norwia

Quick Start guide

miniHUB System

VER1650

giving value...

Easy Start guide miniHUB Frame

The miniHUB frame uses the latest manufacturing and design technology plus a dash of innovative thinking to give the user a positive experience.

We would like to give you a brief run through on important facts and features that you should know before letting you loose on the miniHUB product.

The OUTSIDE of the frame

1. The front door on the miniHUB frames is a **"PUSH TO RELEASE"** mechanism. Please **do not** place excessive force by "PULLING" the door away from the unit. A gentle and even push from both sides of the frame towards the rear of the unit will release the door, you should hear a click sound when this is activated. The door is held in by side rails and will drop away from the miniHUB frame but stay attached. The door can be removed totally if required by pressing the left and right rails towards the center of the frame while holding the door up and pulling gently forward. Closing the door is identical to opening the door, "PUSH TO CLOSE"

2. PLEASE observe all ESD precautions when handling this unit and the electronics inside.

3. The miniHUB frame is supply with one external supply, a second supply can be purchased to provide full redundancy for mission critical applications. Norwia have designed the miniHUB system with a single supply voltage (+24 Vdc), but it is possible to use any DC supply's that can delivery between +12Vdc (60w) to +24Vdc. Mixed supplies can be used, ie, Battery or Mains driven supplies at the same time! These are hot swappable if a supply should fail.

The INSIDE of the frame

1. The miniHUB frame will hold 4 cards such as the OC-4B-SDI and has room for two passive devices such a 8 port CWDM modules or 2 if required for a larger CWDM system. There is also a range of WDM and Splitter Optics to choose from.

2. All frames are delivered with the RCONmini (Rack Controller) but the controller has limited function in a stand-a-lone mode. The RCONmini can be used later to provide SNMP functionality for control and monitoring and for custom applications, please contact Norwia directly.

3. The miniHUB has a specially designed card guide system called **"Click & Go"** this unique system allows for a positive locking of the card once inserted, without the use of screws, springs or handle only mechanisms. The card should be positioned between the slide rail while pushing slightly (1mm) to the right hand handle of the black card guide. Once the edge of the card is passed the point of the entry you can release this handle and then use the red handle to lock the unit into its correct position. Once the card is pressed into position you should hear a **"Click"** sound, this mean you are in position and can **"go"** onto your next task. To release use the red handle to open the card guide lock and slide the card towards you.

4. To release RCONmini, press the extended portion of the PCB slightly down so its notch clears the top cover of the miniHUB frame. With the PCB slightly down pull the unit towards you.

Easy Start guide OC-4B-SDI

RCONmini reads information from the cards in the miniHUB, and presents this information to the user via a Web interface. RCONmini also controls the fans in the system.

RCONmini uses an SD-card as a storage device. If RCONmini refuses to boot, it will instructs the fans to run at full speed. This indicates that your SD card needs to be checked.

A user may want to keep a backup of an SD-card. If a new SD-card is to be made, it should be formatted as FAT32. A backup of the initial SD-card can then be dumped to the new SD-card.

TCP/IP address configuration

The IP-address of RCONmini is present in a text-file "rconconf.txt''. This file is present in the root-directory of the SD-card. A sample of the "rconconf.txt" file is below:

```
// This is the configuration file for RCONmini
// After // the rest of the line is disregarded
// All keywords should start in the first column
ADDR 192.168.1.3   // IP address of RCONmini
MASK 255.255.255.0 // Netmask of RCONmini
TITLE "RCONmini"   // Name of RCONmini in web browser
```

Please update the ADDR and MASK lines in this file to configure the IP address.
If the file "rconconf.txt" is missing, RCONmini answers to the IP-address 192.168.1.3. The netmask will be 255.255.255.0.

DC connector and cable retention bracket

The miniHUB is delivered with an optional cable retention bracket. This bracket ensures that no interruption to the both power supplies can happen by accidental disconnetions.

- *Unscrew the Torx #10 screw located above the DC power inlets.*

- *Install the bracket like illustrated below (see Figure 1). Use the new Torx #8 screw comming with the bracket.*

- *When the DC connectors has been installed, use the cable tie to securely fasten the connectors to the bracket.*

Easy Start guide OC-4B-SDI

AutoSFP™ configuration

Just follow the examples contained in this manual to obtain the configurations you require. There are 2 basic rules when it comes to the Auto-configuration nature of the card. Use only Norwia authorized SFP's as these have gone through stringent quality control processes to deliver the best quality available.

Rule 1

The SFP will decide the configuration of the unit in NON-controller mode

Rule 2

Choose the appropriate DIP Switch setting on the OC-4B-SDI, depending if you choose a Optical SFP function or a Format SFP function.

Optical SFP

DIP 1	DIP 2		
OFF	OFF	L	Link mode
ON	OFF	D	Distribution mode
OFF	ON	ADP	Add/Drop/Pass
ON	ON		Reserved for future use

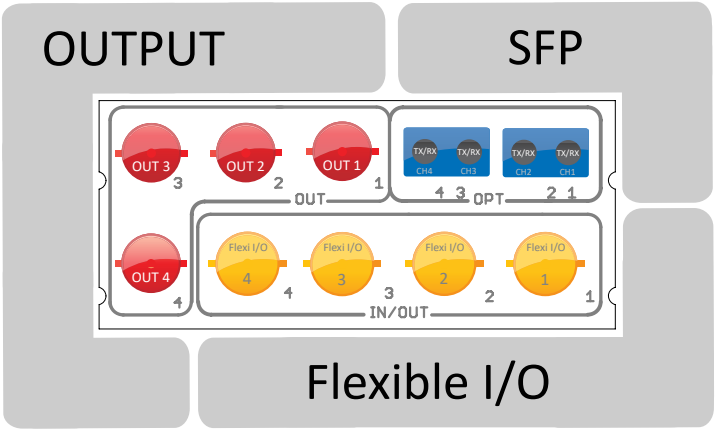
Format SFP

DIP 1	DIP 2		
OFF	n/a	E	Ethernet, Link mode (BNC)
ON	n/a	E	Ethernet, Distribution mode (BNC)

So all you need to know is, What SFP you have and what position the DIP switch is in? THAT is EASY!

