

## SDI to HDMI® Converter

- Support for SDI video inputs up to 3Gbit/s (1080P)
- Support for single link 3D formats
- Automatic input standard and format detection
- Fiber input and output options
- HDMI video output with embedded audio
- Analog and AES audio outputs
- Selectable burn in windows
- 16 channel on screen audio meters
- H/V delay and safe area markers
- yelloGUI compatible: Gain access to additional features

The CDH 1813 is a versatile, compact SDI to HDMI converter designed to combat a host of monitoring and display applications in broadcast, post production and pro A/V markets. Convert any SDI video signal, including 3D formats into an HDMI signal for monitoring and display. Fiber connectivity options add SDI fiber transmission and/or SDI fiber reception using the integrated fiber SFP socket.

Two channels of audio can be de-embedded providing digital AES and analog audio outputs. Analog audio outputs have selectable full scale range presets. The two selected audio channels can also be embedded into the HDMI output. In addition 8 channels selected from the input signal (channels 1-8 or 9-16) can be embedded into the HDMI output. Various burn in features make the CDH 1813 a true monitoring tool. Timecode burn in, 16 channel audio metering, safe area markers and Metadata display are just a few of the on-screen monitoring features. The yelloGUI software provides support for a host of additional settings and features which are accessed using a PC and the USB port on the module.

Shown with Fiber SFP Option Installed



## Technical Specifications

<b>SDI Input</b>	1 x SDI video on 75 Ohm BNC connector  SMPTE ST 259M (SDTV) SMPTE ST 292-1 (HDTV 1,5 Gb/s) SMPTE 424 M (3Gb/s) supporting ST 425-1 Level A and ST 425-2 For a detailed list of supported formats please refer to the article in our knowledge base ( <a href="http://www.lynx-technik.com">www.lynx-technik.com</a> > support > tech.support)  Support for 'single link' 3D modes: "side by side", "top-bottom" and "dual stream (SMPTE ST-423-2)"  Return Loss: > 15dB to 1.5GHz and > 10dB up to 3GHz  Automatic cable EQ (Belden 1694A cable) 340m @ 270Mbit/s, 150m @ 1.5Gbit/s, 120m @ 3Gbit/s
<b>Fiber Input</b>	1 x fiber optic SDI input. SMPTE 297M - 2006 (Optional- see fiber options table)
<b>SDI Output</b>	1 x reclocked SDI video output on 75 Ohm BNC connector
<b>Fiber Output</b>	1 x reclocked fiber optic SDI output. SMPTE 297M - 2006 (Optional- see fiber options table)
<b>HDMI Output</b>	10 bit HDMI 1.4a support including 3D, deep color and embedded audio Type A connector. 3D modes supported: "side by side" + "top and bottom" + "frame packing"  24 bit (3 X 8bit) and 30bit (3 x 10bit) deep color (R,G,B / Y,Cr,Cb / X,Y,Z)  2 or 8 channel audio embedding (selectable)
<b>AES Output</b>	AES3id on 75 Ohm BNC, 2 channels (selectable)
<b>Audio Output</b>	Left and right analog audio using 1/4 inch jack sockets (phono sockets)  Balanced mode with 24,22,20,18,15,12 dBu full scale (selectable)  Unbalanced mode with (line level) at -10 dBv  1/4 inch Jack plug (phono) to RCA connection adapters supplied
<b>USB</b>	Standard USB port for yelloGUI interface and firmware updates (Mini Type "B" plug)
<b>Power</b>	+12VDC @ 3.7W nominal - ( supports 10 - 14VDC input range )
<b>Physical</b>	Size: 138mm x 90mm x 22mm (5.13" x 3.54" x 0.86") including connectors Weight: 230g (8.11oz)
<b>Ambient</b>	5 - 40°C (41 - 104°F) 90% Humidity (non condensing)
<b>Model #</b>	CDH 1813 - ( EAN# 4250479359833 )
<b>Includes</b>	Module, AC power supply, RCA adapters, HDMI + USB cable, transport case

Specifications subject to change

### SDI Fiber Transmitter Options

Model	Description	Power
<b>OH-TX-1-LC / ST / SC</b>	SFP Fiber TX - Singlemode - LC, ST or SC conn. - 10km	-5dBm (1310nm)
<b>OH-TX-0-850-MM</b>	SFP Fiber TX- Multimode - LC conn. - 300m	-5dBm (850nm)

### SDI Fiber Receiver Options

Model	Description	Sensitivity
<b>OH-RX-1-LC / ST / SC</b>	SFP Fiber RX - Singlemode - LC, ST or SC connector	-16dBm
<b>OH-RX-0-MM</b>	SFP Fiber RX- Multimode - LC connector	-15dBm

### SDI Fiber Transceiver Options

Model	Description	Power	Sense
<b>OH-TR-1</b>	SFP Fiber RX/TX - Singlemode, LC Connector - 10km	-5dBm	-18dBm
<b>OH-TR-0-850</b>	SFP Fiber RX/TX - Multimode, LC Connector - 300m	-5dBm	-15dBm

