

Gefen®

3GSDI to HDMI® 1.3 Converter

**EXT-3GSDI-2-HDMI1.3
User Manual**



www.gefen.com

ASKING FOR ASSISTANCE

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INTRODUCTION

Congratulations on your purchase of the 3GSDI to HDMI 1.3 Converter. Your complete satisfaction is very important to us.

Gefen

Gefen delivers innovative, progressive computer and electronics add-on solutions that harness integration, extension, distribution and conversion technologies. Gefen's reliable, plug-and-play products supplement cross-platform computer systems, professional audio/video environments and HDTV systems of all sizes with hard-working solutions that are easy to implement and simple to operate.

The Gefen 3GSDI to HDMI 1.3 Converter

The Gefen 3GSDI to HDMI 1.3 Converter will take any SDI, HD-SDI, or 3G-SDI video signal and convert it to HDMI 1.3. The SDI input resolution will simply be converted to an HDMI signal. DIP switches on the unit will allow the user to select features such as Deep Color conversion and colorspace. A useful 720p (60Hz) test pattern is also available, without connecting an SDI source, for checking the HDMI video output. An SDI loop out and 2 channel analog audio outputs are also provided for monitoring the input SDI source.

How It Works

The 3GSDI to HDMI 1.3 Converter will convert the input SDI signal (SD/HD/3G) to an HDMI compatible signal. Connect the SDI source device to the video input on the unit. Connect an HDMI compatible device on the video output on the unit. Adjust DIP switch features and connect the power supply. It's that simple.

OPERATION NOTES

READ THESE NOTES BEFORE INSTALLING OR OPERATING THE 3GSDI TO HDMI 1.3 CONVERTER

- Supports the following SMPTE standards: 259M, 292M, SMPTE 274M, SMPTE 296M, ITU-R BT.656 and ITU-R BT.601
- Handles 3G-SDI SMPTE 425-A and 425-B / formats 1080P 50/59.94/60.
- Support of 4 stereo 48 kHz audio streams.
- The 3GSDI to HDMI 1.3 Converter supports the following resolutions:

Video Resolution	Refresh Rate (Hz)	Rate
525i (NTSC) (480i)	59.94	SD
525p (480p)	59.94	SD
525p (480p)	60	SD
625i (PAL) (576i)	50	SD
625p (576p)	50	SD
720p	23.98	HD
	24	HD
	25	HD
	29.97	HD
	30	HD
	50	HD
	59.94	HD
	60	HD
1080i	50	HD
	59.94	HD
	60	HD
1080p	23.98	HD
	24	HD
	25	HD
	29.97	HD
	30	HD
	50	3G lev.A/B
	59.94	3G lev.A/B
	60	3G lev.A/B
2K	23.97	HD
	24	HD
	25	HD

FEATURES

Features

- Field upgradable firmware using the built-in USB port.
- Supports a test pattern at 720P/60 without needing a valid source signal
- HDMI 1.3 compliant
- Support for YCbCr, RGB, 4:2:2, 4:4:4, and 8 to 10 bits output formats.
- Color space support: YCbCr, RGB.
- Color sampling: 4:2:2 and 4:4:4.
- Bit depth: 8, 10 bits.
- Auto-detects optimal monitor format with EDID display capability information.
- Support of 4 stereo 48 kHz audio streams.
- Supports up to 8 channels of PCM audio embedded into the HDMI output signal
- Supports Dolby Digital/DTS AC3 encoded audio
- Automatic detection of SD, HD and 3G-SDI formats on the input
- A re-clocked copy of the SDI input is available on the output SDI connector.
- Audio from SDI input channels 1 & 2 can be monitored through 3.5mm mini-stereo RCA-jack analog audio connectors

Package Includes

- (1) 3GSDI to HDMI 1.3 Converter
- (1) 5V DC Locking Power Supply
- (1) User Manual

PANEL LAYOUT

Front Panel



Back Panel



PANEL DESCRIPTIONS

1 Video Lock LED Indicator

This indicator will become active when the SDI input (SD/HD/3G) is locked.

2 3G LED Indicator

This indicator will become active when the SDI input is a 3G source.

