

Muxponders

Muxponder 5800

MuxPonders enable more efficient use of the optical WDM channels via electrical TDM multiplexing of the client signals. 5800 use pluggable transceivers (SFP's) on both client and line interfaces enabling configurations that exact match current and future needs.

The 5800 can be configured in three different modes of operation. This configuration can be done through the management interface of th NMB 6003 Network Management board. The three different modes are described below.

5800 supports both performance monitoring and utilization. The 5800 is capable to display performance monitoring data on the line and client ports, which is automatically started at power on. The card will monitor utilization and block errors. Block error consists of CRC and 8B/10B errors.

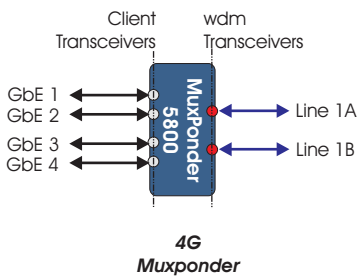


580001
MuxPonder

TS-Series is a versatile platform with modularity both in channel count and transmission reach. It is scalable up to 16 CWDM channels and 38 C/DWDM channels by adding one or several channels at a time without any service downtime or impact on existing traffic.

The protocol transparent nature of TS-Series provides support for a wide range of services including Gigabit Ethernet, Fast Ethernet, SDH/SONET, Fibre Channel, FICON, ESCON, ETR etc.

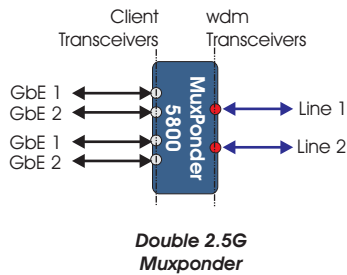
The protocols can be mixed between C/DWDM and even between TDM channels.



4G Muxponder Mode

In 4G Muxponder Mode the 5800 electrically multiplexes four GbE or 100Base-T signals onto one 4.25Gb/s wavelength channel. In this mode 4G capable transceivers are used, available for up to 70 km links (un-amplified) both in C- and DWDM versions.

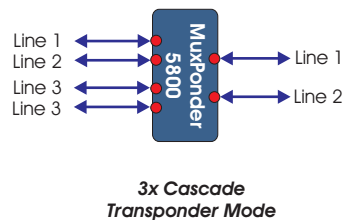
In this mode the 5800 also have in-built Line Protection feature that can be initiated via the management interface. Embedded Management Channel available on both line interfaces.



Double 2.5G Muxponder Mode

In Double 2.5G Muxponder Mode the 5800 electrically multiplexes two GbE or 100Base-T signals onto one 2.488Gb/s wavelength channel. In this mode, the 5800 can be seen as two separate Muxponders carrying two GbE or 100Base-T signals each.

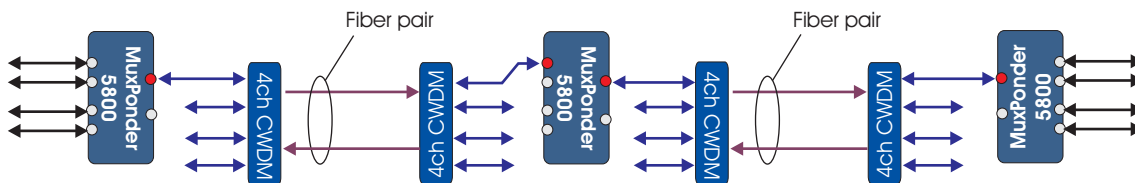
Embedded Management Channels available on both line interfaces.



Cascade Transponder Mode

The 5800 can also be configured into an 3-channel cascade transponder supporting both 2.488Gb/s and/or 4.25Gb/s line signals.

The figure below shows an example where 4x GbE channels are carried over a p-t-p network with an intermediate cascade node. All nodes can be remotely managed via the embedded management channels.



