

CWDM Mux/DeMuxes

8133/01
8130/01, 8140/01
8131/01, 8141/01



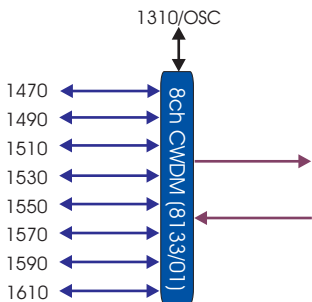
TS-Series is a versatile platform with modularity both in channel count and transmission reach. It is scalable up to 16 CWDM channels and 38 C/DWDM channels by adding one or several channels at a time without any service downtime or impact on existing traffic.

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.

The TS-series Transponders and Aggregators are used to generate the CWDM and DWDM wavelength channels with lowest cost and with the highest utilization of the available channel capacity. It is equally important to have a flexible solution for the addition and extraction of wavelengths to/from the fiber.

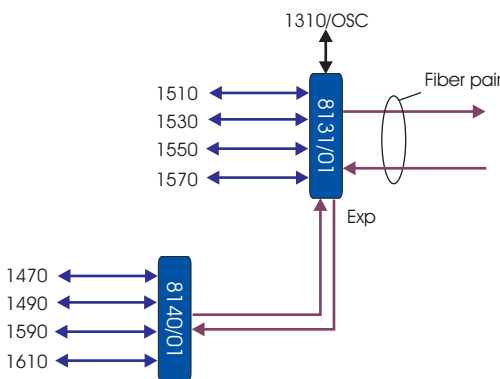
The TS-platform provides a menu of CWDM and DWDM Mux/DeMuxes and CWDM Add/Drop filters that can be combined to provide flexible and scalable networking solutions in point-to-point, bus and ring configurations. This Data



8133/01 is a 8ch Mux/DeMux unit covering the 8 CWDM channels in the 1470 - 1610nm wavelength area.

The unit has an 1310nm port that can be used in three ways:

- As an Optical Supervisory Channel (OSC)
- As an upgrade port for the **8134/01** unit that covers the additional 8 channels in the 1310-1450nm region.
- To carry legacy traffic operating at 1310nm.



8131/01 is a 4ch Mux/DeMux unit covering the 4 CWDM channels in the 1510 - 1570nm wavelength region. The unit has an 1310nm port for the OSC channel as well as an Express port that enables hitless upgrade from 4 to 8 wavelength channels. This can be achieved by combining the 8131/1 unit with the 4ch **8140/01** Mux/DeMux unit

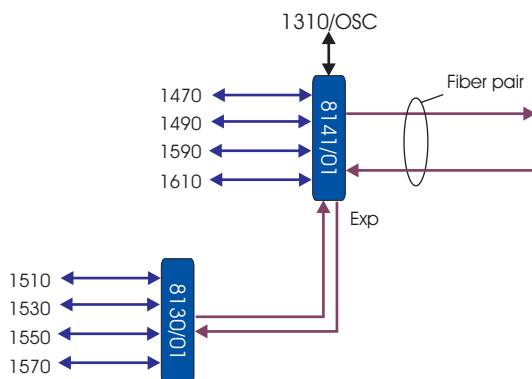
The 8040/1 unit is also a 4ch Mux/DeMux, that covers four wavelength channels in the 1470-1610nm region, but without the 1310nm and Express ports.

The combination enables a cost-effective entry point to a 4-channel CWDM networking with a hitless upgrade path to 8

The same combination can be achieved via the **8141/01** and **8130/01** units, as shown. The primary difference being the order in which the wavelengths are combined.

The 8141/01 covers same wavelengths as 8140/01, but with a 1310nm and Express port to provide the upgrade path to 8 channels.

Both combinations (8131/01 + 8140/01 and 8141/01 + 8130/01) give the same end result but give the user options in network architecture.