3 Power LED Indicator

This indicator will become active when power is being supplied to the unit via the included 5V DC power adapter.

4 Locking 5V DC Power Receptacle

This input will accept power via the included locking 5V DC power supply. Connect the power supply between this input and an open wall power socket.

5 USB Update Port

This port is used to update firmware. For current firmware releases please see the download section at www.gefen.com.

6 Analog RCA Audio Output

This input will output up to 2 channels of analog audio via 2 RCA style analog audio connectors. This audio will be extracted from the incoming SDI source for monitoring purposes.

7 SDI Input

This input will accept a single SDI video source. For acceptable input formats please see page 2.

8 SDI Loop Output

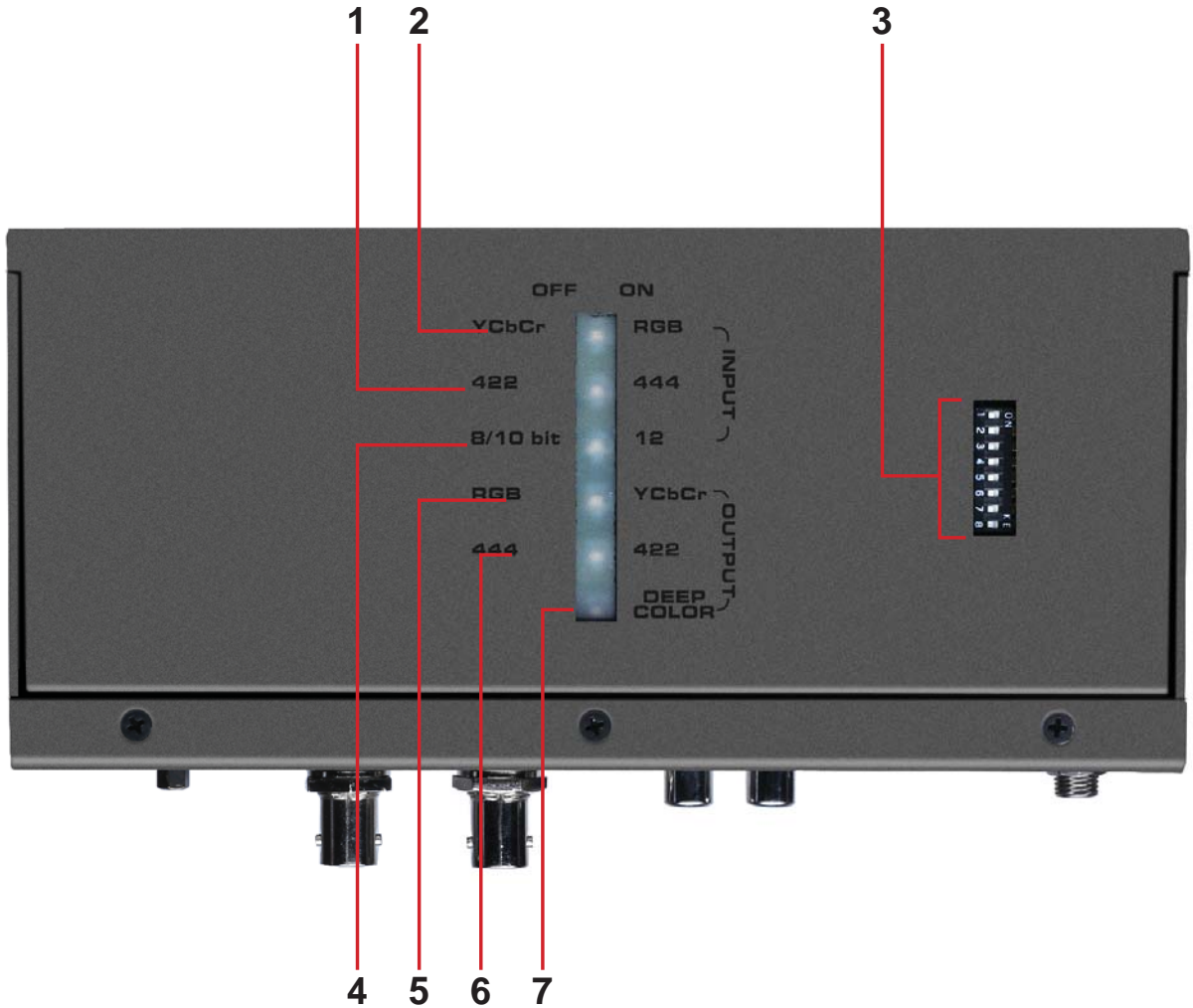
This output will mirror the input SDI video source. This is useful for monitoring the SDI input source.

