Enabling Seamless Transition to DWDM Access Networks

Case Study: Simple and Sophisticated Single Part Solutions for DWDM Network Transitions

Summary

Customer	• Cable Operator, Telecommunications and Mass Media
Challenges	• Managing multiple fixed-channel DWDM transceivers • Support both 1G and 10G data rates to provide an upgrade path to their end customers
Solution	• Custom Tunable DWDM Transceiver combined with sparing efficiency and reconfiguration capabilities of Integra's Smart Coder software
Result	• Optimized network serving multiple OEM platforms with ability to recode between 1G, 10G and across OEM platforms
Equipment Used	• Smart Coder with NEW Integra Tuner App • Integra's 1G-10G Tunable DWDM I-Temp SFP+ Transceiver

Simple and Sophisticated Single Part Solutions

There's been an industry-wide transition to DWDM based access networks for DAA type architectures due to fiber scarcity, and a challenge to simply procure, stock, and deploy multiple DWDM channels and provide upgrade paths to customers has presented itself in the face of this transition.

The Challenge:

One of our MSO customers were managing multiple fixed-channel DWDM transceivers for their own stock as well as that of their supplier. In addition, they wanted to be able to support both 1G and 10G data rates to provide an upgrade path to their end customers. To do so would usually require planning and stocking of approximately 80 different part numbers and include many steps in a complex process. So, they were searching for a simple, DWDM 1G tunable (120km) and 10G tunable (80km) single-part solution that covered the full C-band range of DWDM wavelengths including support of I-Temp and C-Temp operating conditions.

The Solution:

They brought their request to Integra Optics, and for approximately two months our engineers developed and tested in their network to create a custom solution. In the end, Integra developed a 1G-10G Tunable DWDM I-Temp SFP+ Transceiver -- a fully duplex, integrated fiber optic transceiver that provides a high-speed serial link at specified signaling rates. This transceiver was designed to enable operators of the DWDM network to significantly reduce sparing costs, improve operational efficiency, and turn up new customers or circuits more quickly than with conventional fixed-wavelength transceivers.

Rather than only accounting for the current situation, our engineers strategically prepared for highly probable future requirements. They leveraged the customized transceiver in conjunction with the sparing efficiency and reconfiguration capabilities of Integra's Smart Coder. The Smart Coder is a powerful device that grants network engineers and field techs the power to quickly reconfigure transceivers for any network hardware. The device is small enough to fit in a technician's "Uptime Kit", and it can save hours (or even days) by making Integra optics usable for any network hardware at a moment's notice.

This ensured the customer would enjoy an optimized network immediately while providing the flexibility to seamlessly add OEM platforms in the future with a simple tweaking of the optic. As a result, the custom optic not only serves multiple OEM platforms, but it's also future proof because it allows recoding between 1G, 10G, and across OEM platforms.

Customer Results:

Our MSO customer enjoyed a successful network deployment. Their technicians are much more efficient now because rather than forecasting, ordering, stocking, managing and deploying 80 different parts, they deal with just one part. Additionally, the offline tuner capabilities provide technicians in the field the ability to select the desired DWDM channel during field deployments on the fly. Thanks to Integra's single part solution, they're already adding another OEM to their operations.