Point-to-point network with intermediate cascade node



TS-1100
9013 Chassis



TS-100
9002 Chassis

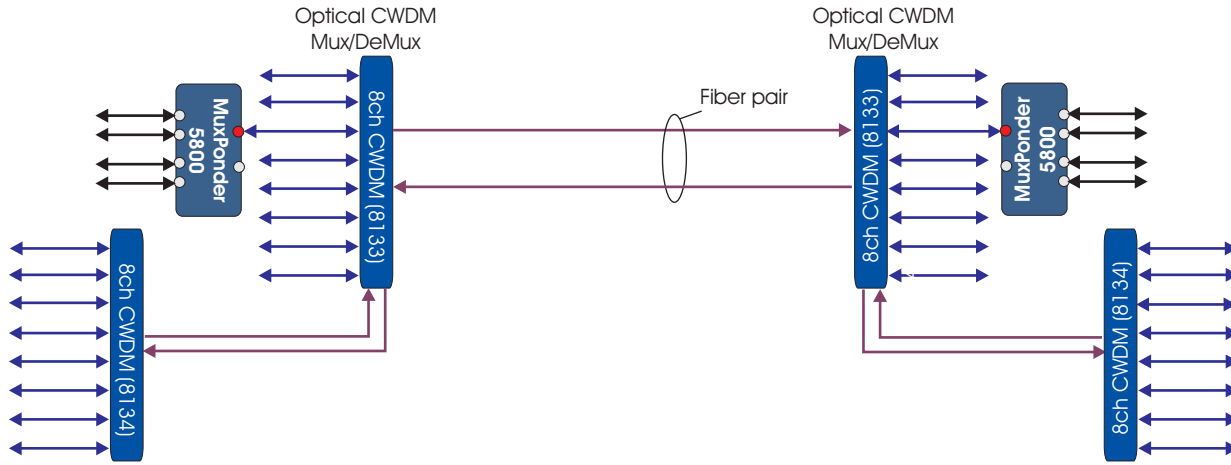


Dual MultiRate
Transponder
7720



4G FC
Transponder
7400





Up to 64 GbE channels on 16 CWDM channels

The 5800 Muxponder can be used to create CWDM network solutions for up to 64 GbE-channels using one fiber-pair. This configuration is shown in the figure above where up to 16x 5800 units can be connected to the 8ch Mux/DeMux units 8133 + 8134.

Networks with the 5800 muxponder are managed on a NE-basis via the Embedded Node Manager (ENM) and on network level via the Transmode Network Manager (TNM).

Technical Data

Parameter	Value	Comment
Power consumption	16W	Fully equipped
Timing	Internal oscillators generate both line and client transmit timing	full 3R
Performance monitoring	Laser output power, Laser bias, Received optical power, Utilization, Block error	
Embedded management channels	Yes	
Supported protocols	GbE	

Module type	Client SFP Transceivers			CWDM 2.5G SFP Transceivers			DWDM 2.5G SFP Transceivers
	"GbE SM"	"GbE MM"	"Electrical"	"40km"	"80km"	"100km"	"120km"
Line rate	1.25Gb/s	1.25Gb/s	1000Base-T 100Base-T	2.488Gb/s	2.488Gb/s	2.488Gb/s	2.488Gb/s
Connector type	LC	LC	RJ45	LC	LC	LC	LC
Input fiber type	SM	MM		SM	SM	SM	SM
Output wavelength (nm)	1260 - 1360	820 - 860	Electrical	1271 - 1611nm (G.694.2)			G.694.1 100GHz
Output power	-10dBm min -3dBm max	-9.5dBm min -3.5dBm max	-	0dBm min +5dBm max	0dBm min +5dBm max	0dBm min +5dBm max	0dBm min +4dBm max -9dBm
Overload	-3dBm	0dBm	-	0dBm	-9dBm	-9dBm	-9dBm
Rec sensitivity @ 10 ⁻¹² excl. Network Margin	-17dBm	-14dBm	-	-20dBm	-28dBm	-30dBm	-28dBm
Link budget excl Network Margin excl Disp. penalty	0 - 7dB	0 - 4.5dB	-	5 - 20dB	14 - 28dB	14 - 30dB	13 - 28dBm

Module type	CWDM 4G SFP Transceivers		DWDM 4G SFP Transceivers
	"40km"	"70km"	"70km"
Line rate	4.25Gb/s	4.25Gb/s	4.25Gb/s
Connector type	LC	LC	LC
Input fiber type	SM	SM	SM
Output wavelength (nm)	1271 - 1611nm (G.694.2)		G.694.1 100GHz
Output power	0m min +4dBm max	+1dBm min +4dBm max	0dBm min +2dBm max -7dBm
Overload	0dBm	0dBm	-7dBm
Rec sensitivity @ 10 ⁻¹² excl. Network Margin	-20dBm	-27dBm	-24dBm
Link budget excl Network Margin excl Disp. penalty	0 - 20dB	0 - 27dB	9 - 22dBm

The TS-Series Transponders provide a completely integrated solution to convert client signals to run over CWDM channels. There are several modules available covering a wide range of protocols from 100Mb/s to 10Gb/s. The TS-Series Transponders are bit rate transparent requiring no pre-configuration or on-site provisioning.



Muxponder 5400/03



10G Transponder 7900



Mux/DeMux & AD-filters

DS-5800 Rev D March 2008



The specifications and information within this document are subject to change without further notice. All statements, information and recommendations are believed to be accurate but are presented without warranty of any kind.