9 HDMI Output

This output will accept a single HDMI type A male cable. The converted SDI signal will be output through this port. Audio and video are both supported by this port. For a complete listing of the acceptable SDI, audio and video formats please see page 2.

BOTTOM PANEL LAYOUT

Bottom Panel



BOTTOM PANEL DESCRIPTIONS

1 SDI Input Color Sampling LED Indicator

This LED indicator will relay the status of the incoming SDI input's color sampling. Options are either 4:4:4 (LED ON) or 4:2:2 (LED OFF).

2 SDI Input Color Space LED Indicator

This LED indicator will relay the status of the incoming SDI input's color space. Options are either RGB (LED ON) or YCbCr (LED OFF).

3 Configuration DIP Switches

This DIP (Dual In-line Packages) switches will enable/disable features on the 3GSDI to HDMI 1.3 Converter. For a complete listing of DIP switch features and functions please see page 9.

4 SDI Input Color Depth LED Indicator

This LED indicator will relay the status of the incoming SDI input's color depth. Options are either 12 bit (LED ON) or 8/10 bit (LED OFF).

5 HDMI Output Color Space LED Indicator

This LED indicator will relay the status of the outgoing HDMI output's color space. Options are either YCbCr (LED ON) or RGB (LED OFF).

6 HDMI Output Color Sampling LED Indicator

This LED indicator will relay the status of the outgoing HDMI output's color sampling. Options are either 4:4:4 (LED ON) or 4:2:2 (LED OFF).

7 HDMI Output Deep Color LED Indicator

This LED indicator will relay the status of Deep Color in the HDMI's output. Options are either Deep Color ON (LED ON) or Deep Color OFF (LED OFF).

CONNECTING AND OPERATING THE 3GSDI TO HDMI 1.3 CONVERTER

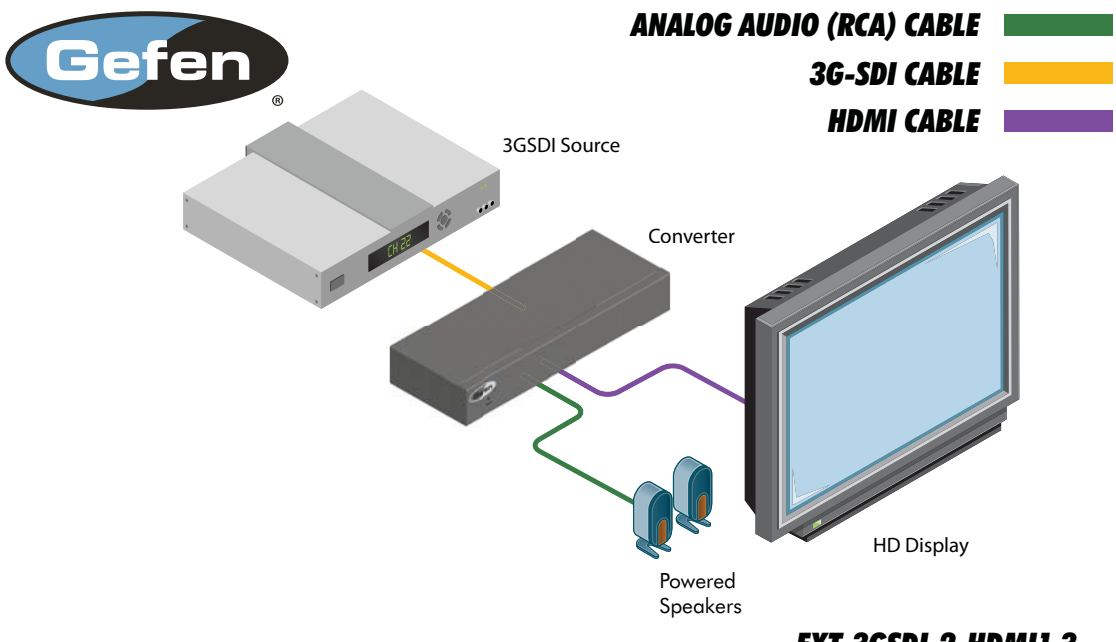
How to Connect the 3GSDI to HDMI 1.3 Converter

