

yelloGUI Parameters

Parameter	Settings	Parameter	Settings
Safe Area Markers	SMPTE Safe Action (90/90)	SDI Color Range	AUTO
	SMPTE Safe Title (80/80)		SMPTE Limited
	EBU Action (3.5/3.5)		Full Range
	EBU Graphics (5/10)	HDMI Color Range	AUTO
Aspect Ratio Markers	OFF		SMPTE Limited
	4:3		Full Range
	16:9	HDMI Colometry	AUTO
Curtain Transparency	100%		BT.709
	Adjustable 30%-90%		BT.2020
Center Cross Marker	ON	HDMI Bit Depth	AUTO
	OFF		8 bit
Marker Color	White		10 bit
	R,G,B,Y,C,M and Black		12 bit
Safe Area from Aspect	ON	HDMI Color Space	AUTO
	OFF		RGB 4:4:4
HDMI EOTF	AUTO		YCbCr 4:2:0, 4:2:2, 4:4:4
	gamma SDR	Flip Output Signal	NO FLIP
	gamma HDR		H (Horizontal)
	ST.2084 PQ	Audio Channels	1:1
3G Level B Audio Source	Stream A	Convert*	
	Stream B		

*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)



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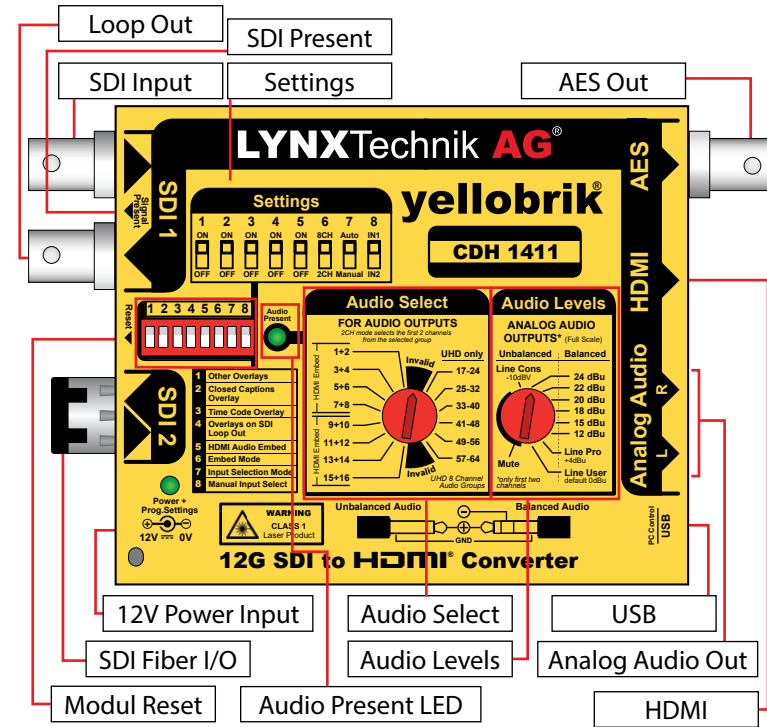
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Quick Reference

Technical Specifications

Supported Formats	4K	4096x2160p	23.98, 24, 25, 29.97, 30, 47.95, 48, 50, 59.94, 60
	UHD	3840x2160p	23.98, 24, 25, 29.97, 30, 50, 59.94, 60
	2K	1920x1080p	23.98, 24, 25, 29.97, 30, 47.95, 48, 50, 59.94, 60
	HD	1920x1080p	23.98, 24, 25, 29.97, 30, 50, 59.94, 60
	HD	1920x1080PsF	23.98, 24, 25, 29.97, 30
Supported Standards	HD	1920x1080i	50, 59.94, 60
	HD	1280x720p	23.98, 24, 25, 29.97, 30, 50, 59.94, 60
	SMPTE 292M, SMPTE 424M, SMPTE 2081-1, SMPTE 2082-1		
	Color Precision		
Color Precision	YCbCr	4:2:0	8, 10-bit (HDMI only)
	YCbCr	4:2:2	10-bit
	YCbCr/RGB	4:4:4	10, 12-bit (SDI)
	YCbCr/RGB	4:4:4	8-bit (HDMI)
SDI I/O	1x 12G-SDI input on 75 Ohm BNC connectors		
	1x 12G-SDI output on 75 Ohm BNC connectors		
Fiber I/O	3G-SDI Level A & B-DL & B-D5 according to SMPTE ST 425-1		
	Multirate reclocking: 1.5Gbit/s - 3Gbit/s - 6Gbit/s - 12Gbit/s		
	Automatic Cable EQ**	1.5Gbit/s	3Gbit/s
		190m	150m
HDMI Output	Belden 1694A		
	Belden 4794R		
AES Output	1x fiber input, 1x fiber output		
	Duplex (singlemode) using LC/PC connection		
Audio Output	SMPTE 297M - 2006		
	HDMI 2.0b Type A connector		
Power	2 or 8 channel audio embedding (selectable)		
	AES3-id on 75 Ohm BNC, 2 channels (selectable)		
Includes	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		
Settings	Unbalanced mode with Line Level Cons (-10 dBV)		
	+12V DC @ 8.5W nominal (excl. SFP) supports 10 - 24V DC input range		