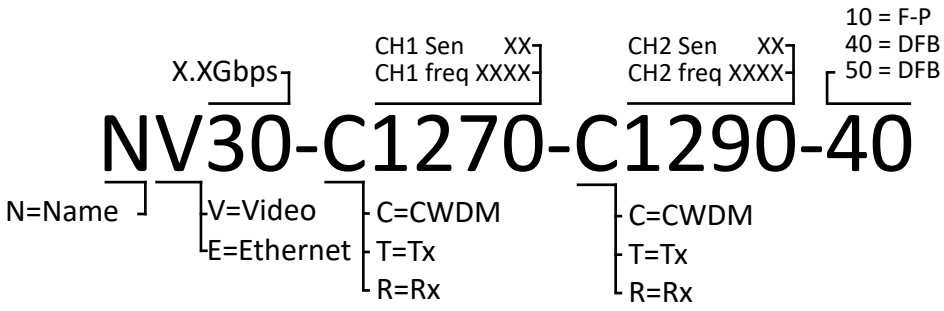
Flexible I/O

Norwia has seen the need to give more flexibility in a reduced backplane layout, using the AutoSFP technology to control the I/O's of the miniHUB
Flexi I/O's means our customers gain unprecedented flexibility from a single backplane solution.
Four BNC on the backplane have the Flexible I/O'S, these are indicated by (IN/OUT) on the silk screen or the yellow BNC logo on the literature.
Blue logo's are an indication of Optical SFP's or Format SFP's.



Choosing the right SFP for your application

Norwia recommends that you survey the fiber infrastructure that you intent to use, the reason being is there can be many hidden factors that can hinder the distance obtainable. As we move to higher bandwidths these factors are amplified. The specifications below give a good estimate but by no means eliminate the needs to perform certain checks when purchasing a fiber optic system.



Tx (1 or 2 channel)

VIDEO

Model	Output power	Laser type	Spectral width
NV30-T1310-10	-5dBm (+5dB/0dB)	F-P	<3nm
NV30-T1310-T1310-05	-7dBm	F-P	<3nm
NV30-T1310-T1310-10	-5dBm (+5dB/0dB)	F-P	<3nm
NV30-T1310-T1310-40	0dBm (+3dB/-0dB)	DFB	<1nm (-20db)
NV30-T1550-T1550-50	0dBm (+3dB/-0dB)	DFB	<1nm (-20db)

Tx (2 channel WDM)

VIDEO

Model	Output power	Laser type	Spectral width
NV30-T1310-T1550-40	0dBm (+3dB/-0dB)	DFB	<1nm (-20db)

Multi Channel Tx (CWDM)

VIDEO

Model	Output power	Laser type	Spectral width
NV30-C1270-C1290-40	0dBm (+3dB/-0dB)	DFB	<1nm (-20db)
NV30-C1310-C1330-40	0dBm (+3dB/-0dB)	DFB	<1nm (-20db)
NV30-C1350-C1370-40	0dBm (+3dB/-0dB)	DFB	<1nm (-20db)
NV30-C1390-C1410-40	0dBm (+3dB/-0dB)	DFB	<1nm (-20db)
NV30-C1470-C1490-40	0dBm (+3dB/-0dB)	DFB	<1nm (-20db)
NV30-C1510-C1530-40	0dBm (+3dB/-0dB)	DFB	<1nm (-20db)
NV30-C1550-C1570-40	0dBm (+3dB/-0dB)	DFB	<1nm (-20db)
NV30-C1590-C1610-40	0dBm (+3dB/-0dB)	DFB	<1nm (-20db)

Receivers

VIDEO

Model	Sensitivity	Laser type
NV30-R20	-23dBm	PIN
NV30-R17-R17	-17dBm	PIN
NV30-R20-R20	-23dBm	PIN
NV30-R30-R30	-28dBm	APD

Transceivers

VIDEO

Model	Output power/ Sensitivity	Laser type	Spectral width
NV30-T1310-R17-05	-7dBm / -17dBm	PIN/F-P	
NV30-T1310-R20-10	-5dBm (+5dB/0dB)/ -20dBm	PIN/F-P	<3 nm

Ethernet Gigabit

ETHERNET

Model	Rate (bit/s)	Connector
ND12-GBE1000	1 Gbit/s	RJ45
ND12-T1310-R28-10	N/A	Optical Tranceiver

The optical tranceiver (ND12-T1310-R28-10) will only work with the Gigabit Ethernet SFP (ND12-GBE1000) and not video application, but you can use Video tranceiever for use with the Gigabit Ehternet modules .

