Boost capacity, services and savings with 100G

MPX-9110 and MPX-9105 Flexible 100G Solutions

Whether specializing in cloud and data center, mobile backhaul, content, or traditional services, network operators are constantly looking to grow their networks, increase bandwidth, and reduce cost of service delivery. Many are turning to the advanced capabilities of 100G networking to optimize existing infrastructure and deliver new high-value services.

Optelian’s MPX-9110 and MPX-9105 flexible 100G solutions provide the comprehensive capabilities to dramatically boost network capacity while reducing cost per bit. Configurable as a muxponder or transponder, the MPX-9110/9105 can aggregate and transport any mix of 10, 40, and 100 Gb/s services over a single 100 Gb/s OTN DWDM wavelength.
Optelian's MPX-9110 and MPX-9105 flexible 100G solutions are purpose-built to address service delivery applications and DWDM network capacity enhancements. Configurable as either a muxponder or transponder, they can aggregate and transport any mix of 10 Gb/s, 40 Gb/s and 100 Gb/s services over a 100 Gb/s OTN connection. Optelian delivers the most compact and efficient 100G implementation in the industry in a standalone 1RU platform mounted in standard 19- and 23-inch racks. Competitive solutions typically involve service cards installed in a mounting shelf that requires many RUs.

When deployed in place of 10 Gb/s wavelength connections, the MPX-9110/9105 solution enhances network return on investment (ROI) and defers the need for costly overbuilds to add needed capacity. Having the ability to address 40 Gb/s and 100 Gb/s service requests using existing networks opens new revenue opportunities.

The MPX-9110 and MPX-9105 are complementary products supporting the same interfaces and services. Each supports up to 20 dB of span loss without amplification, and more than 40 dB of loss with amplification. With optical fiber amplification in line, distances in excess of 1000 km are possible. Both use coherent transmission technology on a single tunable 100G wavelength, are compatible with 50-GHz and 100-GHz ITU grids, and are immune to impairments such as chromatic and polarization mode dispersion. The MPX-9105 is designed for lower cost metro applications where higher OSNR is acceptable.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>MPX-9105</th>
<th>MPX-9110</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allowable span loss without amplification</td>
<td>Up to 20 dB</td>
<td>Up to 20 dB</td>
</tr>
<tr>
<td>Allowable distance without amplification (Assumes 0.25 dB/km fiber loss)</td>
<td>Up to 80 km</td>
<td>Up to 80 km</td>
</tr>
<tr>
<td>Allowable span loss with optical preamplifier</td>
<td>Up to 37 dB</td>
<td>Up to 40 dB</td>
</tr>
<tr>
<td>Allowable distance with optical preamplifier (Assumes 0.25 dB/km fiber loss)</td>
<td>148 km</td>
<td>160 km</td>
</tr>
<tr>
<td>Number of cascaded 100-km spans (Noise-limited reach, assuming 0.25 dB/km fiber loss and amplification for each span)</td>
<td>Up to 15 (1500 km)</td>
<td>Up to 30 (3000 km)</td>
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</tbody>
</table>

Get more out of your network

Purpose-built to address DWDM network capacity enhancement and 10G/40G/100G service delivery applications, the MPX-9110/9105 solution provides immense network potential. It defers the need for costly overbuilds to increase capacity and delivers an enhanced network ROI compared to 10 Gb/s wavelength network approaches. The advanced capabilities of the MPX-9110/9105 pave the way for new service offerings, creating new revenue opportunities.

Full integration with 10 Gb/s networks

Supporting commonly deployed 10, 40, and 100 Gb/s protocols, the MPX-9110/9105 can be fully integrated into existing 10 Gb/s networks, lengthening their service delivery life with new service capabilities and capacity. Hybrid 10 Gb/s and 40 Gb/s aggregation capabilities eliminate stranded capacity by efficiently filling the available 100 Gb/s bandwidth. The MPX-9110/9105 uses DP-QPSK modulation with coherent detection and is fully compatible with existing 100- or 50-GHz spaced 10-Gb/s ROADM or fixed OADM networks.

Campus WAN

University Data Center

Connected Community Infrastructure

100Gλ

Nx 10G / 40G Interconnection

National Network GigaPOP
Streamline service delivery

4G LTE backhaul networks, web-based video-on-demand, and cloud-based IT strategies are driving operators to increase available service speeds from 1 Gb/s to 10 Gb/s. But addressing these service requirements over a traditional 10-Gb/s connection rapidly consumes network capacity.

Optelian’s MPX-9110/9105 flexible 100 Gb/s platform provides an optimal approach for delivering 10 Gb/s services across core network infrastructure by eliminating the requirement to utilize a single wavelength per service. Pre-deployed 100 Gb/s connectivity means 10 Gb/s services are brought online quickly and efficiently, enabling a tenfold increase in service capacity and revenue potential, enhancing customer satisfaction, minimizing operational effort, and accelerating time to revenue.

Address new high-capacity service requirements

While 10 Gb/s data center router-to-router interconnects and switch-to-server connectivity are well established, the future requirement for 40 Gb/s and 100 Gb/s connections—and the prevalence of distributed data center environments—means capacity upgrades are no longer limited to the data center itself; metro and long-haul networks must satisfy the need to provide more capacity as well. Optelian’s MPX-9110/9105 allows network operators to offer multiple 10G interconnect services over a single 100G wavelength, and, as server infrastructure in the data center moves to 40 GbE and 100 GbE, the MPX-9110/9105 provides a simple transition strategy to these higher rates, with no additional equipment expenditure and minimal operational effort.

Get more out of your existing network

For network operators, fiber is precious and budgets are constrained. The standard currency in today’s DWDM networks is 10 Gb/s for aggregation of lower-rate services or for private-line connectivity; existing 40-channel DWDM network infrastructure deployments may be approaching their limits, forcing expensive upgrades or overbuilds. More capacity is clearly needed, but the cost of replacing an entire network is usually out of the question.

100 Gb/s transmission technology can operate within an existing network designed for 10 Gb/s connections. The use of dual-polarization quadrature phase shift keying (DP-QPSK) modulation with coherent detection enables mixed signal transmission over existing 10 Gb/s network infrastructure, without the need for costly re-engineering.
Optelian's MPX-9110/9105 solution provides efficient 10 Gb/s and high-capacity 40 Gb/s, and 100 Gb/s service delivery over 100 Gb/s network connections, delivering a tenfold increase in the bandwidth carrying capacity of a single DWDM channel.

Even deploying the solution on just the last 5 or 10 channels of a 40-wavelength DWDM system can double or triple the capacity of a fully deployed 40x10 Gb/s network, extending its lifespan and revenue potential.

Optelian's MPX-9110/9105 flexible 100G platform provides comprehensive capabilities to address 100 Gb/s service delivery requirements through its compact, industry-leading 1 RU form factor. Configurable as either a muxponder or transponder, the MPX-9110 can aggregate and transport any mix of 10 Gb/s, 40 Gb/s, and 100 Gb/s services over a 100 Gb/s OTN connection. A tunable 100-Gb/s integrated line interface and a DP-QPSK implementation provides easy integration onto any available wavelength within existing 40- and 80-channel 10 Gb/s networks.