

Bidirectional 2SI Quad Link to Single Link Converter

LYNX | Centraal™

yelloGUI✓

- Support for Quad 2SI to 12G SDI or 12G SDI to Quad 2SI conversions
- 4K UHD 12G SDI Fiber and BNC Input (Fiber SFP optional)
- 4K UHD 12G SDI Fiber and BNC Output (Fiber SFP optional)
- 4K UHD 12G SDI BNC Loop Output
- 4x 3G SDI BNC Input
- 4x 3G SDI BNC Output
- Control & configure via LynxCentraal
- Fully compatible with rack frame LYNX Technik RFR 1000-1

The CQS 1441 is a compact solution to bridge between 4K UHD quad link 2SI devices and single link 12G SDI devices. The module can be configured to convert to or from Quad Link 2SI. Note. This module does not support SQD (Square Division)

CQS 1441 can also be used for distributing 3G/HD signal on Input 1 (BNC/SFP) to four 3G/HD signals (BNC) as well as on the Loop out. Video format 720p is not supported in Auto distribution mode.

The module is suitable for all SMPTE standard signals from 1.5Gbit/s to 12Gbit/s (SMPTE 292M, 424M, 2081 and 2082)

Conversion modes:

- 12G SDI single link to 4 x 3G Quad link (2SI)
- 4 x 3G Quad link (2SI) to 12G SDI single link
- 6G SDI single link to 4 x 1.5G SDI
- 4 x 1.5G SDI to 6G SDI single link

With the distance limitations of 12G SDI electrical connections, the CQS 1441 is equipped with an integrated SFP fiber port which can accept a number of 12G fiber options depending on the specific application.

Fiber I/O Options:

There are 12G SDI fiber Transmitters, Receivers, Transceivers and also a selection of CWDM Transmitters available depending on the application.

SDI Fiber Transmitter Options		
Model	Description	Power
OH-TX-4-12G-LC	SFP Fiber TX - Singlemode - LC, ST or SC conn. - 40km*	3dBm
OH-TX-12-XXXX-LC	CWDM SFP Fiber TX - Singlemode LC Conn. - 10km* XXXX=Wavelength. 18 according to ITU T G692.2 1270nm through 1610nm	3dBm
SDI Fiber Receiver Options		
Model	Description	Sensitivity
OH-RX-12G-LC	12G SDI Fiber Receiver (1260-1620nm)	-10dBm
SDI Fiber Transceiver Options		
Model	Description	Power / Sensitivity
OH-TR-12G-LC	12G SDI Fiber Transceiver (1310nm)	0.5dBm / -10dBm

CAUTION: This is a high power module. If mounting the module in the RFR 1200 rack frame please leave an empty slot each side of the module to allow for adequate airflow to prevent the risk of overheating.



Shown with Fiber SFP Option Installed

Technical Specifications

Inputs	4x multi-rate SDI inputs (75 Ohm BNC connector) (2SI only, no support for SQD or "Square Division")			
	SMPTE 424M, SMPTE 292M, SMPTE 2081, SMPTE 2082			
	Multi-standard operation from 1.5Gbit/s to 12Gbit/s; relocking			
Electrical Return Loss:	to 3GHz >10dB	to 6GHz >7dB	to 12GHz >4dB	
Automatic cable EQ	3Gbit/s	6Gbit/s	12Gbit/s	
	140m Belden 1694A	80m Belden 4794R	80m	
Outputs	5x multi-rate SDI outputs (75 Ohm BNC connector) 1x 12Gbit/s SDI output (75 Ohm BNC connector) 1x 12Gbit/s SDI loop output (75 Ohm BNC connector) (2SI only, no support for SQD or "Square Division")			
	SMPTE 424M, SMPTE 292M, SMPTE 2081, SMPTE 2082			
Electrical Return Loss:	to 3GHz >10dB	to 6GHz >7dB	to 12GHz >4dB	
Alignment Jitter	1.5Gbit/s	3Gbit/s	6Gbit/s	12Gbit/s
	<0.2 UI	<0.3 UI	<0.3 UI	<0.3 UI
Timing Jitter	<1.0 UI	<2.0 UI	<2.0 UI	<2.0 UI
Fiber Input	1x fiber optic input option for 12G SDI (see option tables)			
	SMPTE 297M - 2006			
	1260 - 1620nm			
Fiber Output	1x fiber optic output option for 12G SDI (see option tables)			
	Non CWDM and CWDM options available			
USB	Mini "Type B" connection to monitor via LynxCentraal and update firmware			
Power	+12V DC @ 2.7W nominal - (supports 7 - 16V input range)			
Physical	Size (incl. connectors)	Size: 138mm x 90mm x 50mm (5.43" x 3.54" x 1.96") including connectors		
	Weight:	250g (8.9 Oz)		
Ambient	5 - 40°C (41 - 104°F) 90% Humidity (non condensing)			
Model #	CQS 1441 (EAN# 4250479325678)			
Includes	Module, AC power supply, Quick Reference			