HDMI in & out

HDMI

Model	Standard	Connector
NV30-HDMI-OUT	HDMI 1.4 Type D	hdmi-d (micro)
NV30-HDMI-IN	HDMI 1.4 Type D	hdmi-d (micro)

Analog video

Analog Video

Model	Standard	Connector
NV03-COMP-2-IN	10-bit composite to SD-SDI video convertor	HD-BNC
NV03-COMP-2-OUT	SD-SDI to 10-bit Composite video	HD-BNC

A limited amount of SFP's are listed in this guide . The guide aims at giving a broad approach to what the miniHUB product can perform and not all varieties of SFP's are listed in this short form brochure. Please consult your local representative of Norwia or products or the OC-4B-SDI user manual.

RS422 and GPIO

Data

The miniHUB system can allow for RS422 fiber distribution and GPI and GPO functionality onto fiber. The EX-8B-422 extension board allow these signals to be bundled onto a tranceiver optical pair.
Please consult you Norwia representative or check online at www.norwia.no

SMPTE 2022-6

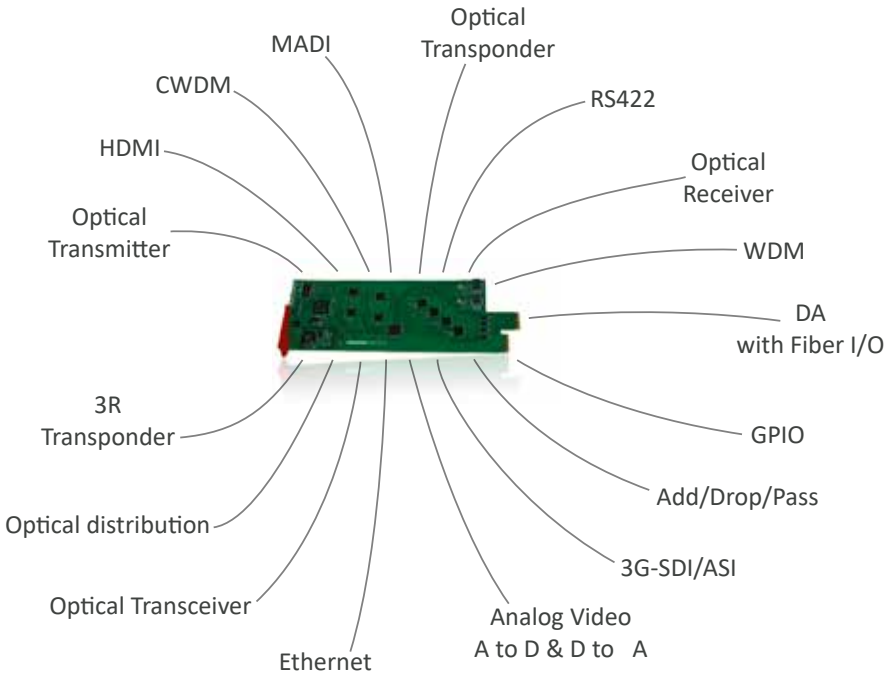
Data

The miniHUB system platform can now convert SMPTE2022-6 to SDI and visa-versa. This is avaiable to all miniHUB systems past and present. Contact Norwia for our brochure 'Intergrating SMPTE 2022-6 and SDI'

4K SDI

VIDEO

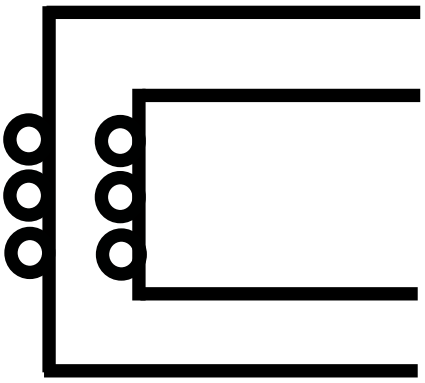
12G-SDI single link and Quad link SDI is all available with the miniHUB optical transport system. Call today about the possibilities that are available with the Quality, flexible and cost effective miniHUB



