



# 10G-TR-XFP

Optical to optical 10Gbps transponder

## User manual

Rev. A

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## Revision history

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

Rev.	Repl.	Date	Sign	Change description
A	-	2015-09-29	AD	Initial document

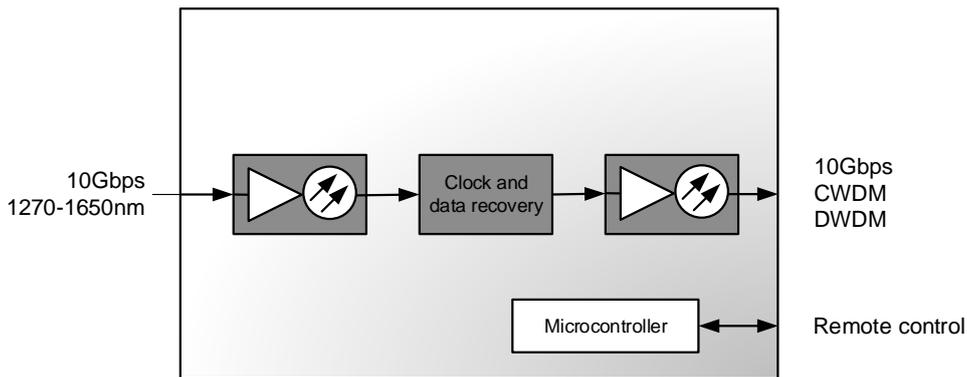
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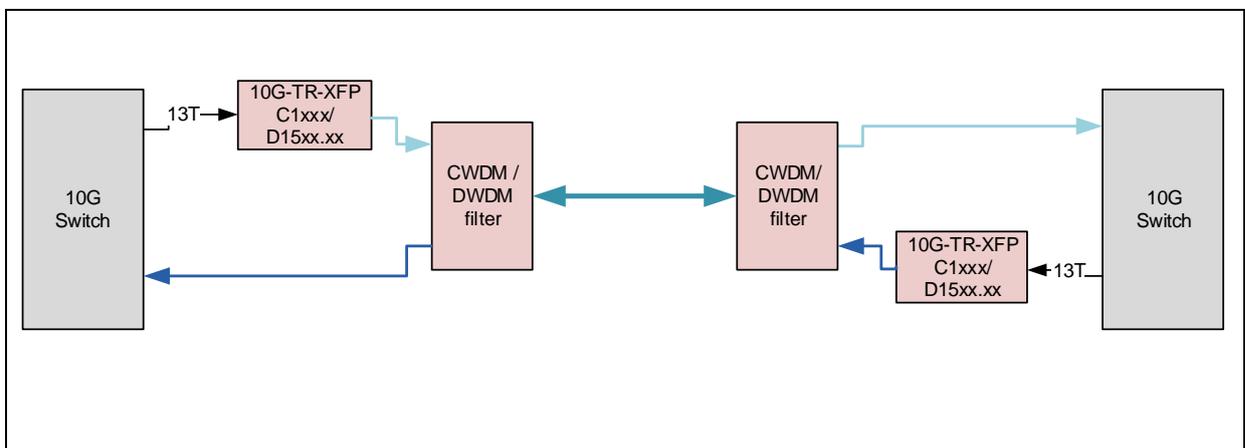
# 1 Product overview

The 10G-TR-XFP receives, re-clocks and retransmit a 10G optical signal. The product uses XFPs for optical interfaces and thru those the 10G-TR-XFP supports both CWDM (18 channels) and DWDM (40 channels), enabling wavelength conversion. The distance relates to obtainable maximum distance given the correct type of fiber. The module is monitored and controlled over RS422 by Multicon Gyda, enabling SNMP support. The module can also be controlled thru DIP switches on the card, and 4 LEDs will indicate the status of the module.



**Figure 1: Block diagram of the 10G-TR-XFP**

The figure below shows a typical setup for adding 10G switches to an optical Flashlink network. Switches already having CWDM/DWDM wavelengths can be added to a Flashlink network, without the use of the 10G-TR, but the 10G-TR also brings the optical link into the management system of the Flashlink network.



**Figure 2: This figure shows a typical setup for wavelength conversion**

## 2 Specifications

### 2.1 General

Power	+5V DC / 3W, max
Control	DIP configuration and SNMP monitoring
Temperature range	0 to +40 °C
Optical transport distance	See manual for installed XFP

### 2.1 SUPPORTED STANDARDS

10GBASE-ER/EW 10G Ethernet,  
1200-SM-LL-L 10G Fiber Channel  
SONET OC-192 IR-2  
SDH STM S-64.2b  
SONET OC-192 IR-3  
SDH STM S-64.3b  
ITU-T G.709

### 2.2 OPTICAL INPUT

Number of inputs	1
Connectors	SC/UPC
Rx Sensitivity	See datasheet for installed XFP
Overload	See datasheet for installed XFP

### 2.3 OPTICAL OUTPUT

Number of outputs	1
Connector	SC/UPC
Tx optical power	See datasheet for installed XFP
Optical wavelengths	See datasheet for installed XFP

### 3 Configuration

The correct configuration can either be set with a DIP switch or with the GYDA Control System. The layout of 10G-TR-XFP is shown in the drawing below with the DIP switch to the upper left position.

