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CDH 1411

yelloGUI compatible

12G SDI to HDMI® Converter

- Support for SDI video inputs from 1.5G up to 12G (2160p)
- Supports HDR and WCG indication at HDMI output
- Automated detection of input signal color range via VPID information
- 3G SDI Level A and Level B support
- Automatic input standard and format detection
- Fiber input and output options
- HDMI video output with embedded audio
- Analog and AES audio outputs
- Selectable timecode burn-in and Metadata burn-in
- CEA 708 Closed caption burn-in
- 16 channel on screen audio level meter
- H/V delay & H flip and safe area markers
- yelloGUI compatible: Gain access to additional features



Shown with Fiber SFP Option Installed

The CDH 1411 is a versatile, compact 12G SDI to HDMI converter designed to combat a host of monitoring and display applications in broadcast, post production and pro AV markets. Convert any SDI video signal 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. Alternatively 8 channels selected from the input signal (8 audio groups in 64 channels) can be embedded into the HDMI output. Various burn in features make the CDH 1411 a true monitoring tool. Individually selectable timecode burn-in, Closed Caption 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.

CWDM Wavelength Options. ITU-T G.694.2 (select one)

Model	Description	Power	
SDI Fiber Transmitter Options			
OH-TX-12G-LC/ST	12G SFP Fiber TX - Singlemode - LC or ST conn. - 10km	-5.. +0.5dBm	
SDI CWDM Fiber Transmitter Options			
OH-TX-12G-XXXX-LC XXXX=Wavelength	CWDM SFP Fiber TX - Singlemode LC Conn. - 10km* 18 according to ITU T G692.2 [1270nm - 1610nm]	-2.. +3dBm	
Model	Description	Sensitivity	
SDI Fiber Receiver Options			
OH-RX-12G-LC/ST	12G SFP Fiber RX - Singlemode - LC or ST connector	-16...-10dBm	
Model	Description	Power	Sense
SDI Fiber Transceiver Options			
OH-TR-12G-LC	SFP Fiber RX/TX - Singlemode, LC Connector - 10km	-5...+0.5 dBm	-10dBm
SDI CWDM Fiber Transceiver Options			
OH-TR-12G-XXXX-LC XXXX=Wavelength	CWDM SFP Fiber RX/TX - Singlemode LC Conn. - 10km* 18 according to ITU T G692.2 [1270nm - 1610nm]	-2.. +3dBm	-14 ... -10dBm

Other SFP sticks are available. Ask our sales team for the right solution for you.

Technical Specifications

SDI Video	1 x SDI input on 75 Ohm BNC connectors 1 x SDI output on 75 Ohm BNC connectors		
	SMPTE 2082, SMPTE ST 2081, SMPTE 424M, SMPTE 292 3G Level A & B Dual-Link according to SMPTE ST 425-1		
	Multi-standard operation from 1.5Gbit/s to 12Gbit/s		
	Multirate reclocking: 1.5Gbit/s - 3Gbit/s - 6Gbit/s - 12Gbit/s		
	Automatic cable EQ	1.5Gbit/s	3Gbit/s / 12Gbit/s
		190m	150m / 85m
		Belden 1694A	Belden 4794R
Fiber Optic	1 x fiber optic input, 1 x fiber optic output Duplex (singlemode) using LC/PC connection		
	SMPTE 297M - 2006		
	Transmitter	Wavelength	See Optional SFP Table
		Optical power	See Optional SFP Table
	Receiver	Sensitivity	See Optional SFP Table
	Max. distance*	See Optional SFP Table	
HDMI Output	10bit HDMI 2.0b Type A connector - deep color and embedded audio		
	24bit (3x8bit) and 30bit (3x10bit) deep color (R,G,B / Y,Cr,Cb / X,Y,Z)		
	2 or 8 channel audio embedding (selectable)		
AES Output	AES3-id on 75 Ohm BNC, 2 channels (selectable)		
Audio Output	Left and right analog audio using 3.5mm jack sockets		
	Balanced mode with 24, 22, 20, 18, 15, 12dBu, Line Level Pro (4dBu) and Line User		
	Unbalanced mode with Consumer Line Level (-10 dBV)		
Power	+12V DC @ 8.7W nominal - (supports 10 - 24V DC input range)		
Physical	Size (incl. connectors)	140m x 90mm x 22mm (5.51" x 3.54" x 0.86")	
	Weight:	230g (8.11oz)	
Ambient	5 - 40°C (41 - 104°F) 90% Humidity (non condensing)		
Model #	CDH 1411	4250479327436	
Includes	Module, AC power supply, HDMI + mini USB cable		

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Monitoring Features

The CDH 1411 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.

