



CWDM-18

18 channel CWDM mux/demux

User manual

Rev. B

A large, thick green ring is positioned in the bottom right corner of the page, partially overlapping the contact information.

Nevion
Nordre Kullerød 1
3241 Sandefjord
Norway
Tel: +47 33 48 99 99
nevion.com

Neveion Support

Neveion Europe

P.O. Box 1020
3204 Sandefjord, Norway
Support phone 1: +47 33 48 99 97
Support phone 2: +47 90 60 99 99

Neveion USA

1600 Emerson Avenue
Oxnard, CA 93033, USA
Toll free North America: (866) 515-0811
Outside North America: +1 (805) 247-8560

E-mail: support@neveion.com

See <http://www.neveion.com/support/> for service hours for customer support globally.

Revision history

Current revision of this document is the uppermost in the table below.

Rev.	Repl.	Date	Sign	Change description
B	A	2015-06-10	MR	Added figure 2.
A	0	2015-05-25	MB	Template update; DoC removed
0	-	2011-03-24	MR	Initial version

Contents

- Revision history 2
- 1 Product overview 4
- 2 Specifications 5
 - 2.1 Optical specifications 5
- 3 Mounting the CWDM module into frame 6
- 4 Laser safety precautions 9
- General environmental requirements for Nevion equipment 10
- Product Warranty 11
- Appendix A – Materials declaration and recycling information 12
 - A.1 Materials declaration 12
 - A.2 Recycling information 12

1 Product overview

The Flashlink CWDM (Coarse Wavelength Division Multiplexing) system is based on an all-optical module for multiplexing and demultiplexing 18 CWDM wavelengths according to ITU-T G.694.2. The unit works similarly in both directions and can be used as mux as well as demux.

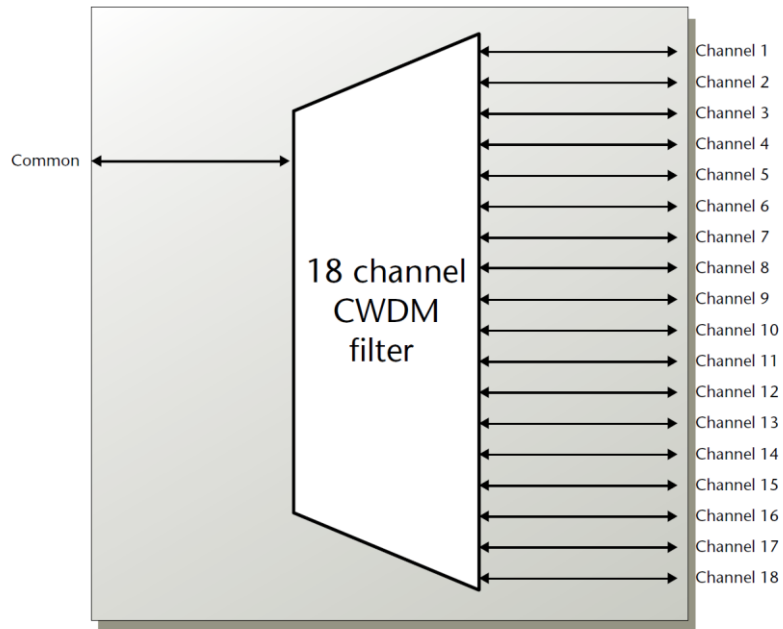


Figure 1. CWDM filter scheme.

Shutters at upper row are due to high signal strength at "common" port

Common	Not used	1271nm	1291nm
1311nm	1331nm	1351nm	1371nm
1391nm	1411nm	1431nm	1451nm
1471nm	1491nm	1511nm	1531nm
1551nm	1571nm	1591nm	1611nm



Figure 2. Backplane layout.

