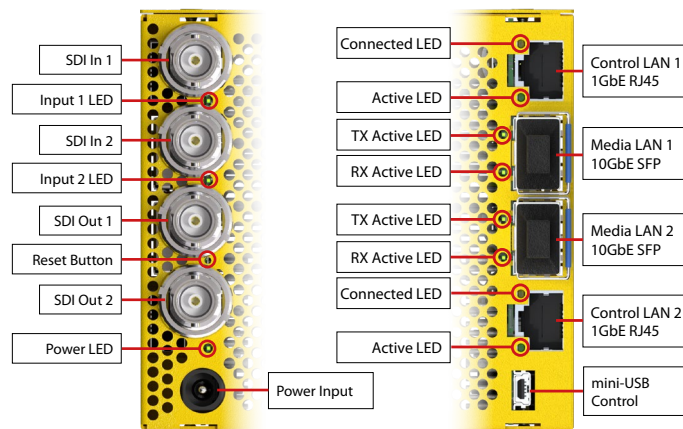
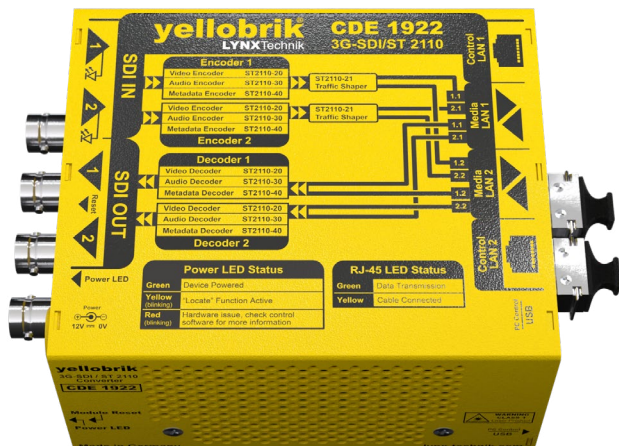


### 3G-SDI / ST 2110 Bi-Directional Converter

LYNX | Centraal™

yelloGUI



### Features

- Full 3G-SDI/1.5G-SDI Support
- Frame synchronizer to align SDI outputs to ST 2059
- Full redundancy for IP links
- NMOS Capability for
  - IS-04 Discovery and Registration Specification
  - IS-05 NMOS Device Connection Management Specification
  - IS-08 Audio Channel Mapping
- Seamless Protection Switching ST 2022-7
- 2x 10GbE Media LAN Fiber In-/Output
- 2x 1GbE RJ45 Management LAN
- 3G-SDI Level A and Level B support
- LyncCentraal & yelloGUI compatible

### Description

The CDE 1922 is a high performance 3G-SDI to/from IP ST 2110 bridge capable of handling up to four HD video streams simultaneously: 2x 3G-SDI to IP and 2x IP to 3G-SDI.

The converter has 2x ST2110-30 audio encoders and 2x ST2110-30 audio decoders working simultaneously. Each encoder/decoder has a maximum of 8 audio channel (L24, 48kHz, 4 groups). The CDE 1922 can be equipped with a pair of 10GbE Multi-mode, Single-mode or RJ45 SFPs.

The module is suitable for all SMPTE standard signals from 1.5G-SDI to 3G-SDI (SMPTE 292M, 424M) and 10GbE SMPTE 2110.

