

Module LEDs

The module has several LEDs included to indicate status:

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. To update a yellobrik, power it and connect it to the PC or Mac running the yelloGUI software with the provided USB cable. The yelloGUI software will indicate if a new firmware is available for the connected module and will guide you through the update process. Firmware updates are always free of charge.

For more information and to download the yelloGUI application please goto: <http://yellogui.lynx-technik.com>

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 |

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 |

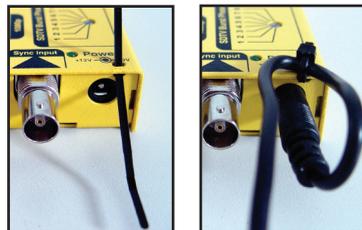
* These fiber options have fiber connection choices

LC=LC fiber connector
ST= ST fiber connector
SC=SC fiber connector
All other fiber options are LC connections



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.

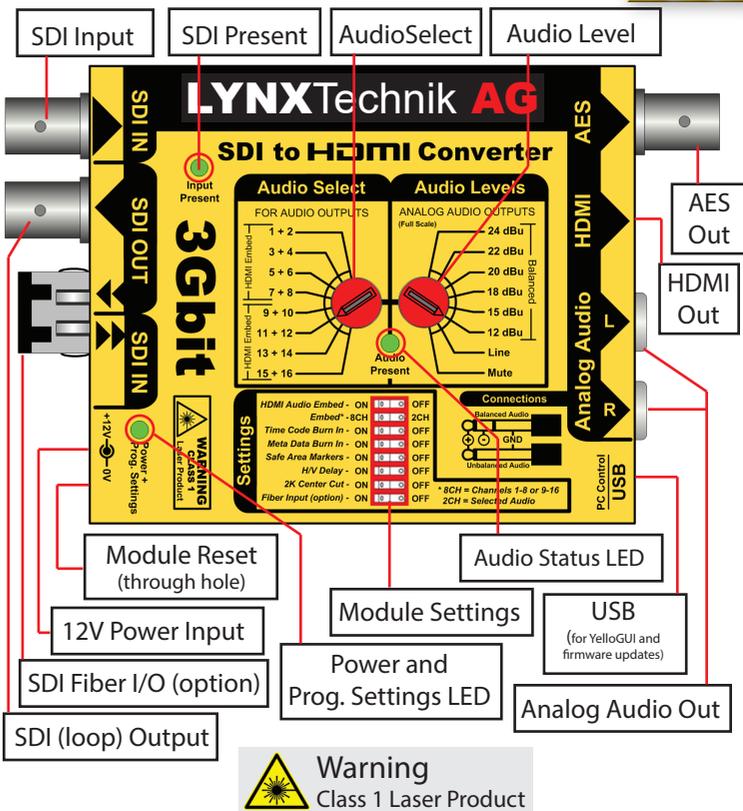


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Quick Reference



CDH 1813 3G SDI to HDMI Converter



Connections

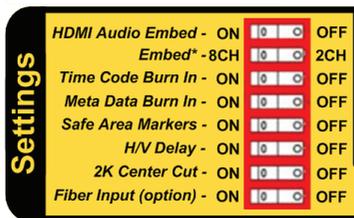
All connections are clearly indicated on the module. Analog audio can be balanced or unbalanced using the phono to RCA adapters supplied.

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

| Parameter | Settings | Parameter | Settings |
|-----------------------|---------------------------|----------------------|--|
| Safe Area Markers | OFF | SDI input RGB Range | SMPTÉ Limited |
| | SMPTÉ Safe Action (90/90) | | Full Range |
| | SMPTÉ Safe Title (80/80) | HDMI Color Range | SMPTÉ Limited |
| | EBU Action (3.5/3.5) | | Full Range |
| | EBU Graphics (5/10) | HDMI Input Bit Depth | AUTO |
| Aspect Ratio Markers | OFF | | 8 bit |
| | 4:3 | | 10 bit |
| | 16:9 | | 12 bit |
| Curtain Transparency | 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 | |
| Marker Color | White | 3D HDMI O/P Format | AUTO |
| | R,G,B,Y,C,M and Black | | Frame Packing (FP) |
| Safe Area from Aspect | ON | | Side by Side (SS) |
| | OFF | | Top and Bottom (TB) |
| 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) | | |
| | 2D (no 3D) | | |
| Swap SDI Streams | 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) |
| | Electrical Return Loss: >15dB from 5MHz to 1.5GHz, >10dB from 1.5GHz to 3GHz |
| | Automatic cable EQ (Belden 1694A cable) 340m @ 270Mbit/s, 150m @ 1.5Gbit/s, 120m @ 3Gbit/s |
| Optical Input | 1 x fiber optic SDI input (optional) SMPTE 297M - 2006 |
| SDI Output | 1 x SDI video loop out. 75 Ohm BNC connector |
| | SMPTÉ 424M, SMPTÉ 292M, SMPTÉ 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 @ 3.7W nominal - (supports 10 - 14VDC input range) |

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

www.lynx-technik.com

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