TS-1100
9013 Chassis



TS-100
9002 Chassis



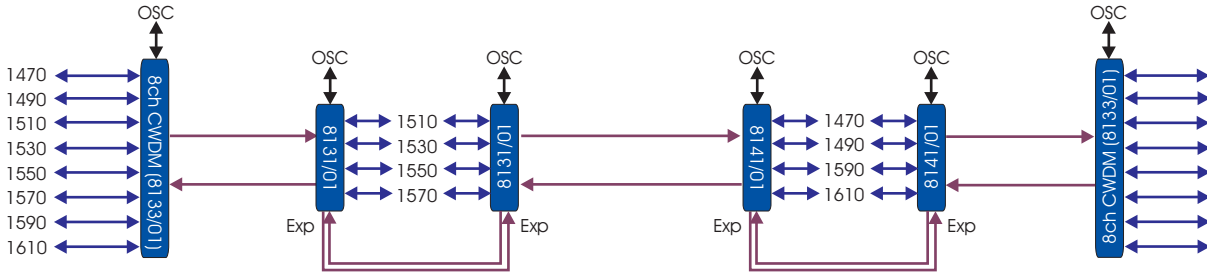
MultiRate
Transponder
7700



4G FC
Transponder
7400

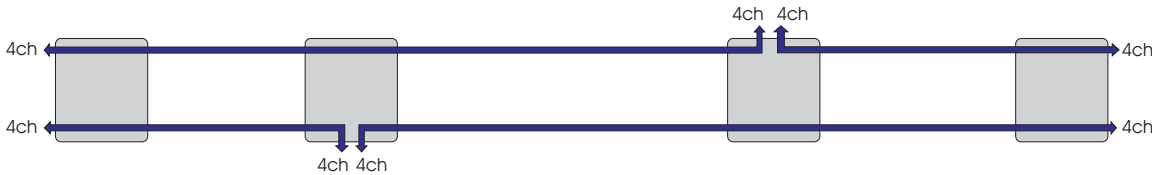


The TS-Series Transponders provide a completely integrated solution to convert client signals to run over C/DWDM channels. There are several modules available covering a wide range of protocols from 100Mb/s to 10Gb/s. The TS-Series Transponders are bit rate transparent requiring no pre-configuration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

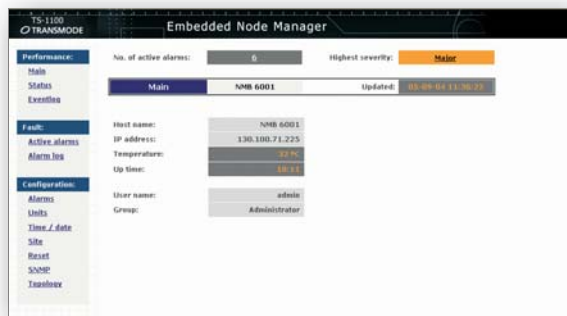


The different Mux/DeMux units can be combined to form a bus network as shown in the figure above. The 8133/01 unit is used at the end points to provide full 8ch connectivity. At the first intermediate node, the 8131/01 units are used to extract four channels (1510/1530/1550/1570). The other four channels are gassed through via the Express ports. At the second node these four channels are extracted using the 8141/01 units.

The figure below shows the traffic connectivity. The network can easily be converted to enable access of all 8 wavelength at all nodes by introducing 8140/01 units to the Express port in the first intermediate node, and using 8130/01 units in the same way at the second.



The Mux/DeMux units can be combined with Transponders and Aggregators and mounted in a common chassis with other plug in units. For example, a mixed DWDM/CWDM node can be housed in the 9013 chassis and managed on



The 9013 chassis can house both DWDM and CWDM units

The node manager TS ENM is accessed via a CLI or Graphical User Interface (GUI) using a standard web browser. See separate material for more information about Transponders, Aggregators and management solutions.

Technical Data

Module type / combination	Insertion Loss link level (Mux & DeMux)
8131/01	3.2dB
8140/01	2.1dB
8131/01 + 8140/01	4.0dB
8141/01	3.0dB
8130/01	2.1dB
8141/01 + 8130/01	3.6dB

Transmode patented IWDM technology entails "Protocol Recognition" and "Speed Watch" that introduces true Plug-and-Play simplicity to wdm networking by allowing the Transponders to recognize the attached signal and auto-provision the optimum parameters.

Speed Watch allows the operator to restrict the traffic flow based on a maximum allowable bit rate and/or protocol type.



Universal Aggregator 5400/03



10G Transponder 7900



Mux/DeMux & AD-filters

DS-TSM DU-C
Rev D March 2008