### SDI CWDM Fiber Transmitter Options

Model	Description	Power
<b>OH-TX-4-XXXX</b>	CWDM SFP Fiber TX - Singlemode LC Conn. - 40km XXXX=Wavelength. 18 according to ITU T G692.2 1270nm through 1610nm	-1dBm

### SDI CWDM Fiber Transceiver Options

Model	Description	Power	Sense
<b>OH-TR-4-XXXX</b>	CWDM SFP Fiber RX/TX - Singlemode LC Conn. - 40km XXXX=Wavelength. 18 according to ITU T G692.2 1270nm through 1610nm	-1dBm	-20dBm

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## CDH 1813

yelloGUI compatible

## Monitoring Features

The CHD 1813 is ideal for regular transparent image monitoring, providing a clean 1:1 HDMI conversion of the SDI input signal. There are also a number of other HDMI monitoring options available. These monitoring modes are activated using the module dip switch and can be used individually or as combined monitoring modes.

### Clean Feed

- Direct conversion of input SDI Stream
- The CHD 1813 does not scale the image, therefore the HDMI output format is the same as the native SDI input resolution and frame rate.



### Burn in Windows

- Display up to three timecode values (if present) ( VITC , LTC, DVITC )
- SDI input format, bit depth and color scheme
- AFD present and format code
- 16 audio level meters
- Closed Caption, WSS and VI metadata presence



### Safe Area Markers

- SMPTE Safe Action (default)  
*(default can be changed using yelloGUI)*
- Center cross marker
- Fully programmable with yelloGUI



### H / V Delay

- View horizontal and vertical blanking



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**CDH 1813**  
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## yelloGUI™

The CHD 1813 features full yelloGUI support that provides access to additional features and settings not possible from the module's local controls. Additional features are accessed using our free **yelloGUI** application. Additional settings include:

Parameter	Settings				
<b>Safe Area Markers</b>	OFF				
	SMPTE Safe Action (90/90)				
	SMPTE Safe Title (80/80)				
	EBU Action (3.5/3.5)				
	EBU Graphics (5/10)				
<b>Aspect Ratio Markers</b>	OFF				
	4:3				
	16:9				
<b>Curtain Transparency</b>	100%				
	Adjustable 30%-90%				
<b>Center Cross</b>	ON				
	OFF				
<b>Marker Color</b>	White				
	Red, Green, Blue, Yellow, Cyan, Magenta, Black				
<b>Safe Area from Aspect</b>	ON				
	OFF				

The on screen markers can be custom configured to suit any application. This includes various "standard" safe area markers, aspect ratio markers with adjustable curtain transparency. The color of the markers may also be changed.

Parameter	Settings	Parameter	Settings	Parameter	Settings
<b>SDI input RGB Range</b>	SMPTE Limited	<b>HDMI Color Range</b>	SMPTE Limited	<b>Audio Channels</b>	1:1
	Full Range		Full Range		Convert*
<b>HDMI Input Bit Depth</b>	AUTO	<b>HDMI Color Space</b>	AUTO	*DEFAULT: Audio channels 1 through 8 are mapped 1:1 from SDI to HDMI. When set to "Convert" channels 3 and 4 are swapped resulting in channel allocations per SMPTE 320M (3=center / 4=LFE) and CEA-861 (3=LFE / 4=FrontCenter)	
	8 bit		RGB		
	10 bit		Y,Cr,Cb 4:2:2		
	12 bit		Y,Cr,Cb 4:4:4		

Parameter	Settings	Parameter	Settings	Parameter	Settings
<b>3D HDMI Output Format</b>	AUTO	<b>3D SDI Input Format</b>	AUTO	<b>Swap SDI Streams</b>	Regular
	Frame Packing (FP)		Side by Side (SS)		Inverted
	Side by Side (SS)		Top and Bottom (TB)	When a 3G LevelB input signal is processed as 3D content then the default setting is: Left Eye from Stream A, and Right Eye from Stream B. This can be inverted with this switch. For 2D content, default is stream A, and stream B is selected with this switch.	
	Top and Bottom (TB)		Dual Stream (3G/LevelB)		
			2D (no 3D)		
<b>3D Flip Left Eye</b>	NO FLIP	<b>3D Flip Right Eye</b>	NO FLIP	<b>Horizontal Flip</b>	NO FLIP
	Horizontal		Horizontal		FLIP
	Vertical		Vertical	This mode flips the input signal horizontally to show a mirror image on the HDMI output. Useful for Virtual Set (Green Screen) on set monitoring.	
	Both		Both		

HDMI configuration settings are set automatically by the internal EDID communication between the two connected devices. These settings can be changed manually for specific applications.

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### Fiber Application Using CDH 1813 SDI to HDMI Converter

Sample application using two CDH 1813 modules for SDI fiber optic transmission up to 10km (6.2 miles) @3Gbit/s with integrated HDMI signal confidence monitoring at each end.