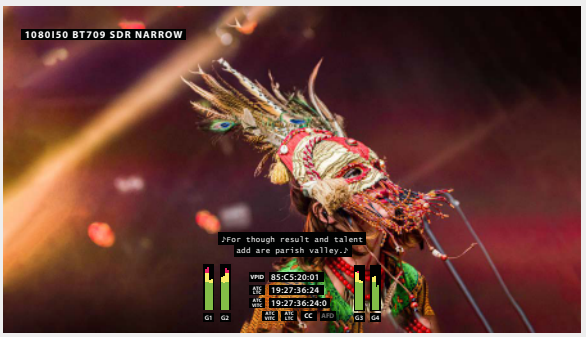
Clean Feed

- Direct conversion of input SDI Stream
- HDMI output is the same as the SDI input resolution and frame rate (CDH 1411 does not scale)
- Colorspace, Colometry, Color Range, and Bit-Depth for HDMI output can be set via yelloGUI
- Manual EOTF settings available.



Burn in Windows

- Select and display two timecode values (VITC, LTC)
- SDI input format with frame rate
- Up to 16 audio level meters
- VITC, LTC, Closed Caption and AFD metadata presence indicator
- Display Closed Captions



Safe Area Markers

- Multiple different Safe Area markers available (default: SMPTE Safe Action 90/90)
- Center cross marker
- Aspect Ratio Marker and safe from Aspect Ratio Marker
- Curtain Transparency Settings (30-100%)
- Eight Marker Colors
- Settings available via yelloGUI



H/V Delay & H Flip

- View horizontal and vertical blanking
- Flip on horizontal axis



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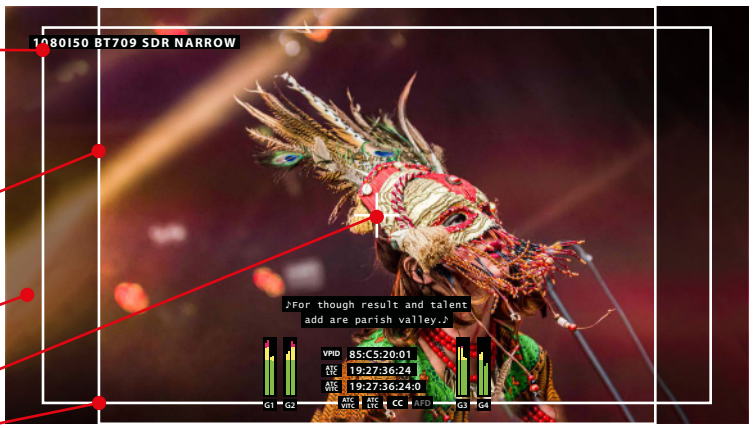
yelloGUI

The CHD 1411 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 Options and Default Settings

= Default Settings

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



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.

Video Parameter	Settings
SDI Color Range	AUTO
	SMPTE Limited
	Full Range
HDMI Color Range	Default
	SMPTE Limited
	Full Range
HDMI Colorimetry	Auto
	BT.709
	BT.2020
HDMI Colorspace	Auto
	RGB
	YCbCr 4:2:2
	YCbCr 4:4:4

Video Parameter	Settings
HDMI Bit Depth	Auto
	8 bit
	10 bit
	12 bit
HDMI EOTF	Auto
	gamma SDR
	gamma HDR
	ST.2084 PQ
	HLG
Flip Output Signal	No Flip
	H (Horizontal)

Audio Parameter	Settings
3G Level B Audio Source	Stream A
	Stream B
Audio Channels	1:1
	Convert*

*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)

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 1411 SDI to HDMI Converter

Sample application using two CDH 1411 modules for SDI fiber optic transmission up to 10km (6.2 miles) @12Gbit/s with integrated HDMI signal confidence monitoring at each end.