Switch #	Label	Function, DIP = ON	Function, DIP = OFF	Comment
1	1	Laser enable	Laser disable	
2	2			n/a
3	3			n/a
4	4			n/a
5	5			n/a
6	6			n/a
7	7			n/a
8	OVR	Override GYDA control. Configuration with DIP switch	GYDA control. Configuration with GYDA	Select configuration from GYDA

All DIP switches are off when pointing towards the release handle.



#### 10Gbps Transponder

Card label

Locate card
 sec

Firmware upgrade
Upload file: None
Upload

Laser

 On
  Off

Alarm	Lower limit	Upper limit	Alarm		SNMP trap	
Laser			<input checked="" type="radio"/> Normal	<input type="radio"/> Ignore	<input type="radio"/> Send	<input checked="" type="radio"/> Ignore
Optical input			<input checked="" type="radio"/> Normal	<input type="radio"/> Ignore	<input type="radio"/> Send	<input checked="" type="radio"/> Ignore
Voltage (5V)	4500 mV	5500 mV	<input checked="" type="radio"/> Normal	<input type="radio"/> Ignore	<input type="radio"/> Send	<input checked="" type="radio"/> Ignore
Voltage (3.3V)	3000 mV	3600 mV	<input checked="" type="radio"/> Normal	<input type="radio"/> Ignore	<input type="radio"/> Send	<input checked="" type="radio"/> Ignore
Reclocker			<input checked="" type="radio"/> Normal	<input type="radio"/> Ignore	<input type="radio"/> Send	<input checked="" type="radio"/> Ignore
Laser temperature	20 C	60 C	<input checked="" type="radio"/> Normal	<input type="radio"/> Ignore	<input type="radio"/> Send	<input checked="" type="radio"/> Ignore

Card version

hw	1.0
lib	1.2.0
serial	0000000000000000
sw	1.0.0

Figure 3: Multicon GYDA System Controller settings (optional)

## 4 Connections



Figure 4: Connector module for 10G-TR

Terminal	Function
OPT2	Optical output
OPT1	Optical input

### 4.1 Mounting the connector module

The details of how the connector module is mounted, is found in the user manual for the sub-rack frame FR-2RU-10-2.

This manual is also available from our web site:

<http://www.nevion.com/>.

## 5 Operation

The status of the module can be monitored in two ways.

1. Multicon GYDA System Controller (optional).
2. LED's at the front of the sub-rack.

The LED's are mounted on the module itself, whereas the GYDA System Controller is a separate module giving detailed information on the card status.

### 5.1 Front panel – Status monitoring

The status of the module can be easily monitored visually by the LED's at the front of the module. The LEDs are visible through the front panel as shown in the figure below.

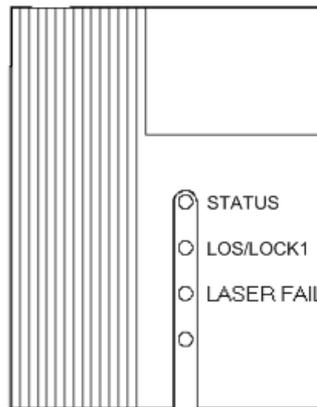


Figure 5: The 10G-TR has 3 LED's each showing a status.

Diode \ State	Red LED	Yellow LED	Green LED	No light
<b>Status</b>	Module is faulty, or module is initializing.	N/A	Module is OK Module power is OK	Module has no power
<b>LOS/LOCK1</b>	No input signal on input	Channel is not in lock or unsupported format.	Channel is in lock and supported format.	N/A
<b>LASER FAIL</b>	Laser is faulty or turned off by DIP or control system	N/A	Laser is turned on	N/A

Table 1: LED states and what they mean

## 5.2 Multicon Gyda

With the optional Multicon GYDA System Controller the module can be monitored for multiple alarms such as signal lock/loss etc.



### 10Gbps Transponder

Laser	On	1370nm	4.0dBm	CWDM
Optical input	Loss of signal			
Reclocker	Loss of lock			
Laser temperature	42.8 C			

Alarms		
Optical input	ALARM	<input type="button" value="Acknowledge"/>
Reclocker	ALARM	<input type="button" value="Acknowledge"/>
Acknowledge all: 2 alarms	COMMON	<input type="button" value="Ack all"/>

Figure 6: info page example of 10G-TR-XFP.

## **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 40°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 55°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 Nevia, which are available on the company web site:

[www.nevia.com](http://www.nevia.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)
10G-TR-XFP	○	○	○	○	○	○
<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.