2 Specifications

2.1 Optical specifications

Number of channels	18
Available wavelengths (nm)	1271, 1291, 1311, 1331, 1351, 1371, 1391, 1411, 1431, 1451, 1471, 1491, 1511, 1531, 1551, 1571, 1591, 1611
Connector	LC/UPC
Insertion loss (end to end, including connectors)	4dB typical 5.4dB max
Channel Spacing	20nm
Passband	13nm min
Transmission circuit fibre	9/125um single mode
Adjacent Channel Isolation	30dB min
Non-Adjacent Channel Isolation	40dB min
Directivity	45dB min
Connector Return loss	45dB min
Polarization depending loss	0.2dB max
Ripple in passband	0.5dB max
Operating Temperature	0 – 70 °C
Storage Temperature	-40 – 85 °C
Optical Power	300mW max

3 Mounting the CWDM module into frame

The CWDM filter must be mounted in a Flashlink sub rack. This is done from the rear. Do not use force when inserting the CWDM filter. The module's main board has a special design to utilize both card rails in the FL sub rack. In order to enter the lower rail before sliding the unit into its final position, please follow the method shown in the pictures below.

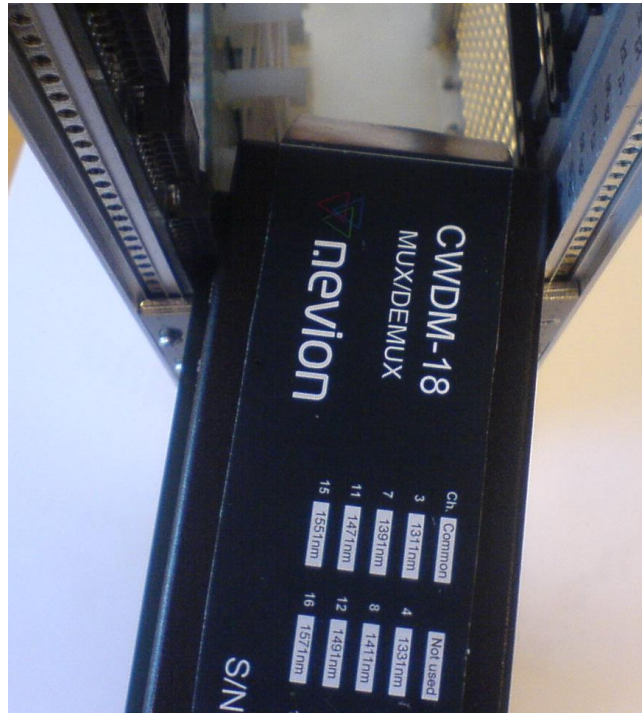


Figure 3.1. Enter the module with angle.

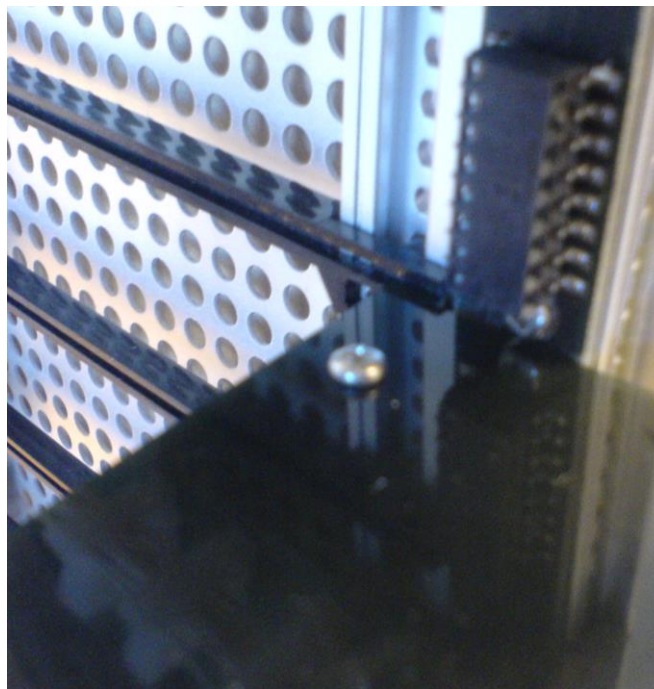


Figure 3.2. PCB tag inside the power bus PCB.