Short to Medium Haul

up to 20km 3G-SDI

up to 35km HD-SDI



-5dBm

NV30-T1310-T1310-10

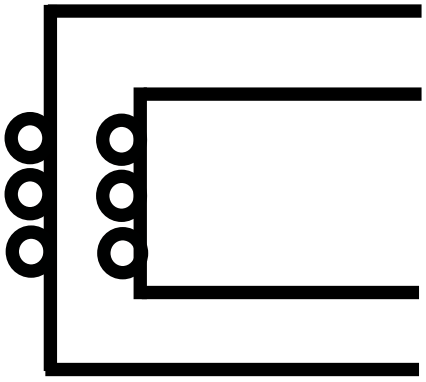
-20dBm

NV30-R20-R20

Medium to Long Haul

over 20km 3G-SDI*

over 35km HD-SDI*



0dBm

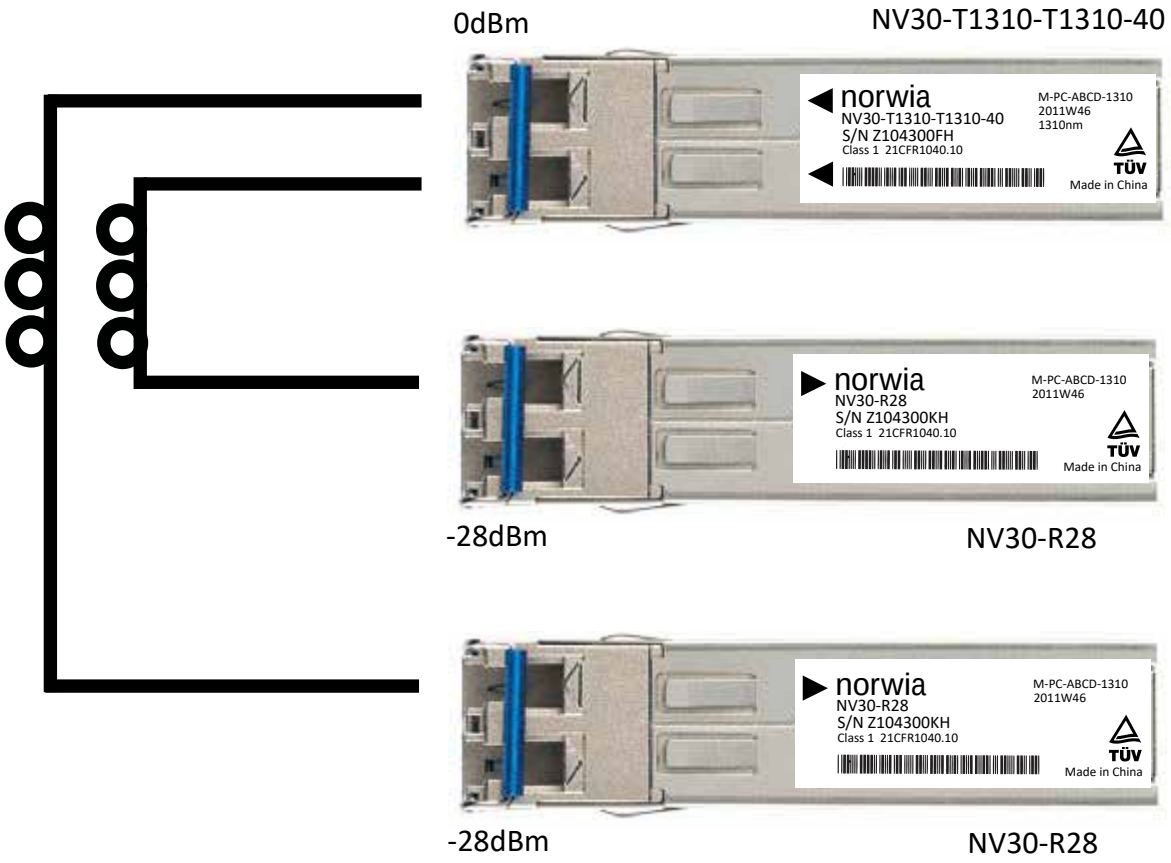
NV30-T1310-T1310-40

-20dBm

NV30-R20-R20

over 20km 3G-SDI*

over 35km HD-SDI*



*System calculation depend on fiber type, Dispersion characteristics, Temperature, spiced connection, patch panels and connector attenuation.

Norwia has the experience and expertise in Fiber systems.
Please contact us or an authorized dealer of Norwia products to discuss how we can build your next generation optical distribution system. We can help you to design your long haul systems while giving you peace of mind that you will obtain a solid and robust optical distribution system. There are many hidden factors that could impede the continual operational security of your revenue providing content. Call the people with the knowledge today!

Remote production

Outside broadcast systems

Inter-building connectivity

Add/drop/pass networks

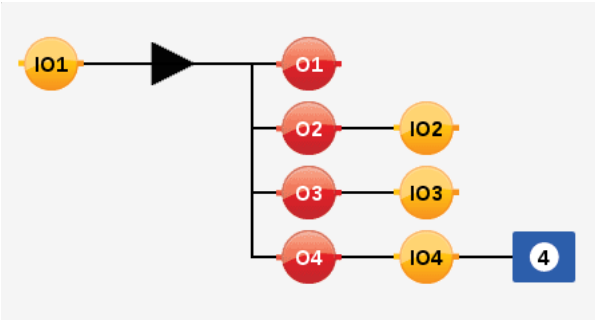
Galvanic isolation for TX towers and buildings