### Technical Specifications

|                 |                                                                                                           |                                   |                                                    |               |
|-----------------|-----------------------------------------------------------------------------------------------------------|-----------------------------------|----------------------------------------------------|---------------|
| Video Formats   | 2K                                                                                                        | 2048x1080p                        | 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                           |               |
|                 | HD                                                                                                        | 1920x1080i                        | 50, 59.94, 60                                      |               |
|                 | HD                                                                                                        | 1280x720p                         | 23.98, 24, 25, 29.97, 30, 50, 59.94, 60            |               |
| Color Precision | YCbCr 4:2:2 10-bit                                                                                        |                                   |                                                    |               |
| SDI I/O         | 2x 3G-SDI inputs on BNC connector                                                                         |                                   |                                                    |               |
|                 | 2x 3G-SDI outputs on BNC connector                                                                        |                                   |                                                    |               |
|                 | Electrical Return Loss                                                                                    | to 1.5GHz >15dB                   |                                                    | to 3GHz >10dB |
|                 |                                                                                                           | 1.5GbE                            |                                                    | 3GbE          |
|                 | Automatic cable EQ                                                                                        | 200m*                             |                                                    | 150m*         |
|                 | Belden 1694A                                                                                              |                                   |                                                    |               |
| IP I/O          | 2x 10GbE Media LAN SFP cages (also usable for in-band control)                                            |                                   |                                                    |               |
|                 | 2x 1GbE RJ45 Control LAN ports                                                                            |                                   |                                                    |               |
|                 | SMPTE ST 2110-20:                                                                                         | Uncompressed Active Video         |                                                    |               |
|                 | SMPTE ST 2022-7:                                                                                          | Seamless Protection Switching     |                                                    |               |
|                 | SMPTE ST2110-30:                                                                                          | 1-8 Channel PCM Digital Audio     |                                                    |               |
|                 | SMPTE ST2110-31:                                                                                          | Raw AES Audio                     |                                                    |               |
|                 | SMPTE ST 2110-40:                                                                                         | Ancillary Data acc. SMPTE ST 29-1 |                                                    |               |
|                 | SMPTE ST 2110-10:                                                                                         | RTP System Timing                 |                                                    |               |
|                 | SMPTE ST 2059:                                                                                            | Precision Timing                  |                                                    |               |
| Power           | +12V DC @ 16W nominal (incl. 2x SFP) - ( 7-24V DC input range )                                           |                                   |                                                    |               |
| Physical        | Size (incl. connectors): 140mm x 90mm x 50mm (4.96" x 3.54" x 1.97")<br>Weight (excl. SFP): 200g (7.05oz) |                                   |                                                    |               |
| Ambient         | 5 - 40°C (41 - 104°F) 90% Humidity (non condensing)                                                       |                                   |                                                    |               |
| Includes        | Module, AC power supply                                                                                   |                                   |                                                    |               |



**CAUTION:** This is a high-power module. Ensure adequate airflow when mounting it in the RFR 1200 rack frame. If needed, leave empty slots beside the module or add an RFF 1200 cooling fan tray to keep it within its recommended temperature range.

\*Distance is an approximation. Actual distances achieved can be longer or shorter depending on the type of cable. Determine link losses and perform optical budget calculations to ensure correct operation.

### Ordering Information

| Model         | Mode        | Type     | Tx Wavelength | Tx Power | Rx Input Range | Rx Sensitivity | Distance (up to)   | SFPs Included |
|---------------|-------------|----------|---------------|----------|----------------|----------------|--------------------|---------------|
| CDE 1922      | Single-mode | CWDM     | 1270 - 1610nm | -1dBm    | 1260 - 1620nm  | -20dBm         | 40/80 km, 25/50 mi | No            |
| CDE 1922 MM   | Multi-mode  | SR       | 850nm         | -4dBm    | 840 - 860nm    | -15dBm         | 550m / 1800 ft     | Yes           |
| CDE 1922 SM   | Single-mode | Standard | 1310nm        | -5dBm    | 1260 - 1620nm  | -16dBm         | 10 km, 6.2 mi      | Yes           |
| CDE 1922 RJ45 | Ethernet    | RJ45     | N/A           | N/A      | N/A            | N/A            | 30m                | Yes           |

