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 Sheet

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

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.
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 glassed 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 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

<table>
<thead>
<tr>
<th>Module type / combination</th>
<th>Insertion Loss link level (Mux &amp; DeMux)</th>
</tr>
</thead>
<tbody>
<tr>
<td>8131/01</td>
<td>3.2dB</td>
</tr>
<tr>
<td>8140/01</td>
<td>2.1dB</td>
</tr>
<tr>
<td>8131/01 + 8140/01</td>
<td>4.0dB</td>
</tr>
<tr>
<td>8141/01</td>
<td>3.0dB</td>
</tr>
<tr>
<td>8130/01</td>
<td>2.1dB</td>
</tr>
<tr>
<td>8141/01 + 8130/01</td>
<td>3.6dB</td>
</tr>
</tbody>
</table>

Transmode patented WDM 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.