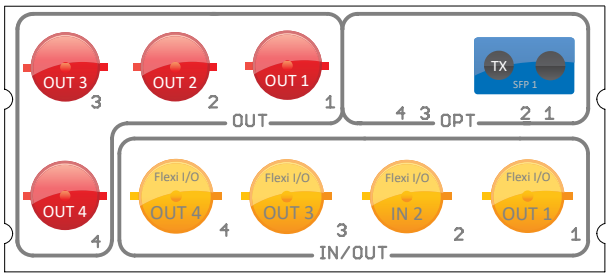
Ring Networks

CWDM metro systems

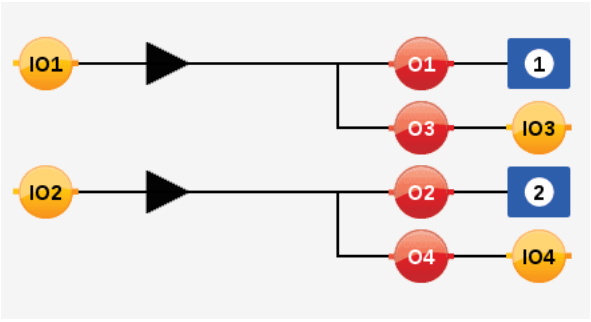
Transmit

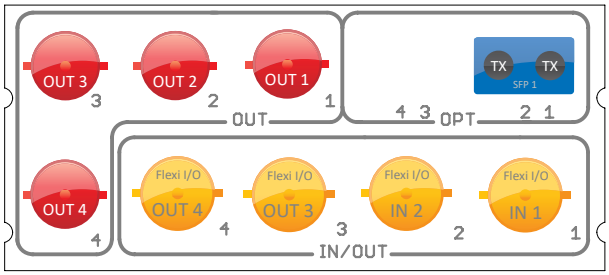
1 x Single TX SFP



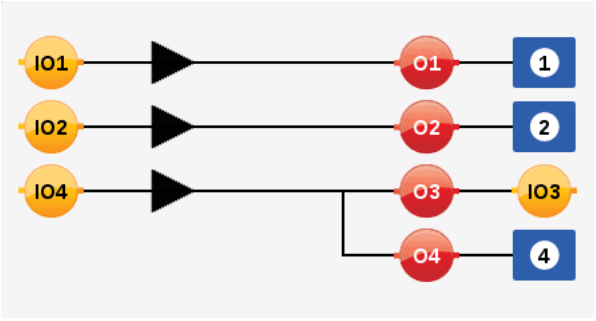


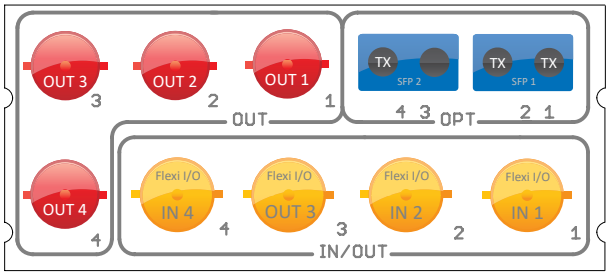
1 x Dual TX SFP



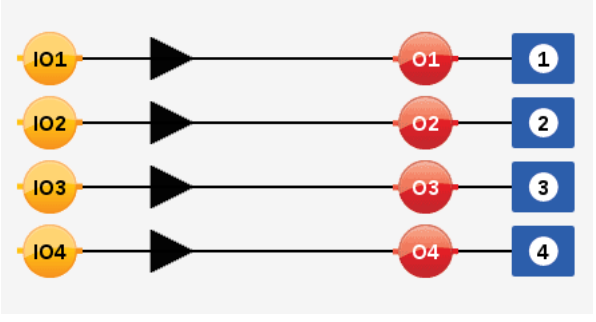


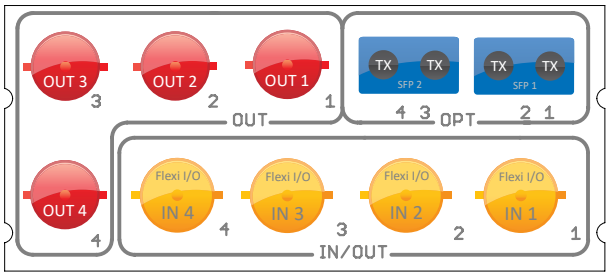
1 x Dual + 1 x Single TX SFP





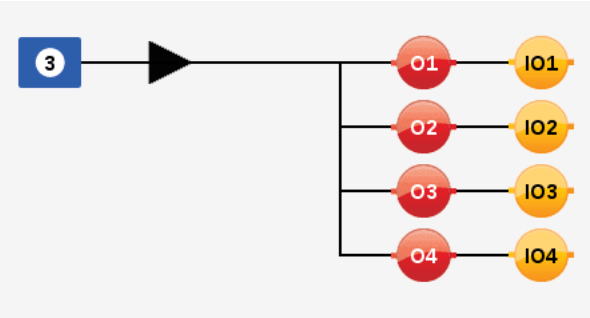
1 x Dual TX SFP

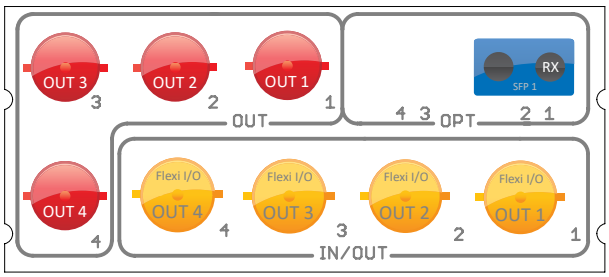




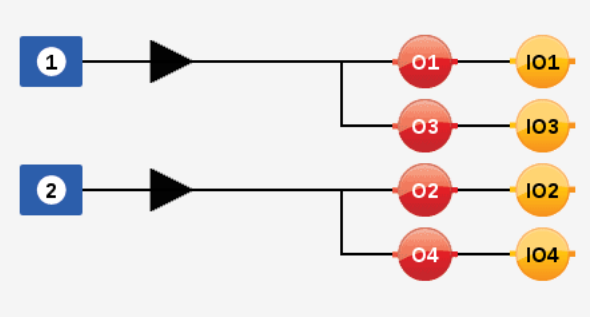
Receive

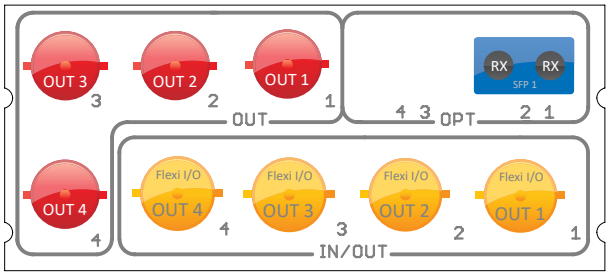
1 x Single RX SFP



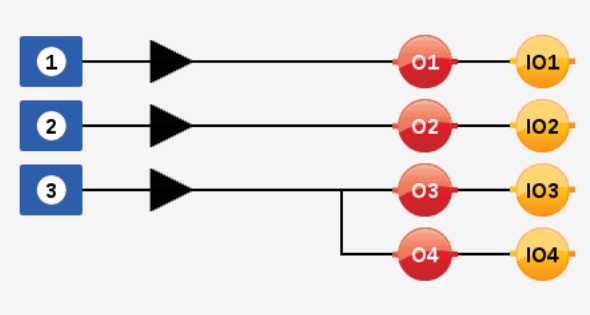


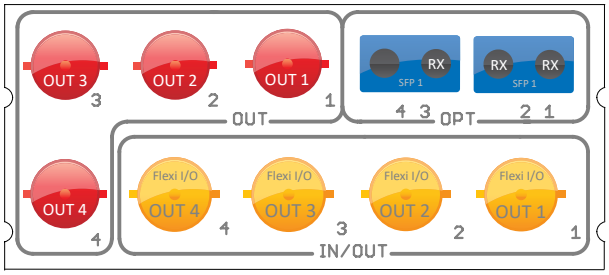
1 x Dual RX SFP



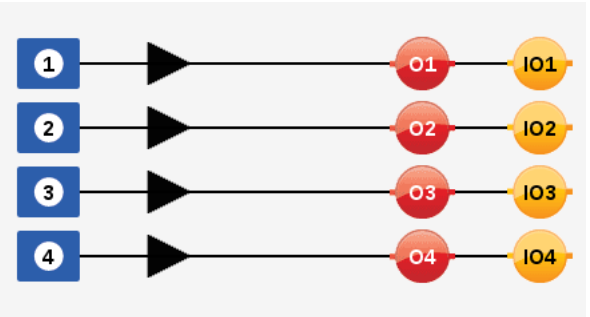


