



HDMI to 3GSDI Converter

EXT-HD-3G-C

User Manual



Release A2

Important Safety Instructions

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this unit 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 unit 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 unit.
11. Only use attachments/accessories specified by the manufacturer.
12. To reduce the risk of electric shock and/or damage to this unit, never handle or touch this unit or power cord if your hands are wet or damp. Do not expose this unit to rain or moisture.
13. Unplug this unit during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the unit 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 unit, the unit has been exposed to rain or moisture, does not operate normally, or has been dropped.
15. Batteries that may be included with this unit 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.

Technical Support

(818) 772-9100 (800) 545-6900
8:00 AM to 5:00 PM Monday - Friday, Pacific Time

Fax

(818) 772-9120

Email

support@gefen.com

Web

<http://www.gefen.com>

Mailing Address

Gefen, LLC
c/o Customer Service
20600 Nordhoff St.
Chatsworth, CA 91311

Product Registration

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

Operating Notes

- Always make sure that the 3GSDI to HDMI Converter is running the latest firmware. The Gefen Syner-G Software Suite is a free downloadable application from Gefen that provides automatic download and installation of firmware upgrades for this product.

Download the application here: <http://www.gefen.com/support/download.jsp>

- The 3GSDI to HDMI Converter is not compatible with HDCP-encoded content. If the input signal is HDCP-encoded, there will be no SDI output.

HDMI to 3GSDI Converter 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 or CE listed power supplies.

Features

- Converts HDMI to SDI
- Input resolutions up to 1920 x 1200 (WUXGA) and 1080p Full HD
- Output resolutions up to 1080p60
- Supports HDMI 12 bit color and SDI 10-bit color
- Supports Color Spaces: 4:4:4 (RGB and YCbCr) and 4:2:2 (YCbCr)
- Supports 3G-SDI Levels A and B
- Up to LPCM 7.1 audio support
- Field configurable via DIP switch settings or Gefen Syner-G™ software
- Gefen Syner-G™ simplifies in-field firmware updates and advanced EDID management
- Mini USB port for use with Gefen Syner-G™
- Wide power supply operating range (6V to 24V DC)
- Locking power supply connector
- 1/4-20 industry-standard camera gear attachment thread on bottom
- Surface-mountable using the included detachable bracket



Packing List

The HDMI to 3GSDI Converter ships with the items 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 HDMI to 3GSDI Converter
- 1 x 6 ft. Locking HDMI Cable
- 1 x Surface Mounting Bracket
- 1 x 12V Power Supply
- 1 x Quick-Start Guide

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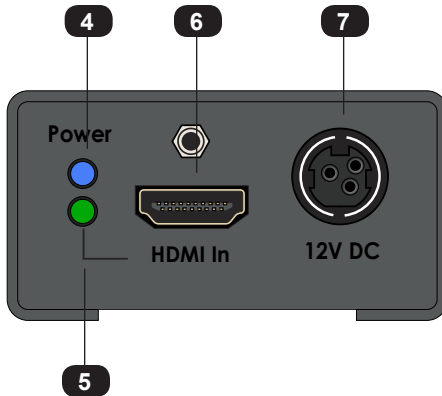
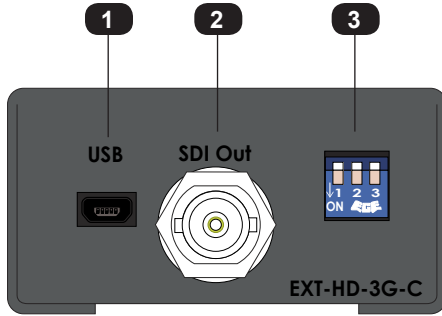
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HDMI to 3GSDI Converter

1

Getting Started



ID	Name	Description
1	USB	This mini-USB port is used for upgrading the firmware.
2	3GSDI Out	Connect a BNC cable from this port to the SDI display.
3	DIP switches	Use these DIP switches to set the operating mode of the converter. See DIP Switches (page 8) for more information.
4	Power	When the HDMI to 3GSDI Converter is powered, this LED indicator will glow solid blue. When power is disconnected, this LED indicator will turn off.
5	HDMI In (Indicator)	This LED indicator will glow solid green when an HDMI cable is connected to the HDMI In port. If the HDMI cable is disconnected, then this LED indicator will turn off.
6	HDMI In	Connect the included HDMI cable from the source to this port.
7	12V DC	Connect the included 12V DC power supply to this power receptacle.