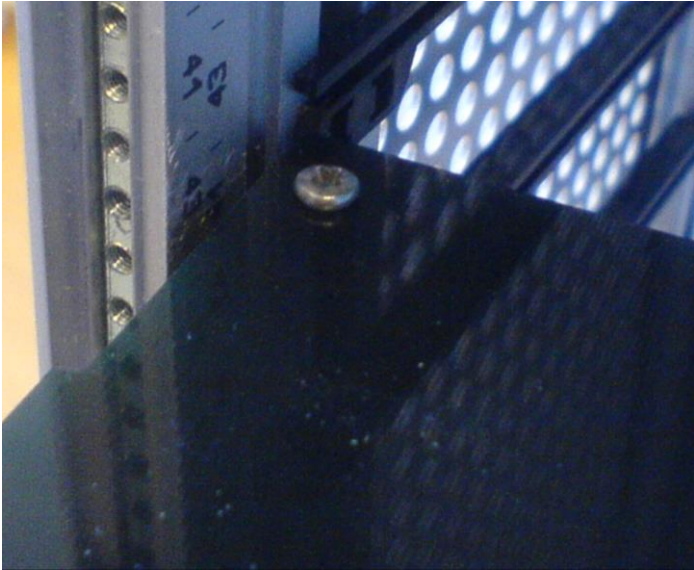


Figure 3.3. Opposite side of PCB tag.

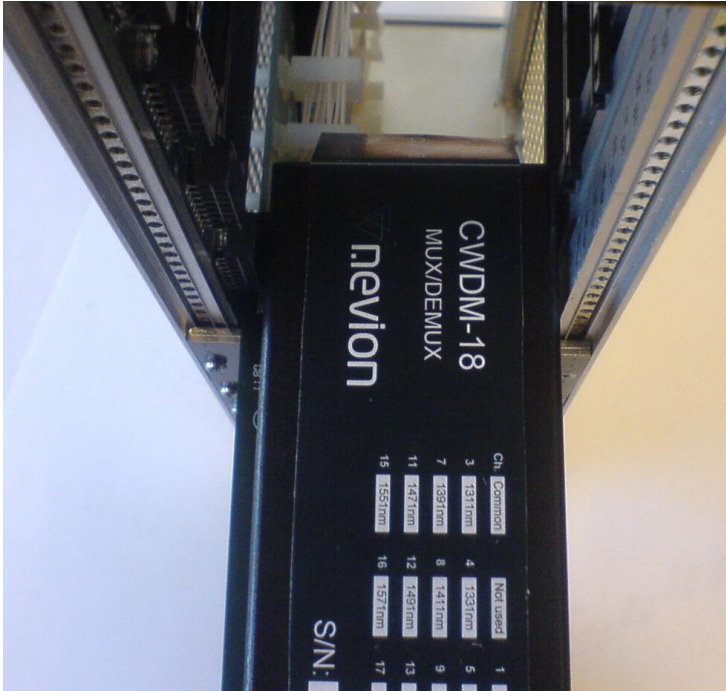


Figure 3.4. Adjust to normal position.

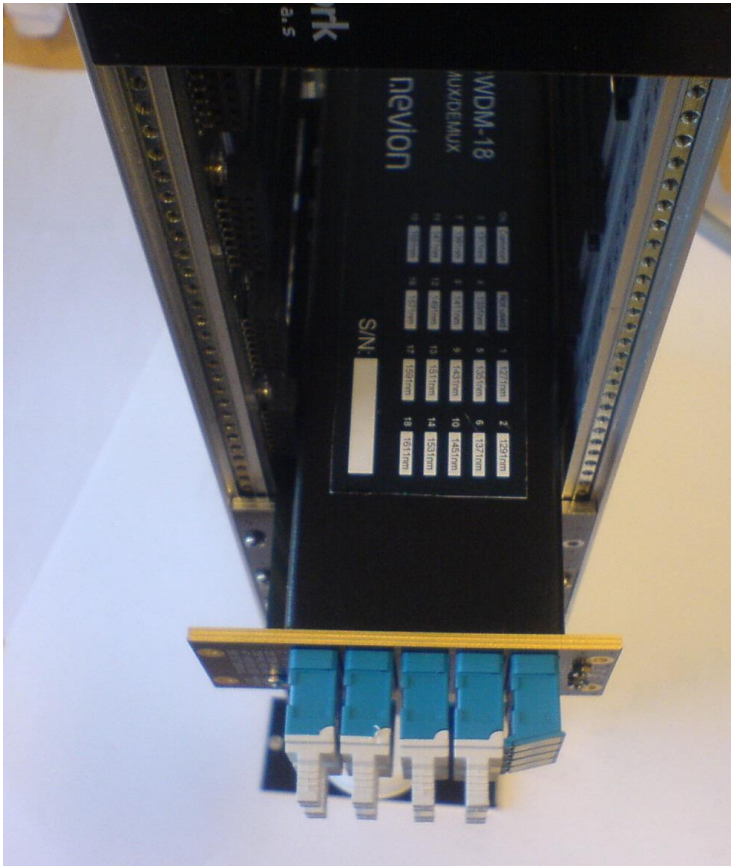


Figure 3.5. Slide the module to final position using both card rails.



