

HDLINK PRO

Connections

SDI Video Input	2 x BNC inputs switch between SD-SDI, HD-SDI 4:2:2, HD-SDI 4:4:4, 2K via SDI and dual-link HD-SDI 4:4:4.
SDI Video Output	1 x BNC active loop through output switches between SD, HD 4:2:2, HD 4:4:4 and 2K.
HDMI Video Output	Via DVI-D to HDMI adaptor. Supports HDMI displays, such as a TV or video projector, up to 1920 x 1080 resolution.
Analog Audio Output	6 x unbalanced 24 bit analog outputs on RCA connectors - 10dB, de-embedded from SDI input.
HDMI Audio Output	Via DVI-D to HDMI adaptor.
DVI-D Video Output	Supports SD, HD and 2K using Dual Link DVI-D displays up to 30 inches 2560 x 1600 in size.
HDMI Connection	Via included DVI-D male to HDMI Type A female adaptor.
DVI-D Audio Output	DVI-D supports video only. Use RCA analog audio outputs for audio monitoring.
DisplayPort Audio Output	None
Multi Rate SDI Support	270 Mb/s standard definition, 1.5 Gb/s high definition 4:2:2, 3 Gb/s 4:4:4 high definition and 2K film.
DisplayPort Video Output	None
Updates and Configuration	USB 2.0 High Speed (480Mb/s) interface.

Standards

SD Format Support via DisplayPort	None
SD Format Support via DVI-D	625/25 PAL and 525/29.97 NTSC.
SD Format Support via HDMI	625/25 PAL and 525/29.97 NTSC.
HD Format Support via DisplayPort	None
HD Format Support via HDMI	720p50, 720p59.94, 720p60, 1080p23.98, 1080p24, 1080i50, 1080i59.94 and 1080i60 , 1080p50, 1080p59.94 and 1080p60.
HD Format Support via DVI-D	720p50, 720p59.94, 720p60, 1080p23.98, 1080p24, 1080i50, 1080i59.94, 1080i60, 1080p50, 1080p59.94, 1080p60.
2K Format Support via DVI-D	2048 x 1556p23.98, 2048 x 1556p24 and 2048 x 1556p25.
2K Format Support via Display Port	None
SDI Compliance	SMPTE 259M, SMPTE 274M, SMPTE 292M, SMPTE 296M, SMPTE 425M-B, ITU-R BT.656, ITU-R BT.601 and SMPTE 297M for Optical Fiber SDI.
3D Modes	None
SDI Video Sampling	4:2:2 and 4:4:4.
SDI Audio Sampling	Television standard sample rate of 48 kHz and 24 bit.
SDI Color Precision	4:2:2 10 bit and 4:4:4 10 bit.
SDI Color Space	4:2:2 YUV, 4:4:4 YUV and 4:4:4 RGB.
HDMI Configuration	HDMI automatically configures to connected display.
HDMI Resolution	Pixel for pixel HD resolution input to connected device.
DVI-D Resolution	Pixel-for-pixel display on LCD displays.
DVI-D Configuration	Automatic adjustment using VESA E-EDID1.3.
DisplayPort Configuration	None
DisplayPort Resolution	None

Extras

Software Control	HDLink Utility included free for Windows 7 and Mac OS X.
Internal Software Upgrade	Automatically when new HDLink Utility is installed.
Gamma Correction	Independently adjustable 3D lookup tables per color component. Interactive real time adjustment of lookup tables.
Real Time Processing	Adaptive pull-down processor guarantees smooth motion display.
Video Scaling via DVI-D	Pixel for pixel display. Scale up SD to fill display in 2D modes. Scale up HD to fill display in 2D modes.
Physical Installation	Small brick style compact design.
Power Supply	12 Volt universal power supply included. IEC power cable required.
Product Warranty	3 Year Limited Manufacturer's Warranty.

Display Requirements

Interface	DVI-D connection to LCD computer monitor or HDMI Type A connection to HDMI display.
Resolution via DVI-D	1920 x 1200 or 1920 x 1080 required for HD1080 video SDI formats. 1280 x 800 recommended for HD720 video SDI formats. 2560 x 1600 required for 2K feature film formats. DVI-D displays generally do not support 720p50 or 1080p50 but most recent HDMI displays do.
Resolution via DisplayPort	None The HDMI input of a display must accept either: <ul style="list-style-type: none">• 1920 x 1080 for HD1080 video SDI formats or• 1280 x 720 for HD720 video SDI formats
Capturing from copy-protected HDMI sources	A Full HD display should be considered if pixel for pixel video is desired as other HDMI displays present at a lower resolution.
Refresh Frame Rate for DVI	Nominal 60Hz, however 48 to 75 Hz recommended.