Connection Instructions

▶ Video

1. Connect the included HDMI cable from the HD source to the **HDMI In** port on the HDMI to 3GSDI Converter.
2. Connect a BNC cable from the SDI display to the **SDI In** port on the HDMI to 3GSDI Converter.

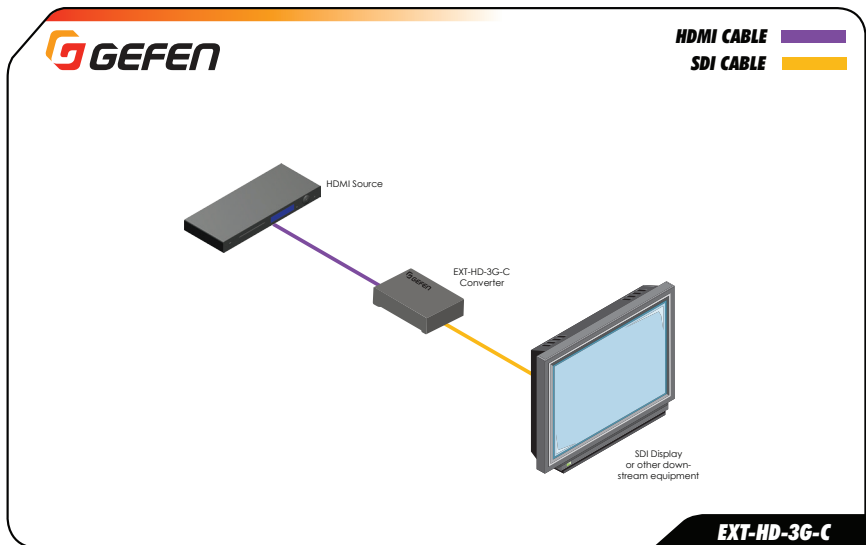
▶ USB (optional Syner-G™ software control)

3. Connect a USB-to-mini USB cable from the HDMI to 3GSDI Converter to a computer that is running the Syner-G™ Software Suite. To complete this portion of the installation, see [Verifying the USB Driver \(page 12\)](#). This connection is *required* for updating the firmware.

▶ Power

4. Connect the included power supply to the 12V DC power receptacle and connect the power cord to an available electrical outlet.

Sample Wiring Diagram



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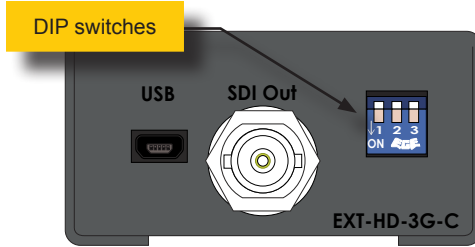
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HDMI to 3GSDI Converter

2 Basic Operation

Pre-programmed EDID Modes

The HDMI to 3GSDI Converter comes with three pre-programmed EDID configurations. Use DIP switch 1 and 2 to set the desired EDID mode. DIP 3 controls the 3G mode.



DIP 1	DIP 2	DIP 3	Description
OFF	OFF		3G/HD/SD-SDI with multichannel audio †
OFF	ON		3G/HD/SD-SDI with two-channel LPCM audio
ON	OFF		HD/SD-SDI with two-channel LPCM audio
ON	ON		Custom EDID Mode *

† DTS-HD Master Audio™ and Dolby® TrueHD are not supported.

* As of this writing, Custom EDID Mode is not available but will be implemented in a future release.

3G Mode

DIP 1	DIP 2	DIP 3	Description
		ON	Enable 3G level-B mode
		OFF	Enable 3G level-A mode

Indicates factory-default settings.