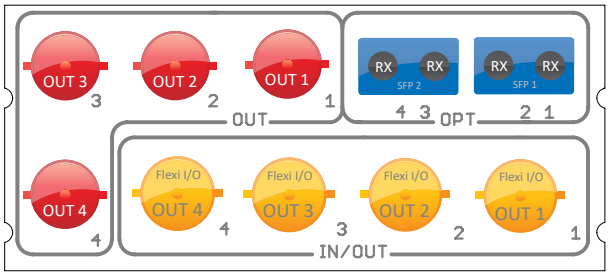
1 x Single + Dual RX SFP





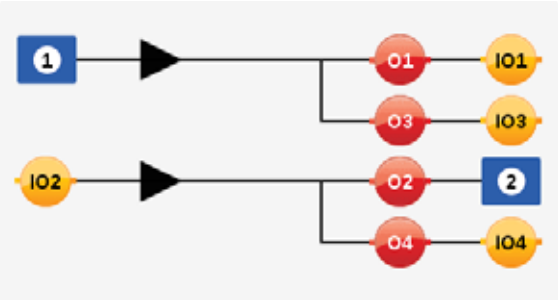
2 x Dual RX SFP

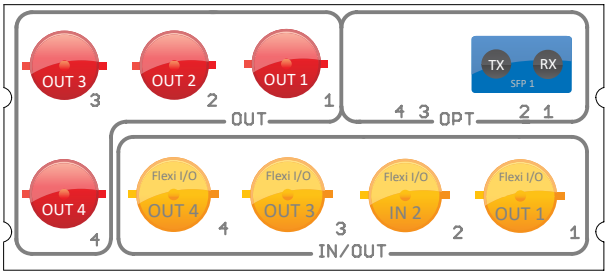




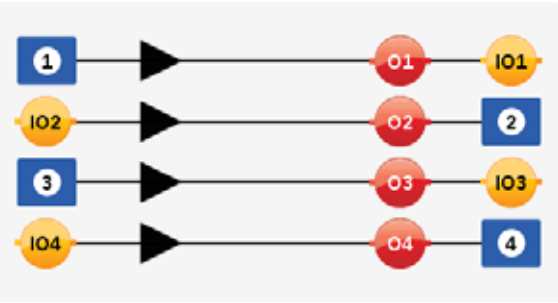
Transceiver

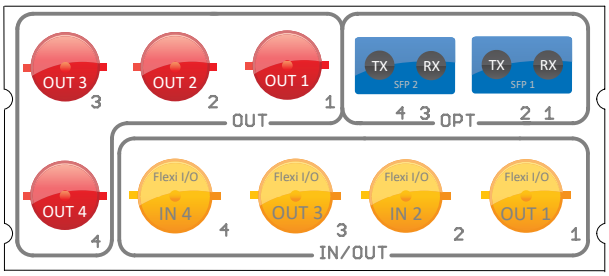
1 x Tranceiver SFP





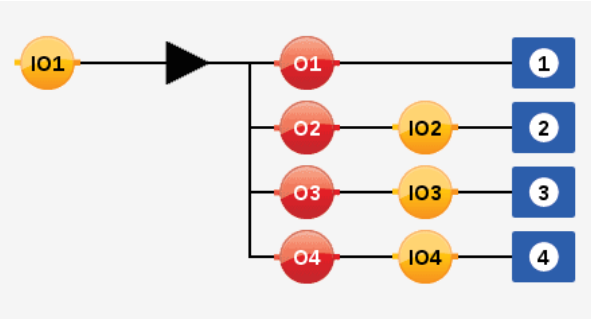
2 x Tranceiver SFP

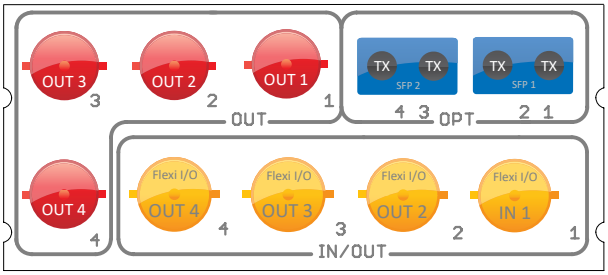




Optical distribution

2 x TX SFP

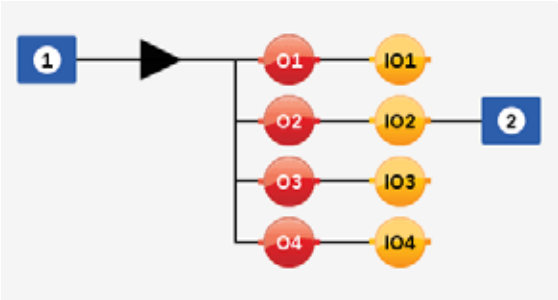


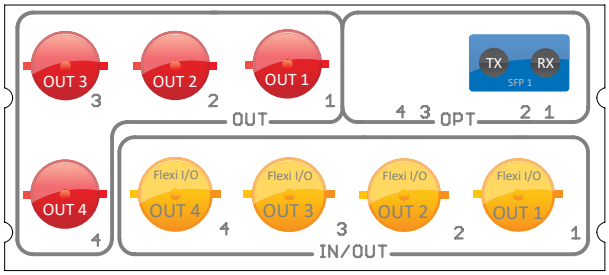


Format Flexible
Application Flexible
Lower cost of ownership

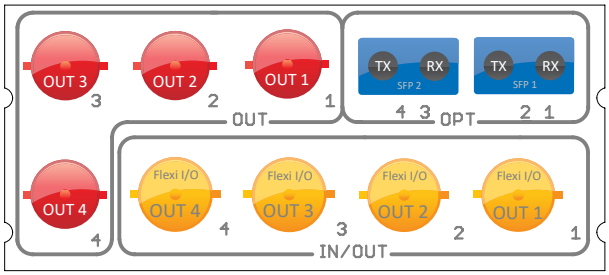
Transponder

D 1 x Tranceiver SFP



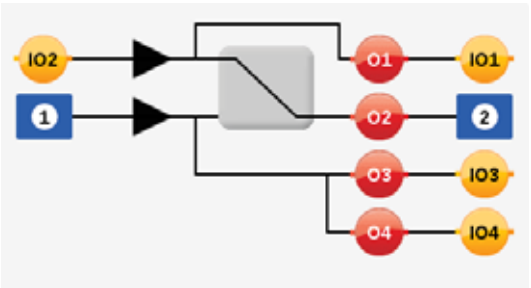


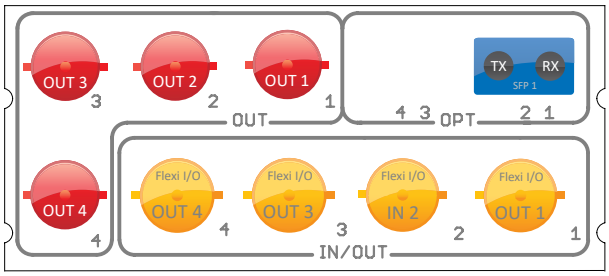
D 2 x Tranceiver SFP