1. Connect the SDI source (SD/HD/3G) to the SDI input on the 3GSDI to HDMI 1.3 Converter using a user supplied SDI cable.
2. Optionally, connect an SDI capable output device to the SDI loop out connector for monitoring of the SDI input signal.
3. Optionally connect a 2 channel analog audio device to the 2 RCA style analog audio connectors for monitoring of the audio from the SDI input.
4. Connect an HDMI capable output device to the HDMI output port on the 3GSDI to HDMI 1.3 Converter using a user supplied HDMI cable.

NOTE: By default, the features in the EDID of the sink device are used to configure the output color space, sampling, and bit depth. These features can be overridden by adjusting the DIP switches on the bottom panel of the 3GSDI to HDMI 1.3 Converter. Please see page 9 for more information.

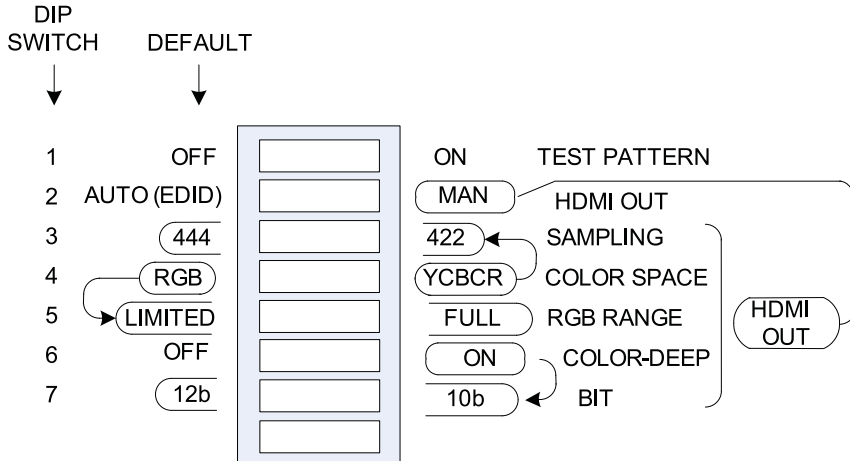
5. Connect included 5V DC power supply to the locking power receptacle of the 3GSDI to HDMI 1.3 Converter and an open wall power socket.

Wiring Diagram for the Gefen 3GSDI to HDMI 1.3 Converter



DIP SWITCH FEATURES

The 3GSDI to HDMI 1.3 Converter has a series of DIP switches that will allow manual configuration of the HDMI's output video signal. There is also a DIP switch to display a test pattern through the HDMI output. Please see the next page for DIP switch features and operation.



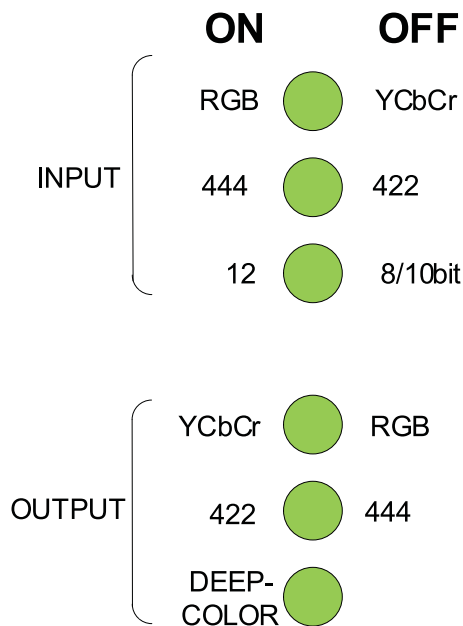
Switch	Description	OFF (Factory Default)	On
1	Test pattern	Off	On
2	EDID	Auto	Manual
3	HDMI Out Sampling	4:4:4	4:2:2
4	HDMI Out Color Space	RGB	YCbCr
5	HDMI Out RGB Range	Limited	Full
6	HDMI Out Deep-Color	Off	Deep
7	HDMI Out Bit Depth	12b	10b
8	Spare Unused	N/A	N/A