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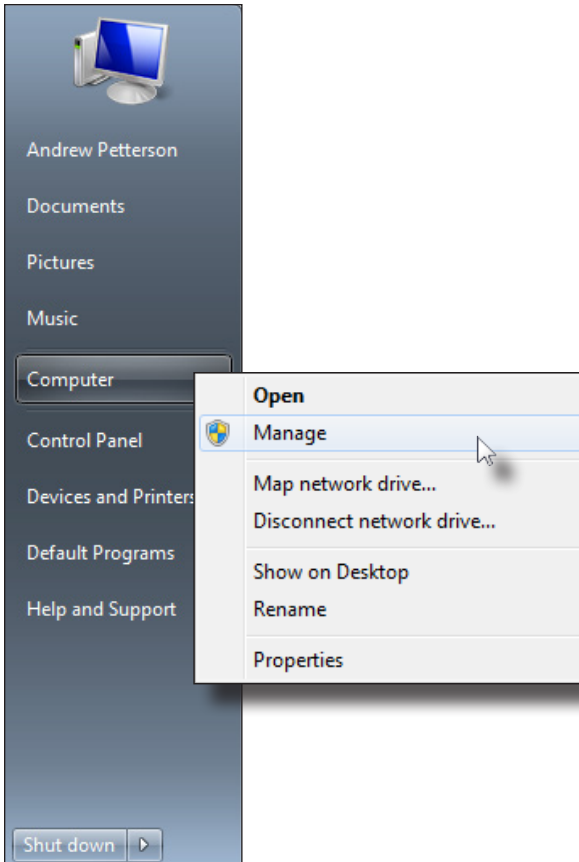
HDMI to 3GSDI Converter

3 Appendix

Verifying the USB Driver

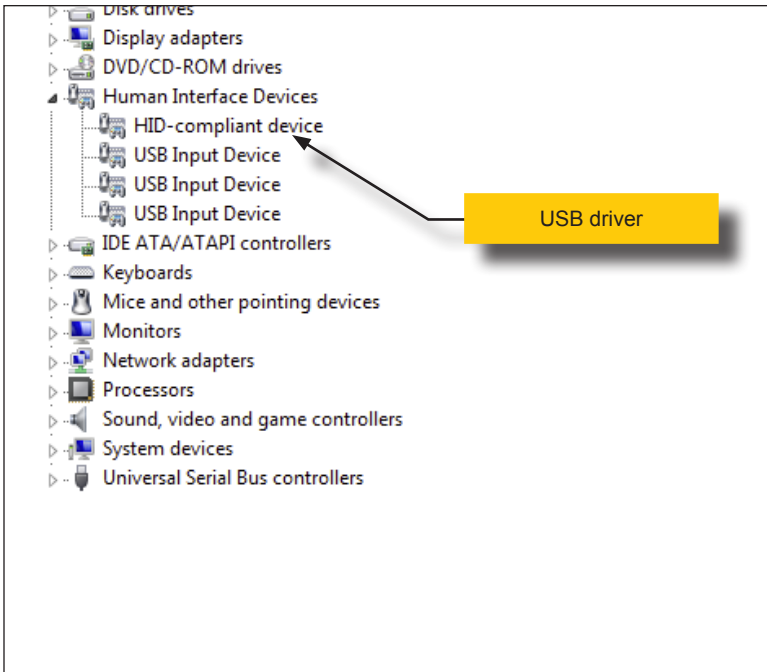
In order to control the HDMI to 3GSDI Converter using the Syner-G™ Software Suite, a USB driver must be installed on the computer that is connected to the HDMI to 3GSDI Converter. The driver is automatically installed when the Syner-G™ Software Suite is installed.

1. Install the Gefen Syner-G™ Software Suite. This software is available under the **Support > Downloads** section of the Gefen website.
2. Connect a mini-USB-to-USB cable (not included) from the **USB** port on the HDMI & VGA to 3GSDI Scaler/Converter to an available USB port on the host computer.
3. From the Windows Desktop, click the **Start** button, select **Computer**, then right-click on **Manage**.



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 **Human Interface Devices**.
The device **HID-compliant device** will be displayed

This indicates that the HDMI to 3GSDI Converter has been detected.



