• 1 x RJ-45, shielded
IR In / Ext (Sender / Receiver)	• 1 x 3.5mm mini-stereo
IR Out (Sender / Receiver)	• 1 x 3.5mm mini-mono
Optical Audio Out (Sender)	• 1 x TOSLINK®
Optical Audio In (Receiver)	• 1 x TOSLINK®
Analog Audio In (Sender)	• 2 x RCA, female
Analog Audio Out (Receiver)	• 2 x RCA, female
POH 48V DC (Sender)	• 1 x 48 V DC power connector
Non-POH 48V DC (Receiver)	• 1 x 48 V DC power connector
USB (Sender / Receiver)	• 1 x Mini-B type (for Gefen Syner-G)
DIP switches (Sender)	• 12 x piano type, 4 per bank
DIP switches (Receiver)	• 8 x piano type, 4 per bank
Link Indicator (Sender / Receiver)	• 1 x LED, blue
Video Indicator (Sender / Receiver)	• 1 x LED, amber
Power Indicator (Sender / Receiver)	• 1 x LED, green

Operational	
Maximum pixel clock	• 300 MHz
Power input	• 48 V DC
Power consumption	• 14 W (Sender / Receiver combined)
Analog audio	
Input Level (max.)	• 2 Vrms
THD	• < 0.01% @ 1 kHz, 2 Vrms
Frequency Response	• 20 Hz - 20 kHz +/- 0.5 dB
SNR	• >= 90 dB (20 Hz - 20 kHz +/- 0.5 dB)

Operational	
Digital audio (S/PDIF)	
Input Level (max.)	• 2 Vrms
THD	• < 0.03% (at 1 kHz, 2 Vrms)
Frequency Response	• 20 Hz - 20 kHz +/- 0.5 dB
SNR	• > 90 dB (20 Hz - 20 kHz)
Sampling Rate (max.)	• 96 kHz
Operating temperature	• +32 to +122 ºF (0 to +50 ºC)
Operating humidity	• 5% to 90% RH, non-condensing
Storage temperature	• -4 to +185 ºF (-20 to +85 ºC)
Storage humidity	• 0% to 95% RH, non-condensing
MTBF	• 50000 hours

Physical	
Dimensions (W x D x H) (Sender / Receiver)	• 8.5” x 1” x 4” (214mm x 25mm x 100mm)
Unit weight	• 0.75 lbs (0.35 kg)

A

Application Diagram *7*

C

Connection Instructions *6*

D

Default Settings
    receiver unit 52
    sender unit 52
DIP Switch Configuration
    receiver unit 12
    sender unit 10

E

EDID
    copying 31
    downloading 26
    settings 10
    uploading 29
    viewing 33

F

Features *vi*
Firmware
    updating 46

H

HDCP Control *11*
HPD Control *10*

I

IR Carrier
    filter 11, 13
    frequency 12, 13
IR Control
    controlling source and display 18
    controlling the display 17
    controlling the source 16
IR Polarity *11, 13*

L

LED Status *15*
Link Quality *37*
    channel configuration 37
    clearing logs 40
    error logging 39
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