CQS1441_DS-rev11 Specifications subject to change



Application Examples

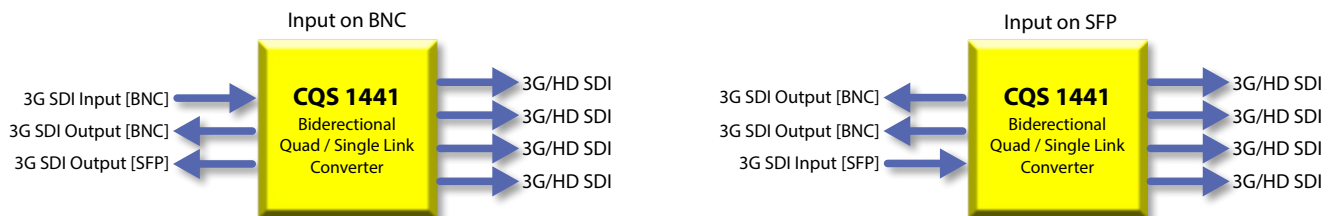
There are multiple applications for the CQS 1441, aside from the basic conversions to and from Quad link to Single link, the optional fiber port opens up a host of additional possibilities.

Basic Applications

You may have a 4K camera (or another source device) which has a quad 2SI 4K UHD output which you would like to convert to a standard single link 12G SDI signal. Likewise, you may have a disk recorder or other device which requires a quad 2SI input, and you only have a 12G source. These basic "bridge" modes are the most simple and most common applications of the module.



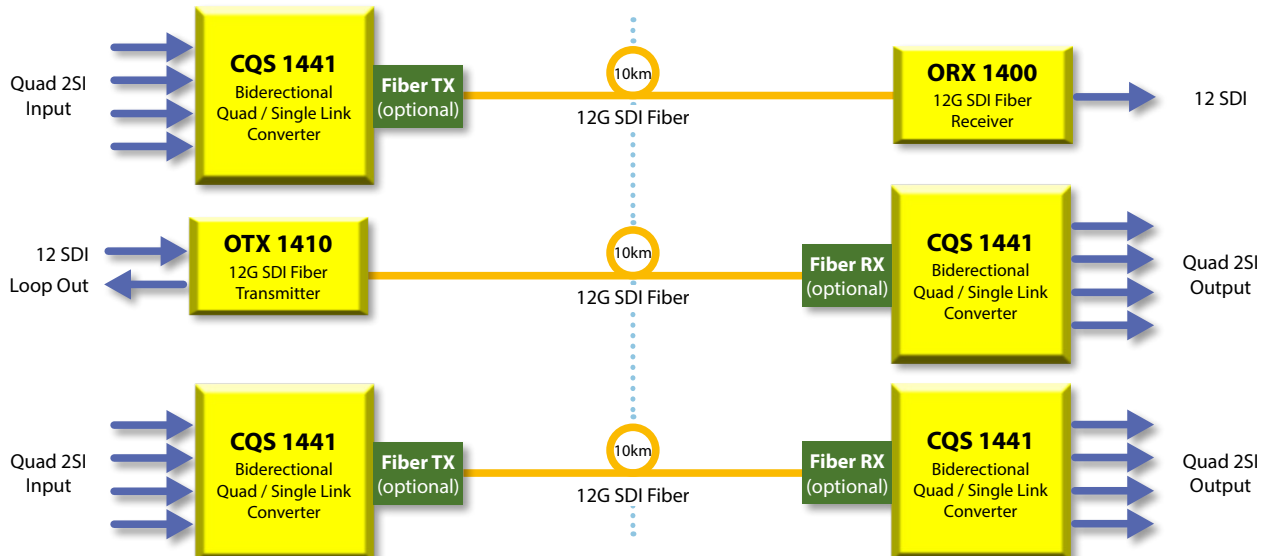
You can also use CQS 1441 for distributing one 3G/HD signal from Input 1 [BNC/SFP] and distribute it to output 1-4 as well as loop out.