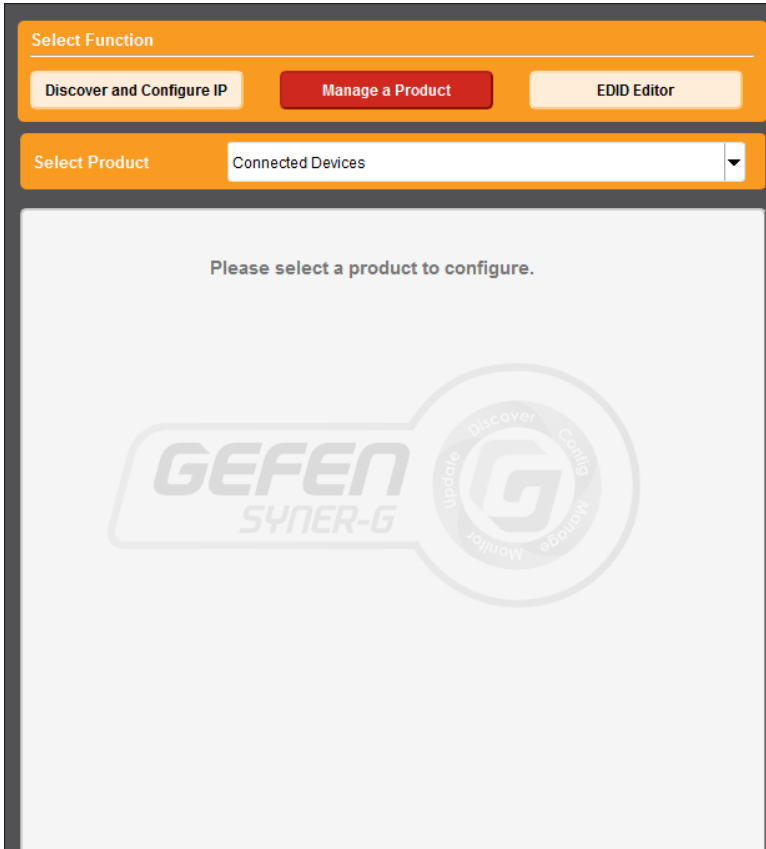
Updating the Firmware

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.

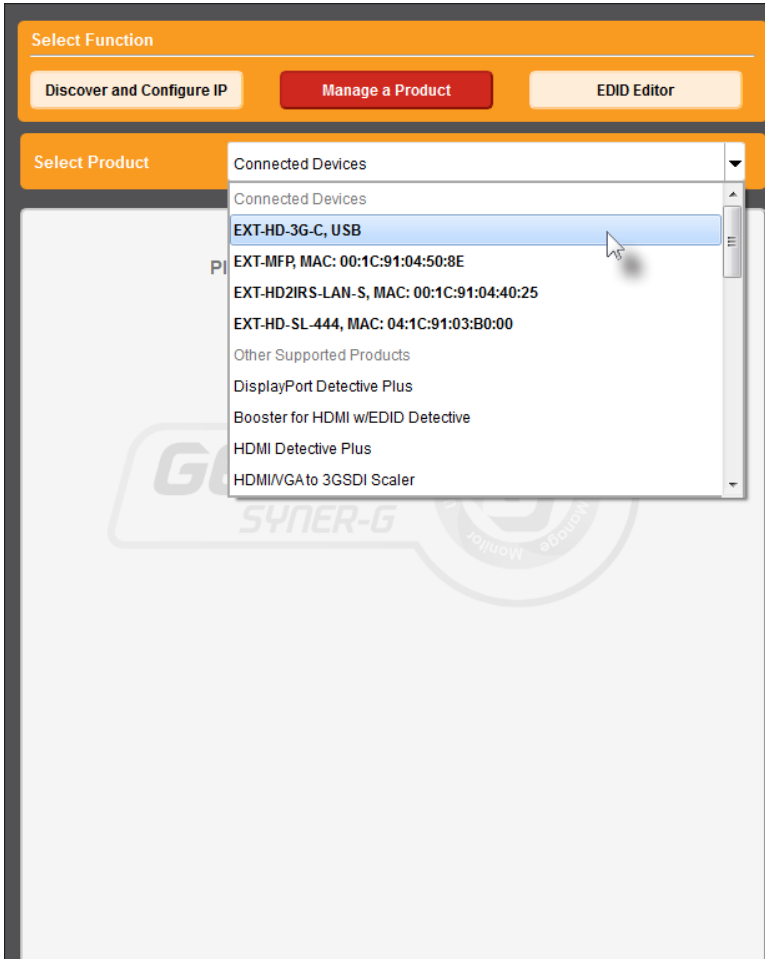
1. Launch the Syner-G™ Software Suite from the Start Menu or using the shortcut from the Windows Desktop.



