

Module LEDs

The module has several LEDs included to indicate status. Function is described below:

SDI Present LED (electrical or fiber input)

- = Valid SDI signal connected
- = (out) non valid SDI signal or signal missing

Audio Status LED

- = Both of the audio channels are present
- = Only one of the audio channels is present
- = (out) no audio present

Power / Prog Setting LED

- = Power OK and no internal programmed settings are present
- = Power OK and some programmed settings are active*
- = One or more of module switch settings have been overwritten with the yelloGUI application. (Operation of any local switch will clear internal settings and restore all local switch settings)
- = (out) Power not present

* Some additional internal settings have been made using the YelloGUI and the LED indicates this by turning yellow. The module can be reset to factory defaults by using the reset switch (recessed under a hole on the side of the module). When reset the LED will change back to Green.

USB Port / Firmware Updates / yelloGUI

The USB interface on the module is used for firmware updates and for control of the module using the yelloGUI software application. For more information and to download the yelloGUI application please goto: <http://yellogui.lynx-technik.com>

Firmware updates are always provided free of charge and can be downloaded from our website (navigate to the module on our website and follow the firmware update links). A PC and a standard USB cable is required for firmware updates and to use the yelloGUI application.

Fiber I/O Options

The module can accommodate several fiber options which are detailed below. These are SFP sub modules and plug into the side of the module. We can also supply CWDM versions in 18 different wavelengths if required (contact LYNXTechnik for more details).

(sm)=singlemode (mm)=multimode

Transceiver (send and receive)

Wavelength	TX Power	RX Sensitivity	Max Distance	Option #
1310nm (sm)	-5dBm	-19dBm	10km (6.2miles)	OH-TR-1
850nm (mm)	-5dBm	-15dBm	300m (984 feet)	OH-TR-0-850-MM

Transmitter only

Wavelength	TX Power	Max Distance	Option #
1310nm (sm)*	-5dBm	10km (6.2miles)	OH-TX-1 LC / OH-TX-1 ST / OH-TX-1 SC
1550nm (sm)	-1dBm	40km (24.8 miles)	OH-TX-3-1550
850nm (mm)	-5dBm	300m (984 feet)	OH-TX-0-850 MM

Receiver only

Wavelength	RX Sensitivity	Option #
1270-1630nm (sm)*	-19dBm	OH-RX-1-Y LC / OH-RX-1-Y ST / OH-RX-1-Y SC
750-880nm (mm)	-15dBm	OH-RX-0-Y MM

* These fiber options have fiber connection choices

LC=LC fiber connector

ST= ST fiber connector

SC=SC fiber connector

All other fiber options are LC connections



SFP sub module

Power Lead Strain Relief

The module has a small hole in the case located above the power connection. To prevent the power lead being accidentally pulled out, use the supplied tie-wrap and secure the lead as shown opposite.

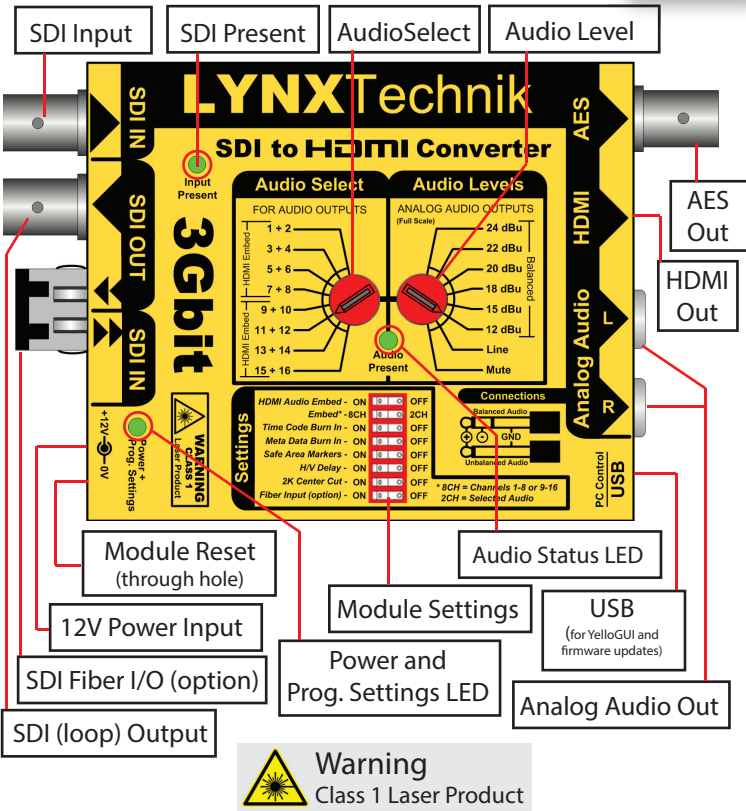


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Quick Reference

CDH 1813

3G SDI to HDMI Converter



Connections

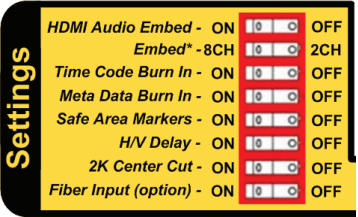
All connections are clearly indicated on the module. Analog audio can be balanced or unbalanced using the phono to RCA adapters supplied.