### Control Parameters

| Parameter                 | Settings                                   |
|---------------------------|--------------------------------------------|
| Video Payload Type        | 8-bit value as defined by the RTP protocol |
| Packet Rate Shaping (PRS) | Linear<br>Gapped                           |
| Video Standard Detection  | Auto<br>Manual                             |
| DCI Formats               | ON<br>OFF                                  |
| Level A/B                 | Level A<br>Level B                         |
| Colorimetry               | BT.601<br>BT.709<br>BT.2020                |
| Transfer Characteristic   | SDR<br>HLG<br>PQ                           |

| Parameter                      | Settings                                                                 |
|--------------------------------|--------------------------------------------------------------------------|
| Delay Modes                    | Milliseconds<br>Frames/Lines/Pixles                                      |
| Audio Payload Type             | 8-bit value as defined by the RTP protocol                               |
| Audio Packet Time              | 1ms<br>125µs                                                             |
| Audio Mode                     | L16<br>L20<br>L24<br>AES/AM                                              |
| ANC Payload Type               | 8-bit value as defined by the RTP protocol                               |
| NMOS                           | Enabled<br>Disabled                                                      |
| NMOS Primary Control Interface | Disabled<br>Control LAN 1<br>Control LAN 2<br>Media LAN 1<br>Media LAN 2 |

| Parameter                               | Settings                                                                 |
|-----------------------------------------|--------------------------------------------------------------------------|
| NMOS Secondary Control Interface        | Disabled<br>Control LAN 1<br>Control LAN 2<br>Media LAN 1<br>Media LAN 2 |
| Registration and Discovery Server (RDS) | Enabled<br>Disabled                                                      |
| RDS Manual Version                      |                                                                          |
| RDS Manual IP                           |                                                                          |
| RDS Manual Port                         |                                                                          |
| PTP Domain                              |                                                                          |
| PTP Rate Preselection                   |                                                                          |
| PTP Announce Interval                   | 1 to 8 msg/sec                                                           |
| PTP Announce Timeout                    |                                                                          |
| PTP Sync Interval                       | 2 to 128 msg/sec                                                         |
| PTP Delay Request Interval              | 2 to 128 msg/sec                                                         |

### Firmware Update & Control Software

To update a yellobrik, connect it to the latest version of Lynx Centraal or YelloGUI. The application will check for firmware updates. In Lynx Centraal, navigate to the "Update" tab then select the devices to update and click on "Start Update".



Firmware updates are always free of charge.

[www.lynx-technik.com/software-applications/](http://www.lynx-technik.com/software-applications/)

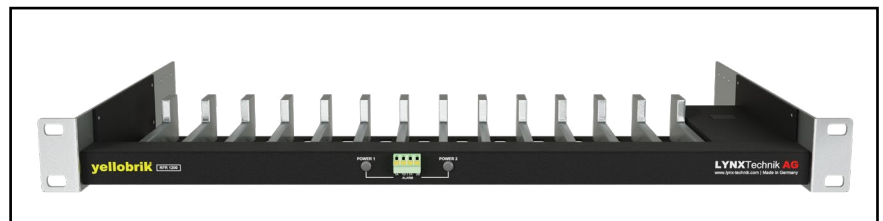
### Optional Accessories

#### Rack Frames

This yellobrik can be placed in a rack frame along others to build increasingly complex systems, all monitored and controlled with a rack controller (RCT 1012) and server module (SRV 1000) via a PC or MAC using LynxCentraal.

The RFR 1200 offers additional power redundancy with GPI alert. It automatically closes a connection between the A and B terminals on power failure.

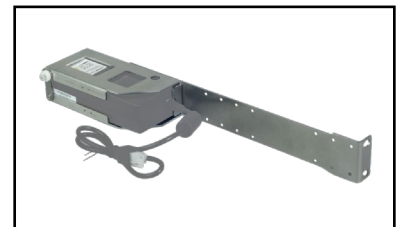
The RPS A100 is a 100W power supply, which can be mounted at the rear end of the RFR 1200 with an RXT 1001 power supply holder for rack frames.



**RFR 1200:** yellobrik Rack Frame



**RPS A100:** 100W Power supply



**RXT A100:** Power Supply Holder