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



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



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 HDMI to 3GSDI Converter 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 \(page 12\)](#) for more information.

4. Click the **Update** tab.

Select Function

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

Select Product EXT-HD-3G-C, USB

Manage EDID **Update**

Product: EXT-HD-3G-C Update Method: USB

Current Firmware: X Latest Firmware: 1.06 Check at Startup Enabled

Last Checked: Tue Nov 3 13:55:46 2015 Check for Latest Update

```
//=====
Release Notes Version 1.06 --- December 15, 2014
//=====

- First production firmware release
```

Product Options

None

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

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

The screenshot shows the 'Update' tab of the 'Manage a Product' interface. The 'Select Product' dropdown is set to 'EXT-HD-3G-C, USB'. The 'Update Method' is 'USB'. The current firmware is 'X' and the latest is '1.06'. The 'Check at Startup' option is enabled. The 'Last Checked' time is 'Tue Nov 3 13:55:46 2015'. The release notes for version 1.06, dated December 15, 2014, indicate it is the first production firmware release. Under 'Product Options', there are no options. In the 'Download and Install' section, the 'Download Latest Version to Gefen Syner-G' progress bar is at 0%. The 'Start' button is highlighted with a mouse cursor. Other buttons include 'Install', 'Save', 'Browse', and 'Install'.

Select Function

Discover and Configure IP Manage a Product EDID Editor

Select Product EXT-HD-3G-C, USB

Manage EDID Update

Product: EXT-HD-3G-C Update Method: USB

Current Firmware X Latest Firmware 1.06 Check at Startup Enabled

Last Checked: Tue Nov 3 13:55:46 2015 Check for Latest Update

```
//=====
//                               Release Notes Version 1.06 --- December 15, 2014
//=====
- First production firmware release
```