- 1 The color bar test pattern is in 720p (60Hz) format. No valid input is necessary at the SDI connector to use the test pattern.
- 2 When this switch is turned OFF (Auto), the HDMI output is configured according to what is reported inside the HDMI sink EDID connected to the mini converter. When turned ON(Manual), the switches 3 to 7 are used instead for the configuration of the HDMI link.

DIP SWITCH FEATURES

- When the EDID switch is ON (set to manual), this switch sets the output sampling of the video: 4:2:2 or 4:4:4.
- When the EDID switch is ON (set to manual), this switch sets the output color space of the video: YCbCr or RGB.
- When the EDID switch is ON (set to manual), and the HDMI output color is RGB, this switch specifies the video range: limited (16-235) or full range (0-255).
- When the EDID switch is ON (set to manual), this switch forces the output into Deep Color, 12-bits or into 8 bits.
- When the EDID switch is ON (set to manual) and DIP switch 6 is set to ON (Deep Color), this switch forces the output into 10-bit or 12-bit.

LED INDICATORS



FIRMWARE UPDATE

Things you'll need:

- Computer running Windows XP or Vista
- 3GSDI Converter Firmware Loader 1.1.18 software
- USB cable (to-male)
- Firmware files contained in 3GSDI To HDMI Converter Firmware 1.1.5

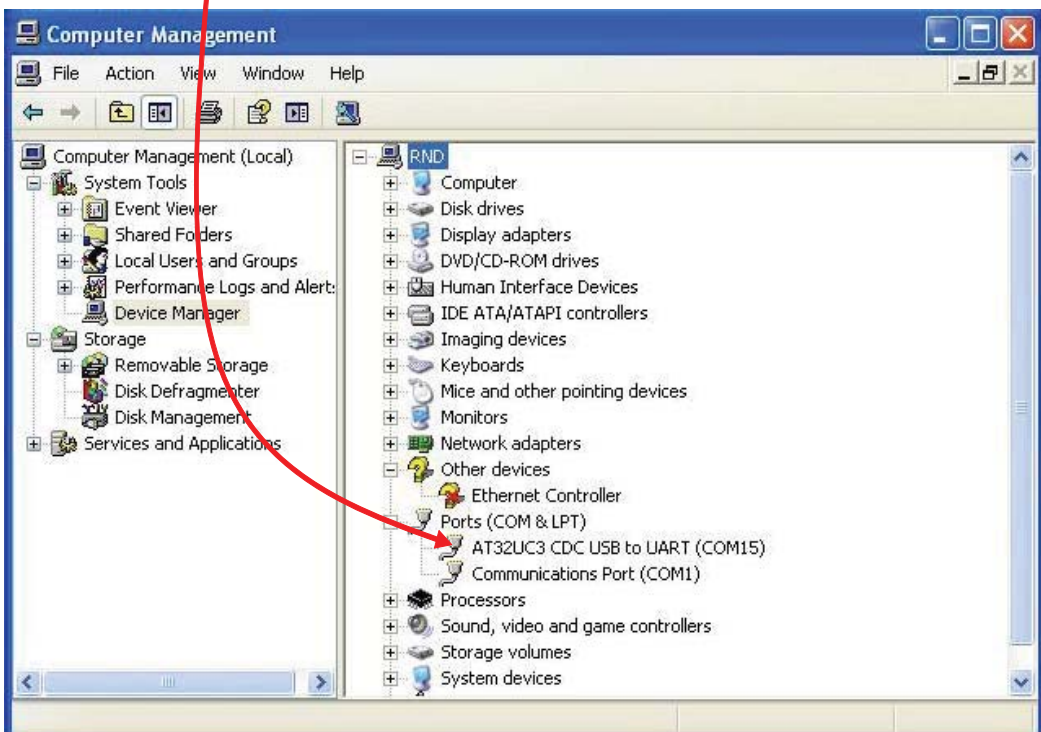
1. Download 3GSDI Converter Firmware Loader 1.0.18 from <http://www.gefen.com/kvm/support/download.jsp>