The world's most advanced full resolution 2D/3D HDTV and 2K monitoring for DVI, DisplayPort and HDMI monitors. Includes the quality of 4:4:4 SDI video, lookup tables via USB and analog audio outputs. HDLink will solve all your monitoring needs.

Full Resolution HD Monitoring

HDLink connects SDI video directly to any supported DVI-D and DisplayPort based LCD computer monitor for incredible true HDTV resolution video monitoring. HDLink includes 3 Gb/s SDI for high resolution 2K film monitoring when connected to a large 30 inch DVI or DisplayPort display. With every individual pixel in the HD or 2K SDI connection digitally mapped directly to the pixels of the LCD display, you get a perfect digital-to-screen pixel for pixel HDTV or 2K display. Connect any HDMI television or video projector to HDLink for cinema style monitoring! Even large 23 inch CRT based monitors can't display the full resolution of the HD-SDI signal, but with HDLink you see every pixel in the HD signal, so you'll always see a perfect image.

Supports both DVI and HDMI

HDLink supports all DVI-D and DisplayPort based digital computer displays and also includes HDMI video support. HDMI supports video at 1080i/50, 1080i/59.94 and 720p/59.94 on any HDMI device. DVI-D and DisplayPort supports displays at 1920 x 1200 (16:10) resolution for all 1080 HDTV formats. When working in 720 HDTV formats you can even use lower cost 1280 x 800 resolution display for pixel for pixel 720p viewing. When working in NTSC or PAL, HDLink can scale to fill the screen making viewing easier.

Affordable 3D SDI Monitoring

Now HDLink Pro supports 3D monitoring for the latest 3D production workflows! HDLink Pro 3D lets you display both dual stream as well as interleaved 3D inputs and then display them on any compatible 3D DVI display or HDMI television. When used with a DisplayPort to HDMI adapter, HDLink Pro 3D DisplayPort also supports HDMI 3D frame packing for compatibility with the latest full resolution 3D television.

Highest Quality 3 Gb/s SDI in 4:4:4

HDLink introduced the world's first full HDTV resolution 4:4:4 monitoring solution that supports both standard definition SDI, HD-SDI and HD-SDI 4:4:4 for full resolution color monitoring. Conventional SD and HD video is 4:2:2 based, which limits color detail while 4:4:4 HD video preserves the full color detail which is important for critical keying and feature film work. HDLink Pro is the first solution for the new high speed 3 Gb/s SDI standard for 4:4:4 RGB and 2K film monitoring. 3 Gb/s SDI runs twice the data rate of normal HD-SDI video, allowing 4:4:4 RGB video to be connected using a single SDI connection. 3 Gb/s SDI also allows full resolution 2K feature film quality 2048 x 1556 video to be connected via SDI.

Supports LCD Displays

HDLink supports DVI-D and DisplayPort based digital computer displays. For 1080 and 720 HDTV formats, a 1920 x 1200 (16:10) resolution display is recommended. However, if you're working in 720 HDTV formats only, then a lower cost 1280 x 800 resolution display is recommended. When working in NTSC or PAL, HDLink can scale up the displayed image to fill the display making viewing easier. Because most computer displays are limited to approximately a 60 Hz refresh rate, HDLink will automatically apply pull-down to allow video frame rates to be displayed.

Ideal Edit Suite Monitoring

Need the ideal HD monitoring solution for edit suites, design workstations or broadcast graphics? HDLink is perfect because it's digital direct to the LCD screen for full resolution HD 2D/3D display, that's much better than a CRT! Unlike SDI input cards on CRT monitors, HDLink will let you change between standard definition and HD instantly. Now you change your edit suite over without delay, so your clients aren't kept waiting!

Big Screen Cinema Style Monitoring

Clients love good quality monitoring and HDLink is ideal for client monitoring because of its HDMI support. HDLink's HDMI support allows you to digitally connect to a wide range of consumer televisions, large screen plasmas and video projectors for incredible quality monitoring. LCD televisions are brighter and larger than computer monitors, so your clients get a full cinema experience using HDLink. You can even use the custom lookup tables to calibrate for accurate color. HD video with an all digital connection to a large screen TV, looks incredible in 2D or 3D! Because HDMI video connections are limited to shorter lengths, HDLink is ideal when you need to connect to video projectors with digital quality. Run SDI connections up to your ceiling mounted video projector, and use HDLink to convert to HDMI locally.