Product Options

None

Download and Install

Download Latest Version to Gefen Syner-G Start

0% Install

Download to Computer Save

Install from File

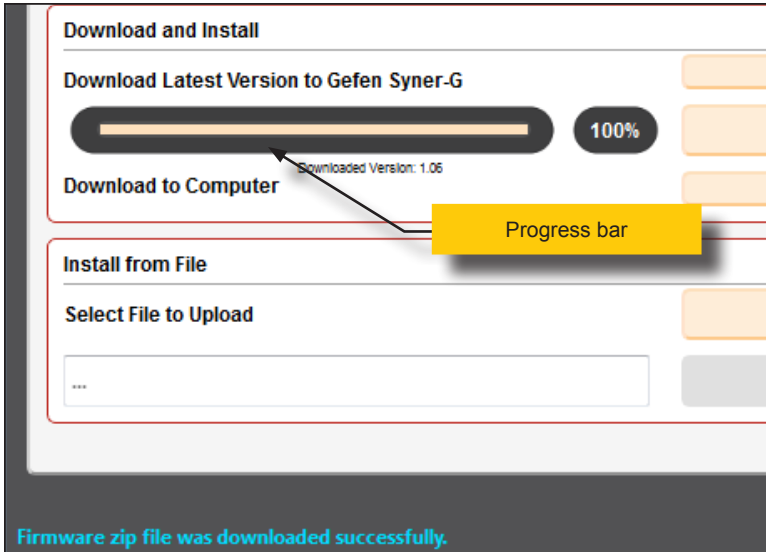
Select File to Upload Browse

... Install

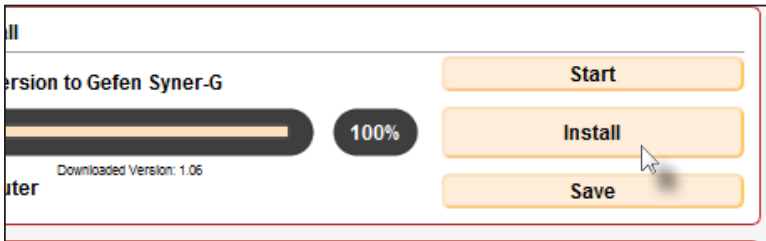
The Syner-G™ Software Suite will automatically download the firmware file for the selected product. This process should take a few seconds.

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

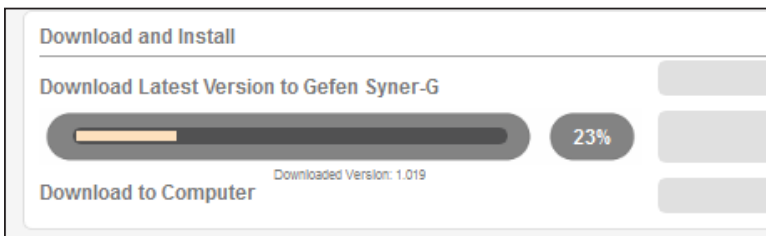
A message will also appear at the bottom of the window, indicating that the firmware file was successfully downloaded.



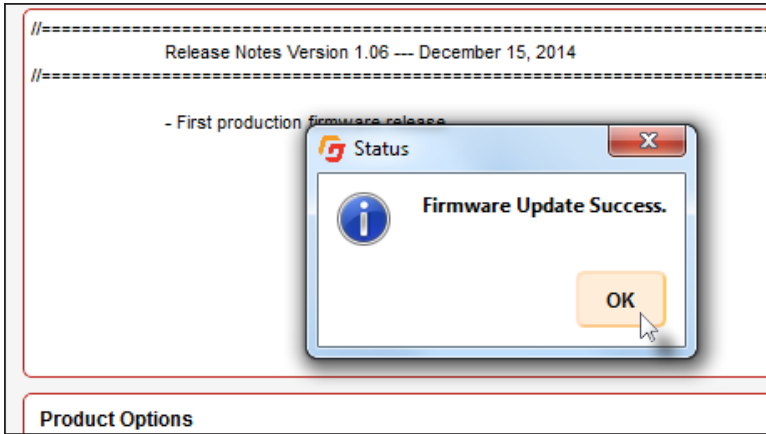
- Click the **Install** button to begin installing the software.



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



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

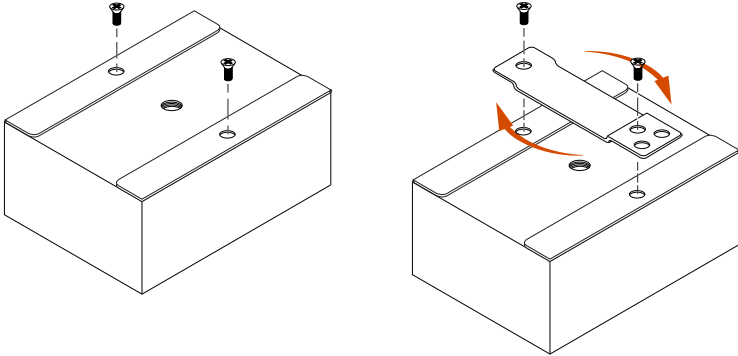


- Click the **OK** button to dismiss the message box.
- The procedure is now complete.

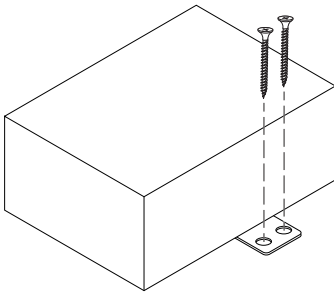
The HDMI to 3GSDI Converter can be mounted on any flat surface using the included mount or on a camera tripod. Mounting screws are not included.