a. Create a new folder and decompress the downloaded file Mini_Updater_Release_1_0_18.zip into the newly created folder.

b. Read and follow instructions on the Installation Guide.txt for installing the firmware loader software.

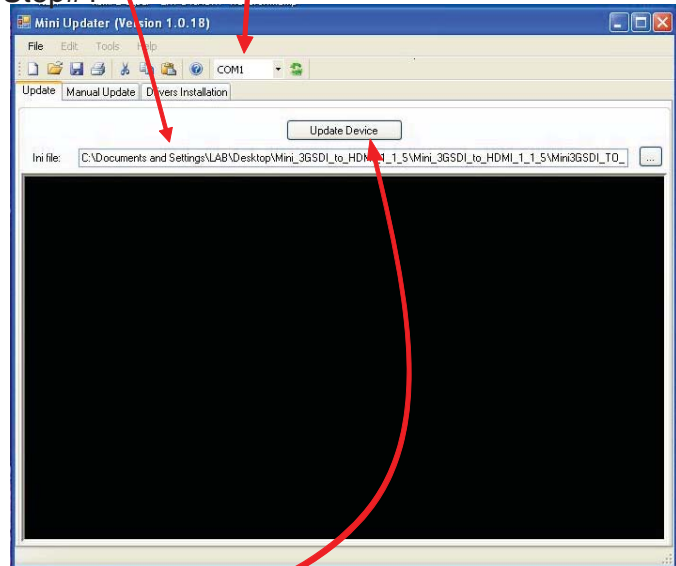
2. Connect the USB cable between your PC and the EXT-3GSDI-2-HDMI1.3

a. Check Device Manager on Windows to find the correct COM port number for the USB connection. Remember this COM port number for use in step #4.



FIRMWARE UPDATE

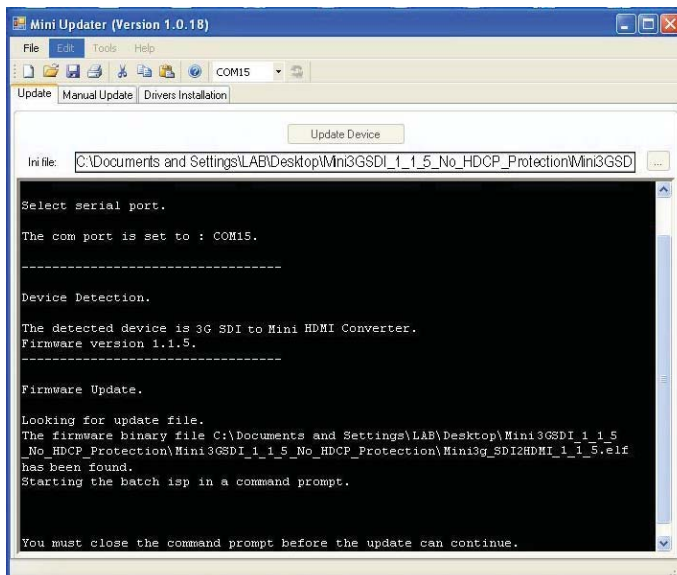
- Download and decompress 3GSDI to HDMI Converter Firmware 1.1.5 from <http://www.gefen.com/kvm/support/download.jsp> to the new folder created in Step #1.
- After installing the Firmware Loader described in Step #2, run the program via the Windows Start Menu....Start/Programs/Gefen/Mini Updater/Mini Updater.
 - Use the drop-down arrow to choose the COM port shown in Step #2.
- Browse for the file Mini3GSDI_TO_HDMI_1_1_5.ini in the new folder created in Step#1



- Once the file is found, click Update Device.