CDH 1411 12G-SDI to HDMI Converter



LYNXTechnik | Broadcast Television Equipment

WARNING
CLASS 1M LASER PRODUCT



Laser Radiation
Do not look directly into emitter with optical instruments

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 1411 module is a powerful SDI to HDMI conversion device with settings provided for almost any HDMI monitoring application. Frequently used settings can be set using the integrated dip switch and rotary switches. Additional settings are accessible via Lynx Centraal and YelloGUI.

Switch Settings

The integrated dip switches provide access to common functions listed on the device.

In 8-Channel audio embedding mode, the rotary switch is used to select the first stereo pair of a group of 8 subsequent audio channels. In 2-Channel mode only the selected pair will be embedded on the HDMI output.

1	Other Overlays
2	Closed Captions Overlay
3	Time Code Overlay
4	Overlays on SDI Loop Out
5	HDMI Audio Embed
6	Embed Mode
7	Input Selection Mode
8	Manual Input Select

On Screen Burn In

Three dip switches control the burn in information on the HDMI output.

Burn in features are:

- Display CC on screen
- 16 channel audio level meters
- SDI Timecode burn in for LTC and VITC
- Safe area and aspect ratio markers
- Metadata presence indication for CC (Closed Caption) and AFD



Additional Settings

The modules default settings and local switches are suitable for most applications. Advanced settings are available through Lynx Centraal and YelloGUI.

Module LEDs

SDI Present LED (electrical or fiber input)

- Green Valid SDI signal connected
- Off (Off) Non valid SDI signal or signal missing

Audio Status LED

- Green Both audio channels are present
- Yellow Only one audio channel is present
- Off No audio

Power / Prog Setting LED

- Green Power OK and no internal programmed settings are present
- Yellow Power OK and some programmed settings are active*
Some manual dip switch settings are overridden by programmed settings. Changing a manual dip switch setting will clear programmed settings and restore all local dip switch settings.
- Red
- Off Power not present

* Some internal programmed settings have been set using yelloGUI or Lynx Centraal. The LED turns yellow when using programmed settings. The module can be reset to factory defaults by using the reset switch (hole on the side of the module).

USB Port / Firmware Updates / yelloGUI

The USB interface on the module is used for firmware updates and for control of the module using yelloGUI or LynxCentraal.

Download LynxCentraal and yelloGUI from our website:
www.lynx-technik.com/software-applications/

To update a yellobrik, power it and connect it to the PC or Mac running the control software with the provided USB cable. If a new firmware is available for the connected module your control software will notify you and will guide you through the update process.

Firmware updates are always free of charge.

Fiber I/O Options

The module can accommodate several fiber SFPs as detailed below. CWDM versions are available in 18 different wavelengths. (See website for the updated SFP list).

Transceiver (send and receive)

Wavelength	TX Power	RX Sensitivity	Max Distance	Option #
1310nm (SM)	-5 ... +0.5dBm	-19dBm	10km (6.2 miles)*	OH-TR-12G-LC
1270 ... 1610nm (SM)	-2 ... +3dBm	-15dBm	10m (6.2 miles)*	OH-TR-12G-XXXX-LC

Transmitter

Wavelength	TX Power	Max Distance	Option #
1310nm (SM)	-5 ... -0.5dBm	10km (6.2miles)*	OH-TX-12G-LC
1270 ... 1610nm (SM)	0 ... +5dBm	40km (24.85miles)*	OH-TX-4-12G-XXXX-LC
1270 ... 1610nm (SM)	-2 ... +3dBm	10km (6.2miles)*	OH-TX-12G-XXXX-LC

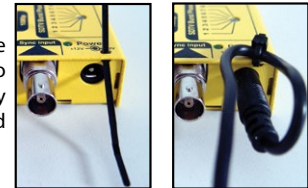
Receiver

Wavelength	Sensitivity				Option #
	1.5G	3G	6G	12G	
1260-1620nm (SM)	-16dBm	-14dBm	-14dBm	-10dBm	OH-RX-12G-LC
1260-1620nm (SM)	-18dBm	-18dBm	-18dBm	-18dBm	OH-RX-4-12G-LC

* Distances are an approximation and can vary depending on individual setups.

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.



Mounting Solutions

The optional RFR 1001 mounting bracket can be used to permanently mount the module on any surface or on 19" rack rails.

The optional RFR 1200 rack mount can be used to permanently mount up to 14 yellobrik modules. In addition, the RFR 1200 can provide full power redundancy for all mounted yellobriks.