Flat Surface

1. Remove the two screws on the bottom of the unit.
2. Place the included mount, as shown, so that it rests between the two flanges. Note that the mount can be placed in either direction, as shown by the arrows.



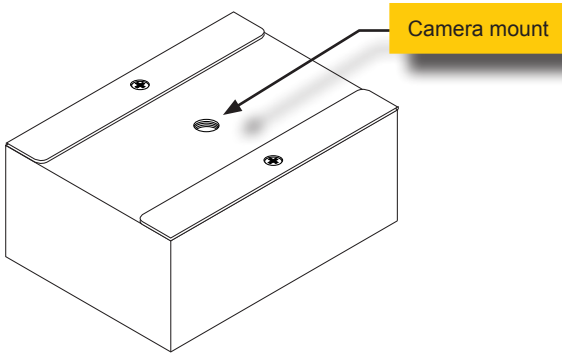
3. Replace the two enclosure screws and tighten to secure the mount to the unit.
4. Mount the unit, as shown (screws not included).



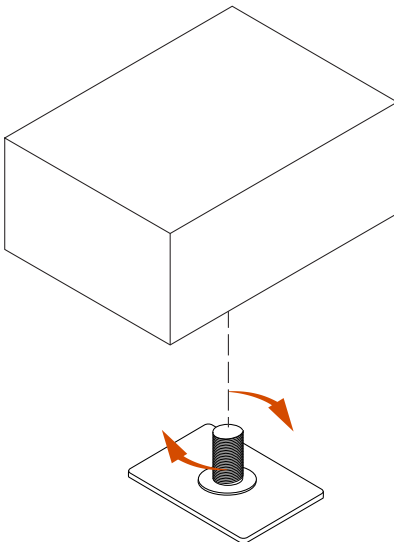
For installation on a drywall surface, use a #6 drywall screw. When installing, it is recommended to thread the drywall screws into a stud.

Camera Mount

1. The center hole is used to mount the HDMI to 3GSDI Converter to a camera tripod.



2. Mount the HDMI to 3GSDI Converter on a camera mount using a 1/4" 20-thread screw.
3. Hand-tighten the mounting screw, from the bottom, until the HDMI to 3GSDI Converter is secure. Do not overtighten the screw.



Connectors, Controls, and Indicators

Video Input	<ul style="list-style-type: none"> • 1 x HDMI Type A 19-pin, female, locking
Video Output	<ul style="list-style-type: none"> • 1 x SDI BNC-type, female
USB	<ul style="list-style-type: none"> • 1 x Mini-B
Configuration Switches	<ul style="list-style-type: none"> • 3 x DIP-type
HDMI Indicator	<ul style="list-style-type: none"> • 1 x LED, green
Power Indicator	<ul style="list-style-type: none"> • 1 x LED, blue
Power Receptacle	<ul style="list-style-type: none"> • 1 x 3-pin, locking

Operational

Maximum Pixel Clock	<ul style="list-style-type: none"> • 150 MHz
Maximum TMDS Clock	<ul style="list-style-type: none"> • 225 MHz
Power Supply	<ul style="list-style-type: none"> • 12V DC, nominal • 6V to 24V DC, operating range
Power Consumption	<ul style="list-style-type: none"> • 3W, maximum
Operating Temperature	<ul style="list-style-type: none"> • +32 to +122 °F (0 to +50 °C)
Operating Humidity	<ul style="list-style-type: none"> • 5% to 90% RH, non-condensing
Storage Temperature	<ul style="list-style-type: none"> • -4 to +185 °F (-20 to +85 °C)
Storage Humidity	<ul style="list-style-type: none"> • 0% to 95% RH, non-condensing
MTBF	<ul style="list-style-type: none"> • 50000 hours

Physical

Dimensions (W x H x D)	<ul style="list-style-type: none"> • 2.9" x 1.2" x 2.3" (74mm x 30mm x 59mm)
Unit Weight	<ul style="list-style-type: none"> • 0.3 lbs (0.15 kg)

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