FIRMWARE UPDATE

- After pressing Update Device, you should see this window confirming the correct COM port, the detected device, and the firmware binary file.



- Another window will pop-up showing the firmware loader program doing a communication check



FIRMWARE UPDATE

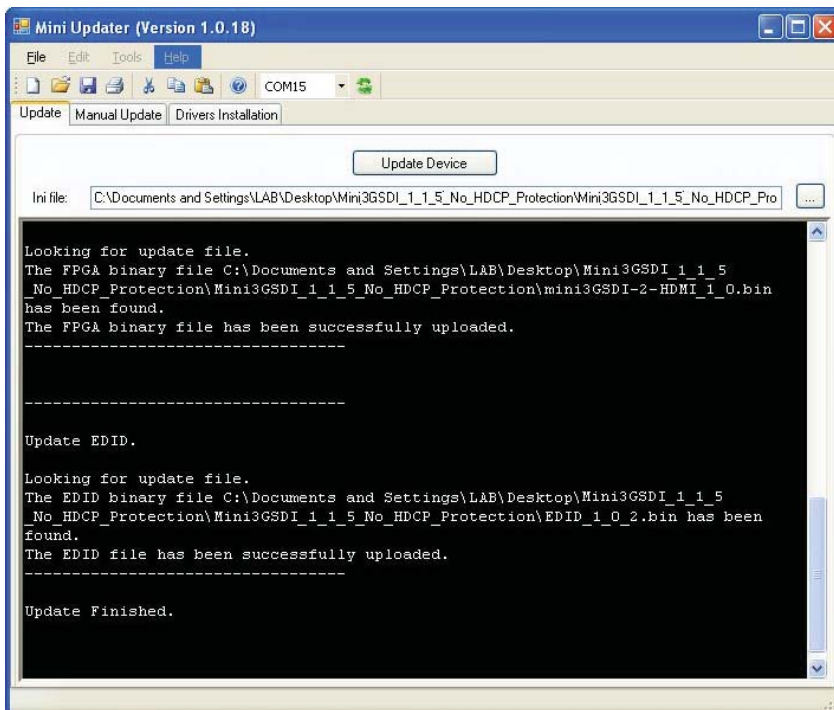
- If all steps are PASS, the firmware upload process can continue. Click YES to continue the update. If there is a FAIL, repeat steps #2-7.



- After clicking YES, this window will appear twice showing th upload progress.



- Once the upload process is complete, another window will pop up showing the message "Update finished".



SPECIFICATIONS

Max. image output resolutions:2K (2048x1080), 1920x1080/60
Input Connector:(1) BNC female SDI/HD-SDI/3G-SDI
Input Connector:(1) Locking 5V DC power connector
Input Connector:(1) USB connector (for firmware upgrades)
Output Connector:(1) BNC female SDI/HD-SDI/3G-SDI (w/buffered input)
Output Connector:(1) HDMI 1.3 Type A 19-pin Male
Output Connectors:(2) L+R analog audio jacks (RCA-type)
Input Video Bandwidth:up to 3.0 Gbps (Single Link 3G-SDI)
Output Video Bandwidth:225 MHz (Single Link HDMI 1.3)
SDI Compliant:SMPTE 259M, up to 360 Mb/s
HD-SDI CompliantSMPTE 292M, up to 1.485 Gbps
3G-SDI Compliant.....SMPTE 424M/425M, up to 3.0 Gbps
Power Supply:5V DC locking type, 2.5W each
Dimensions:8.2" W x 1.1"H x 7.5"D
Rack Size:1U (half-width)
Operating Temp.:0-40 degrees C
Shipping Weight 4 lbs
HDMI 1.3 Compliant

WARRANTY

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, please visit Gefen's Warranty web page at <http://www.gefen.com/kvm/aboutus/warranty.jsp>

PRODUCT REGISTRATION

**Please register your product online by visiting Gefen's web site at
<http://www.gefen.com/kvm/Registry/Registration.jsp>**



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This product uses UL listed power supplies.

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