## yelloGUI Parameters

| Parameter | Settings |
|-----------|----------|
| Safe Area Markers | SMPTE Safe Action (90/90) |
| | SMPTE Safe Title (80/80) |
| | EBU Action (3.5/3.5) |
| | EBU Graphics (5/10) |
| | OFF |
| Aspect Ratio Markers | OFF |
| | 4:3 |
| | 16:9 |
| Curtain Transparency | 100% |
| | Adjustable 30%-90% |
| Center Cross Marker | ON |
| | OFF |
| Marker Color | White |
| | R,G,B,Y,C,M and Black |
| Safe Area from Aspect | ON |
| | OFF |
| HDMI EOTF | AUTO |
| | gamma SDR |
| | gamma HDR |
| | ST.2084 PQ |
| | HLG |
| 3G Level B Audio Source | Stream A |
| | Stream B |

| Parameter | Settings |
|-----------|----------|
| SDI Color Range | AUTO |
| | SMPTE Limited |
| | Full Range |
| HDMI Color Range | AUTO |
| | SMPTE Limited |
| | Full Range |
| HDMI Colometry | AUTO |
| | BT.709 |
| | BT.2020 |
| HDMI Bit Depth | AUTO |
| | 8 bit |
| | 10 bit |
| | 12 bit |
| HDMI Color Space | AUTO |
| | RGB |
| | Y,Cr,Cb 4:2:2 |
| | Y,Cr,Cb 4:4:4 |
| Flip Output Signal | NO FLIP |
| | H (Horizontal) |
| 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)

Default settings

When a 3G Level B 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.

To access these additional settings please download yelloGUI via **yellogui.lynx-technik.com**

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## Technical Specifications
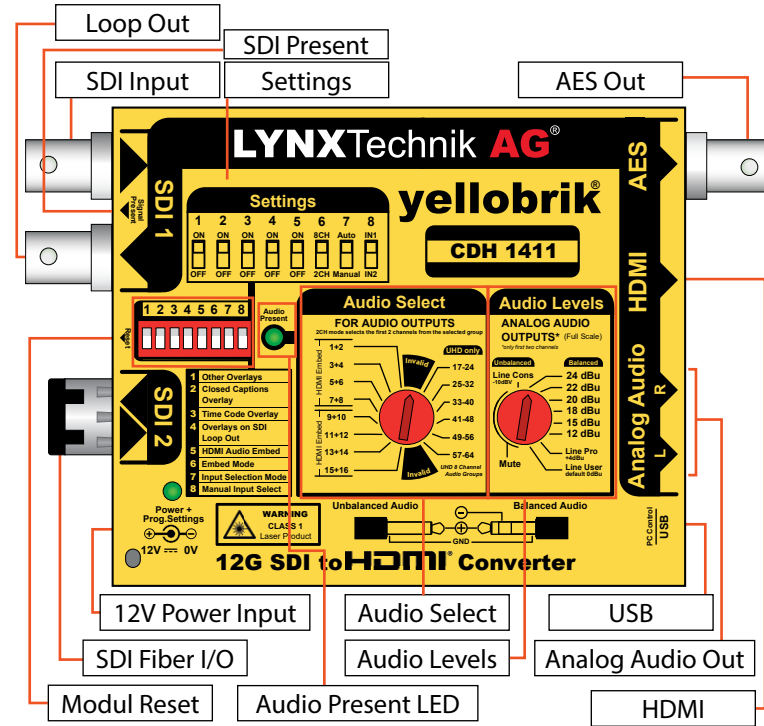
### CDH 1411
**12G SDI to HDMI Converter**

| | |
|---|---|
| **SDI Video** | 1 x SDI video input on 75 Ohm BNC connector<br>1 x SDI video output on 75 Ohm BNC connector |
| | SMPTE ST 2082, SMPTE 424M, SMPTE 292M, SMPTE 259M |
| | Electrical Return Loss: >15dB from 5MHz to 1.5GHz, >10dB from 1.5GHz to 3GHz |
| | Automatic cable EQ (Belden 1694A cable)<br>190m @ 1.5Gbit/s, 150m @ 3Gbit/s, 85m @ 12Gbit/s |
| **Fiber Optic** | 1 x fiber optic input (LC/PC Connections)<br>1 x fiber optic output (LC/PC Connections) |
| | SMPTE ST 2082 |
| **HDMI** | 10 bit HDMI 1.4a support including 3D, deep color and embedded audio Type A connector. |
| | 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** | AES3id on 75 Ohm BNC, 2 channels (selectable) |
| **Audio** | Left and right analog audio using 1/4 inch jack 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 to RCA connection adapters supplied |
| **USB** | Standard USB Mini B port for yelloGUI interface + firmware updates |
| **Power** | +12V DC @ 8.7W nominal - (power supply included)<br>(supports 10 - 24V DC input range) |



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**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 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 audioembedding setting ties into the audio select switch. If 2CH is selected then only the selected audio will be embedded into the HDMI out. In 8 channel embedding mode, the rotary selects the first stereo pair of a group of 8 subsequent audio channels

| | |
|---|---|
| 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. Access to advanced user settings can be made using the yelloGUI application. See table opposite for the available settings.

## Module LEDs

The module has several LEDs included to indicate status:

### 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 of the audio channels are present |
| 🟡 | Yellow | Only one of the audio channels is present |
| ⚪ | Off | No audio present |

### Power / Prog Setting LED

| | | |
|---|---|---|
| 🟢 | Green | Power OK and no internal programmed settings are present |
| 🟡 | Yellow | Power OK and some programmed settings are active* |
| 🔴 | Red | 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) |
| ⚪ | Off | 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.

yellogui.lynx-technik.com

**Firmware updates are always free of charge.**

## 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).

### Transceiver (send and receive)

| Wavelength | TX Power | RX Sensitivity | Max Distance | Option # |
|---|---|---|---|---|
| 1310nm (SM) | -5 ... +0.5dBm | -19dBm | 10km (6.2miles)* | OH-TR-12G-LC |
| 850nm (MM) | -7 ... -2dBm | -15dBm | 300m (984 feet)* | OH-TR-0-850-MM |

### Transmitter

| Wavelength | TX Power | Max Distance | Option # |
|---|---|---|---|
| 1310nm (SM) | -5 ... -0.5dBm | 10km (6.2miles)* | OH-TX-12G-LC |

### Receiver

| Wavelength | Sensitivity | | | | Option # |
|---|---|---|---|---|---|
| | 1.5G | 3G | 6G | 12G | |
| 1270-1630nm (SM) | -16dBm | -14dBm | -14dBm | -10dBm | OH-RX-12G-LC |

* Distances are an aproximation 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.
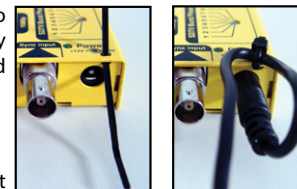
## Mounting Solutions

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 1000-1 rack mount can be used to permanently mount up to 14 yellobrik modules. In addition, the RFR 1000-1 can provide full power redundancy for all mounted yellobriks.