2K Feature Film Monitoring

HDLink supports the new 3 Gb/s SDI so you can connect to any device that supports 2K via SDI playback such as Blackmagic Design's Multibridge Eclipse. 2K via SDI brings the workflow advantages of SDI video to feature film production. Imagine being able to pipe around 2K film resolution video throughout your facility and using the same connections that normally handle SD and HD video. HDLink also includes 3D lookup tables so you can load your custom developed tables for matching film stocks. HDLink also allows 3D lookup tables to be output on the loop through SDI output, so you can use it as in line SDI processing. 6 channel audio outputs are included so monitoring in 5.1 surround sound is easy and low cost.

Video Assist on Location

A large 24" LCD panel makes the perfect viewing environment on-set. If you're doing the highest budget feature film, or a quick corporate video shoot your crew will love viewing on a large monitor. Because you get full resolution you can check framing as well as camera focus. If you're using Panasonic™ or Grass Valley Viper™ cameras, then HDLink includes lookup tables for viewing direct output from the camera with gamma encoding removed. HDLink's advanced 3D lookup tables allow simulation of film stocks so you can see what your images will look like when projected on the big screen!.

A Perfect Match for the Telecine Suite

Telecine suites are one of the most demanding monitoring environments, and have been the exclusive domain of large grade-1 CRT monitors. While most post production telecine colorists would argue that for critical monitoring only a CRT can give you a good indication of field movement. When combined with HDLink and a good LCD monitor, telecine monitoring is greatly enhanced because LCD monitors don't suffer from afterglow, noise, analog losses or interference. That means telecine chain alignment is much more accurate. Because HDLink displays full resolution HD video, telecine colorists can set focus to unprecedented accuracy, and with the Blue Only feature, film grain and telecine noise can be easily seen. Because HDLink is fully digital from SDI onto the DVI LCD screen, no noise can be introduced onto the LCD display environment, making a perfect noise free monitoring solution.

Includes 3D Lookup Tables

For matching LCD display colorimetry and simulating various types of film stocks, HDLink Pro model features more advanced 3D lookup tables. Advanced 3D lookup tables increase color control because a blend of red, green and blue video can be output to each primary color on the connected display. Only advanced 3D lookup tables can give full color control for accurate simulation of almost any feature film stock. Lookup tables are fully adjustable via a high speed USB 2.0 host computer connection using the included HDLink Utility software for Windows and Mac OS X. Custom lookup tables also allow film industry log video to be converted to linear for monitoring when used for feature film work. Preset gamma tables for Panasonic™ and Grass Valley Thomson Viper cine-gamma are included.

Analog Audio Monitoring Output

Audio outputs are de embedded from the SDI input and then converted to analog at an incredible 24 bit. HDLink supports 6 channels out allowing easy monitoring of 5.1 surround sound audio. Audio is output on RCA connectors so you can easily connect to standard HiFi systems. If the connected display requires pull-down processing then HDLink will apply a variable audio delay ensuring perfect audio to video sync. To protect speakers and eliminate loud pops and other audio glitches, HDLink gently mutes the audio if video formats change or when SDI signals are connected and disconnected.

Cross Platform Configuration

If you're a broadcast engineer running Windows™ or a creative designer and editor running Mac OS X™, you can still run your favorite computing platform. HDLink Utility runs on both Windows™ and Mac OS X™ connecting via USB 2.0, so you don't have the complexity of little switches for setup. HDLink Utility automatically finds your USB connected HDLink, and features a standard application interface with settings via simple pop-up menus.

Upload Lookup Tables

HDLink Utility allows you to upload gamma lookup tables, which can then be loaded into HDLink via USB. Settings and look up tables stay saved in non volatile memory, so every time you power cycle your HDLink the settings stay the same. Factory defaults can easily be restored and gamma tables copied and saved as files. Although HDLink comes color calibrated, lift, gain and gamma adjustments are provided to allow color matching of LCD panels. Lookup tables for Panasonic™ cine-gamma are also provided which are perfect for on-location film shoots.

Special Settings Make Life Easier

Just because you're using a low cost LCD computer monitor doesn't exclude you from some of the great CRT features you've had in the past. HDLink Utility now features an exciting Blue Only settings that lets you check chroma phase and see noise in the blue channel. Simply select on and off as you need it. For users that need a 'CRT look', HDLink Utility now includes a customizable field emulator. Because LCD monitors use progressive display, a field emulator processes video to emulate the effect of field based scanning on CRT monitors. That helps display field movement that can normally only be seen on CRT monitors.

One Minute Firmware Updates

HDLink Utility lets you update firmware in a snap. Whenever you download new software releases from the Blackmagic Design website, HDLink automatically checks your firmware and asks if you would like to update to the newer version. Blackmagic Design's engineering team are constantly working on new updates and features, so you won't want to miss the latest updates. Exciting updates such as HDMI support have allowed older HDLink's to gain exciting new features, all at no cost!