Operation

The CDH 1813 module is a powerful SDI to HDMI conversion device with settings provided for almost any HDMI monitoring application, including 3D. Frequently used settings can be made using the integrated dip switch and rotary switches. Access to additional settings is provided via the USB port and the new yelloGUI application, which can be downloaded from our website.

Switch Settings

The integrated dip switch provides access to the basic functions of the module and the settings are self explanatory. The 8CH / 2CH audio embedding setting ties into the audio select switch. If 2CH is selected then only the selected audio will be embedded into the HDMI out. If 8CH is selected then the 8 channel “zone” the rotary switch is set to selects the 8 channels of audio to be embedded into the HDMI out.



On Screen Burn In

Three dip switches control the burn in information on the HDMI output. Burn in features are:

- Metadata presence indication for CC, (Closed Caption) AFD, WSS and VI
- 16 channel audio level meters
- SDI Timecode burn in (if present)
- Safe area and aspect ratio markers



Additional Settings

The modules default settings and local switches are suitable for most applications. Access to advanced user settings can be made using the yelloGUI application. See table opposite for the available settings.

yelloGUI Parameter Settings				Green = Default Settings
Parameter	Settings	Parameter	Settings	
Safe Area Markers	OFF	SDI input RGB Range	SMPTE Limited	
	SMPTE Safe Action (90/90)		Full Range	
	SMPTE Safe Title (80/80)	HDMI Color Range	SMPTE Limited	
Aspect Ratio Markers	EBU Action (3.5/3.5)		Full Range	
	EBU Graphics (5/10)	HDMI Input Bit Depth	AUTO	
	OFF		8 bit	
	4:3		10 bit	
Curtain Transparency	16:9		12 bit	
	100%	HDMI Color Space	AUTO	
	Adjustable 30%-90%		RGB	
Center Cross Marker	ON		Y,Cr,Cb 4:2:2	
	OFF		Y,Cr,Cb 4:4:4	
		3D HDMI O/P Format	AUTO	
Marker Color	White		Frame Packing (FP)	
	R,G,B,Y,C,M and Black		Side by Side (SS)	
Safe Area from Aspect	ON		Top and Bottom (TB)	
	OFF			
3D Flip Left Eye	NO FLIP	3D Flip Right Eye	NO FLIP	
	Horizontal		Horizontal	
	Vertical		Vertical	
	Both		Both	
3D SDI Input Format	AUTO	Audio Channels	1:1	
	Side by Side (SS)		Convert*	
	Top and Bottom (TB)	*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)		
	Dual Stream (3G/LevelB)			
Swap SDI Streams	2D (no 3D)			
	Regular	Horizontal Flip	NO FLIP	
	Inverted		FLIP	
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.		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.		

The yelloGUI application can be downloaded from our website

<http://yellogui.lynx-technik.com>



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Technical Specifications

SDI Input	1 x SDI video on 75 Ohm BNC connector, multi-standard from 270Mbit to 3Gbit
	Support for ‘single link’ 3D modes: “side by side”, “top-bottom” and “dual stream (3G level B)” (depends on input SDI format)
	Return Loss: > 15dB to 1.5GHz and > 10dB up to 3GHz
	Automatic cable EQ (Belden 1694A cable) 250m @ 270Mbit/s, 140m @ 1.5Gbit/s, 80m @ 3Gbit/s
Optical Input	1 x fiber optic SDI input (optional) SMPTE 297M - 2006
SDI Output	1 x SDI video loop ouput. 75 Ohm BNC connector
	SMPTE 424M, SMPTE 292M, SMPTE 259M
Optical Output	1 x fiber optic SDI output. (optional) SMPTE 297M - 2006
HDMI Output	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)
AES Output	AES3id on 75 Ohm BNC, 2 channels (selectable)
Audio Output	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
USB	Standard USB port for yelloGUI interface + firmware updates (Mini Type “B” plug)
Power	+12VDC power supply (included)

We are constantly adding additional yellobrik modules. Please visit our website for the latest product updates.

www.lynx-technik.com