Figure 4. Module mounted in frame

4 Laser safety precautions

These are guidelines to limit hazards from laser exposure.

All the available EO units in the Flashlink range include a laser.

Therefore this note on laser safety should be read thoroughly even though there is no laser onboard this product.

The lasers emit light at wave lengths between 1271 nm and 1611 nm. This means that the human eye cannot see the beam, and the blink reflex cannot protect the eye. (The human eye can see light between 400 nm to 700 nm).

A laser beam can be harmful to the human eye (depending on laser power and exposure time). Therefore:

Be careful when connecting / disconnecting fibre pigtails (ends).

Never look directly into the pigtail of the laser/fibre.

Never use microscopes, magnifying glasses or eye loupes to look into a fibre end.

Use laser safety goggles blocking light between 1271 nm and at 1611 nm

Instruments exist to verify light output power: Power meters, IR-cards etc.

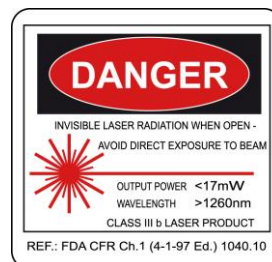
Flashlink features:

The FR-2RU-10-2 is classified as Class 1 laser product according to EN 60 825-1:94/A11:96, and CFR Ch1 (1997) Part 1040.10.

If the front panel is removed, the FR-2RU-10-2 is classified as Class 1 laser product according to EN 60 825-1:94/A11:96, and class IIIb according to CFR Ch1 (1997) Part 1040.10.

Maximum output power¹: 17 mW

Operating wavelengths: > 1260 nm



¹ Max power is for safety analysis only and does not represent device performance.

General environmental requirements for Nevion equipment

1. The equipment will meet the guaranteed performance specification under the following environmental conditions:
 - Operating room temperature range: 0°C to 50°C
 - Operating relative humidity range: <90% (non-condensing)

2. The equipment will operate without damage under the following environmental conditions:
 - Temperature range: -10°C to 60°C
 - Relative humidity range: <95% (non-condensing)

Product Warranty

The warranty terms and conditions for the product(s) covered by this manual follow the General Sales Conditions by Nevion, which are available on the company web site:

www.nevion.com

Appendix A – Materials declaration and recycling information

A.1 Materials declaration

For product sold into China after 1st March 2007, we comply with the “Administrative Measure on the Control of Pollution by Electronic Information Products”. In the first stage of this legislation, content of six hazardous materials has to be declared. The table below shows the required information.

組成名稱 Part Name	Toxic or hazardous substances and elements					
	鉛 Lead (Pb)	汞 Mercury (Hg)	鎘 Cadmium (Cd)	六价铬 Hexavalent Chromium (Cr(VI))	多溴联苯 Polybrominated biphenyls (PBB)	多溴二苯醚 Polybrominated diphenyl ethers (PBDE)
CWDM-18	○	○	○	○	○	○
<p>O: Indicates that this toxic or hazardous substance contained in all of the homogeneous materials for this part is below the limit requirement in SJ/T11363-2006.</p> <p>X: Indicates that this toxic or hazardous substance contained in at least one of the homogeneous materials used for this part is above the limit requirement in SJ/T11363-2006.</p>						

This is indicated by the product marking:



A.2 Recycling information

Nevion provides assistance to customers and recyclers through our web site <http://www.nevion.com/>. Please contact Nevion’s Customer Support for assistance with recycling if this site does not show the information you require.

Where it is not possible to return the product to Nevion or its agents for recycling, the following general information may be of assistance:

- Before attempting disassembly, ensure the product is completely disconnected from power and signal connections.
- All major parts are marked or labeled to show their material content.
- Depending on the date of manufacture, this product may contain lead in solder.
- Some circuit boards may contain battery-backed memory devices.