Intelligent Add/Drop/Pass

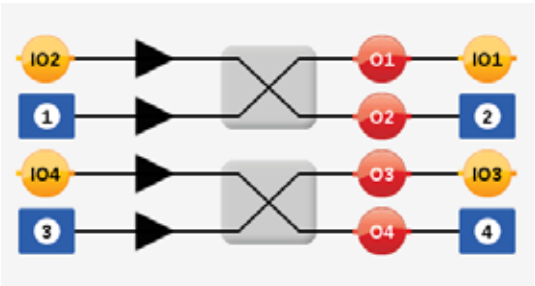
ADP 1 x Tranceiver SFP

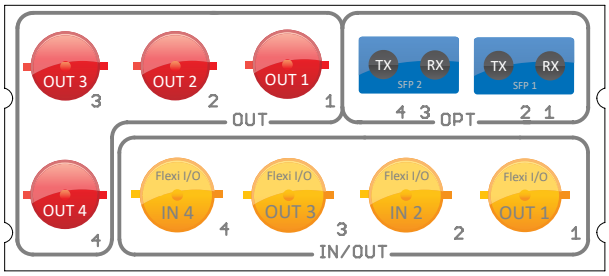




1 x Intelligent Add/Drop/Pass circuit

ADP 2 x Tranceiver SFP



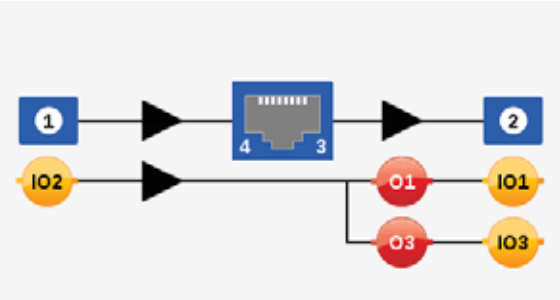


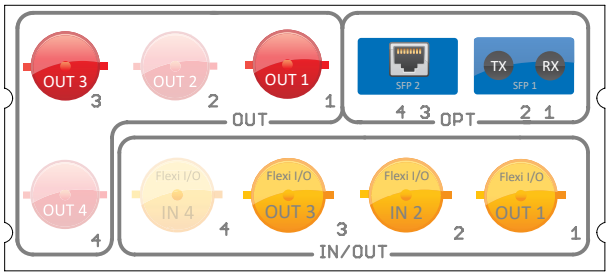
2 x Intelligent Add/Drop/Pass circuits

Ethernet

1 x Ethernet + 1 x tranceiver

E



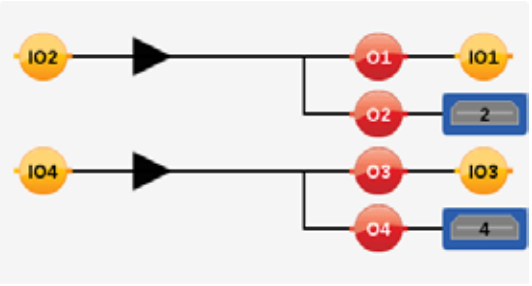


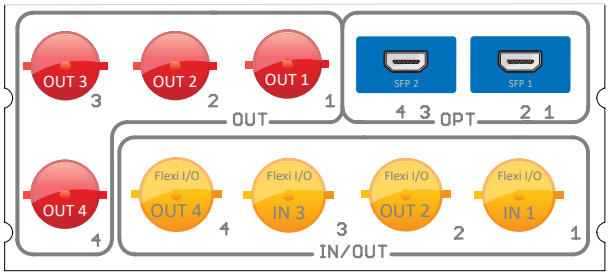
As the BNC connections are not used for the Ethernet functionality, they are programed via DIP 1 & 2 to provide basic 3G-SDI functions. 3G-SDI reclocking and Distribution DA functions

HDMI

Dual SDI to HDMI with SDI DA

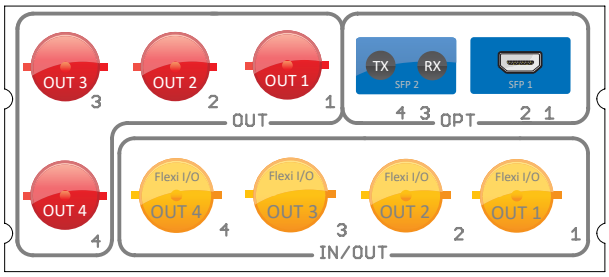
L





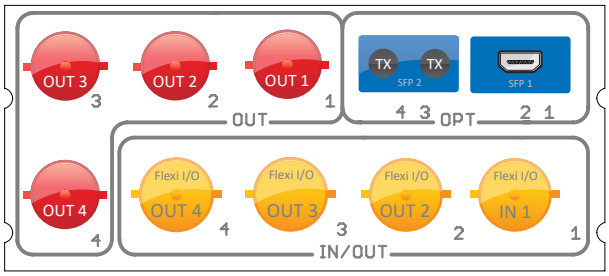