Note: 720p video format not supported

Basic Fiber Applications

Because of the distance limitations using coaxial cable for 12G SDI, using fiber makes a lot of sense. The CQS 1441 is equipped with an integrated SFP port which can accept several fiber options which expands the distance of the 12G SDI signal. Likewise, you can also extend the distance of a native Quad 2SI signal using fiber if needed. (Note: additional LYNX Technik Fiber conversion modules are shown in some applications)



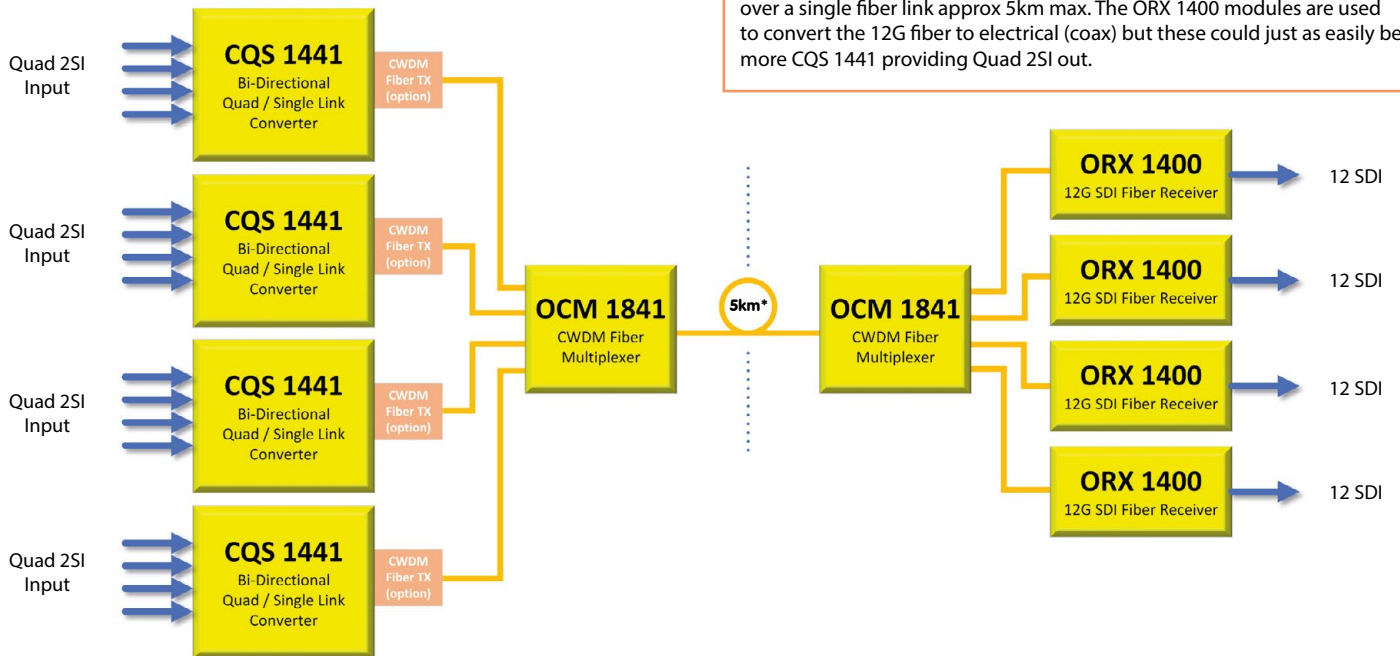
A fiber Transceiver option is also available. This includes both a Transmitter and Receiver in a single SFP package. The receive and transmit functions cannot be used simultaneously, but this option is useful if the CQS 1441 configuration is frequently changed where fiber transmission is sometimes needed and on other occasions fiber reception.

***Note:** Max distances quoted are only approximations based on nominal fiber links. Actual distances achieved can be shorter or longer than that stated. Many things can impact distance such as splices, connections, patches, splitters and the quality of the fiber. For longer distances you should always calculate the total fiber losses in the fiber link and ensure adequate optical budget.

CWDM Fiber Applications

Using the available 12G SDI CWDM fiber transmitter options with the CQS 1441 opens up a whole host of additional possibilities for more complex system designs combining multiple signals into a single fiber link, unidirectional and even bi-directional over a single link. Quad link 2SI and 12G can be combined with ethernet, serial data and even additional SDI signals if needed. There are too many possibilities to show them all, but below are a few which show the versatility of CWDM fiber when used with the CQS 1441.

This configuration shows how to convert and send 4 x Quad 2SI signals over a single fiber link approx 5km max. The ORX 1400 modules are used to convert the 12G fiber to electrical (coax) but these could just as easily be more CQS 1441 providing Quad 2SI out.



This application shows 2 x CQS 1441 being used bidirectionally over a single fiber link as well as combining Ethernet (or serial RS 232/422/GPI) into the same link.