Optical transciever with HDMI output and SDI DA

D



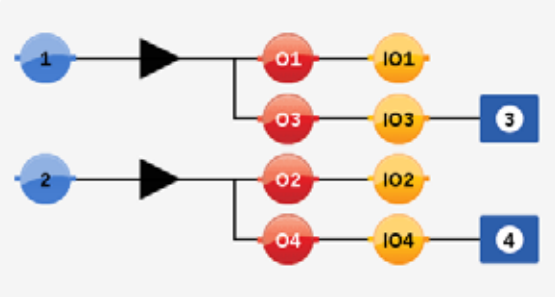
Optical transciever with HDMI output and SDI DA

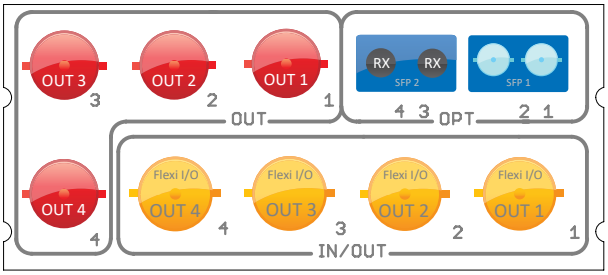
D



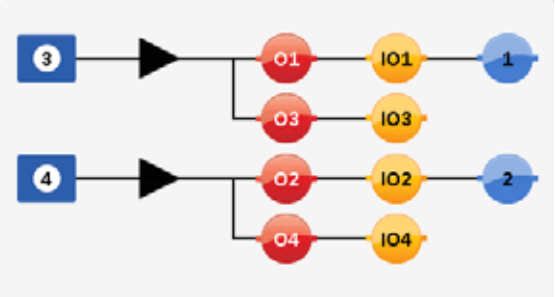
Analog Video

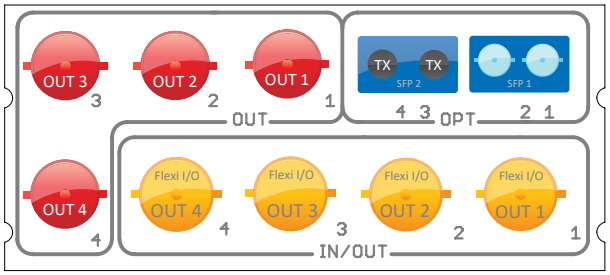
Dual Analog Video to Optical fiber with SDI conversion





Dual Optical fiber to SDI DA conversion with Analog Video output





For further information on other configurations please refer to the OC-4B-SDI manual.

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Your local representative:

Norwia as
Kilgata 12
N-3217 Sandefjord
Norway

Sales
p. +47 33 45 20 90
e. info@norwia.no
w. norwia.no

norwia

norwia.no

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