

AGILECORE™ tunable photonic gateway

TPG 1000

The AgileCore focus is to deliver capital savings and scalable backbone infrastructure while simplifying and expediting network operations. Enabling optical pass-through at OADM and multi-directional nodes with automated point to any point wavelength turn up is essential to building the next generation core. The TPG 1000 provides Colorless DWDM™ full-spectrum tunable lasers and filters that enable connection flexibility across the agile transparent network. Tunability over the entire spectrum allows deployment of thin pools of generic equipment at the network edge, ahead of service requests, eliminating the expense and delays associated with traditional wavelength-specific capacity pre-planning and deployment. Transceiver, regeneration and DWDM filter deployments can now be decoupled from wavelength engineering activities, resulting in rapid, remote turn up of wavelengths anywhere in the optical core.

GATEWAY TO THE AUTOMATED CORE

Scaling to a multi-terabit backbone network requires an architecture that reduces not only capital cost, but also operational and opportunity cost. Full-spectrum wavelength tunability in lasers and filters provides benefits beyond simple inventory reduction. Combining tunable components and intelligent optical signaling technologies allows service providers to minimize network

cost (capital and operational). Wavelength activation consists of remotely tuning endpoint and, where necessary, mid-point resources to unused wavelengths. Allowing remote wavelength turn up between any points across the core network accelerates connection set-up and reconfiguration, and reduces overall time to revenue.

Decoupling Provisioning from Engineering

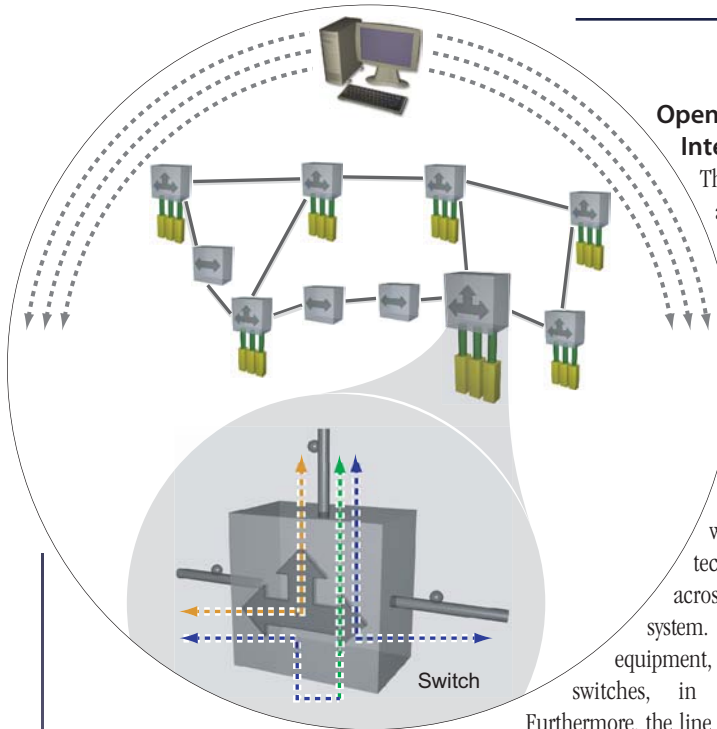
Tunable transceivers connected to tunable add/drop ports can be dynamically configured as regeneration or wavelength conversion points along individual connection paths. Combining this with the networked reach provided by the DLS 1000 maximizes network efficiency by reducing pre-planning, engineering and over-provisioned resources. The flexibility of provisioning without wavelength pre-planning eliminates stranded capacity caused by building to a forecast. Carriers can now build to order, reducing forecast errors and increasing speed to revenue. While some amount of over-provisioning is needed to ensure resources are available for rapid addition of capacity, provisioned resources can be assigned dynamically to adapt to differences between forecasts and orders.

KEY FEATURES

- Colorless DWDM™ lasers and filters makes any wavelength available to any port at Switch, OADM and Terminal sites
- Modular structure provides incremental nodal capacity increases; sites grow according to add/drop, not consumed line capacity
- 2.5, 10 & 40 Gb/s open interfaces allow full SONET and 10 Gigabit Ethernet overhead transparency
- Universal transceiver card simplifies operations by providing transceiver wavelength conversion or regenerator applications with a single orderable card inventory
- Client interface plug-in on universal transceiver allows application-specific selection of client-side optics (VSR, SR, IR)
- Advanced optical monitoring and control capabilities enable non-intrusive optical performance monitoring, optical layer fault sectionalization, and wavelength assurance



INNOVANCE NETWORKS



AGILECORE™ TUNABLE PHOTONIC GATEWAY (TPG)

Open Multi-Services Interfaces

The on/off ramps to the agile photonic layer are accommodated with digitally transparent transceivers. Using digital wrapper technology with enhanced forward-error correction enables a mix of sub-wavelength technology platforms across the same line system. This includes SONET equipment, routers and electrical switches, in any combination. Furthermore, the line system architecture is designed to accommodate various bit-rates for increased efficiency as client bit-rates evolve, extending the benefits of transparency and agility to any client platform.

Enhancing Visibility of the Photonic Network

Colorless DWDM™ allows the ability to perform non-intrusive digital fault sectionalization and performance monitoring along an end-to-end connection path. Since the AgileCore solution introduces

arbitrary length paths networked over transparent midpoints, the ability to view detailed performance characteristics at these midpoints is critical. Tunability, combined with the TPX 1000 and DLS 1000 architectures, provides remote access to digital performance data based on bit error rate (BER) and Q values.

The AgileCore Tunable Photonic Gateway helps service providers to automate the core, providing rapid bandwidth delivery and unparalleled savings, scalability and operational simplification.

INNOVANCE NETWORKS
delivers a portfolio of agile, intelligent photonic networking solutions that enable service providers to build profitable, next-generation core optical networks. The Innovance Networks solution offers 'Just-in-Time' capacity and accelerates the deployment of services through the core, simplifies the network and reduces the cost of operations, while addressing the network scalability challenges beyond providing raw capacity.

APPLICATIONS

- TUNABLE GATEWAY:
- Colorless DWDM™ networking at any location (Terminal, OADM or Transparent Switch sites)

CONFIGURATIONS

- PHOTONIC GATEWAY:
- Generic, modular wavelength access ports with universal transceivers and plug-in client modules.

SYSTEM SPECIFICATIONS

- CAPACITY:
- >Termination: up to 100 wavelengths per line port

- WAVELENGTH SPACING:
- 50GHz ITU-T compatible, 100 channels @ 10G 50 channels @ 40G
- LINE INTERFACES:
- 10/40G Gb/s DWDM
- CLIENT INTERFACES:
- SONET OC-192/SDH STM-64 (IR, SR, VSR)
 - SONET OC-48/SDH STM-16 (IR, SR)
 - 40G SR
 - 10 GbE
- OPERATIONS INTERFACE:
- TL-1 (Bellcore)
- CRAFT INTERFACE:
- Window™ GUI using 100Base-T
- DIMENSIONS:
- H: 455mm; W: 496mm; D: 300mm; sub-rack mountable in 23" NEBS or 600mm ETSI rack

- CAPACITY DENSITY
- Up to 640 Gb/s in a single rack
- ENVIRONMENTAL:
- Temperature: 5°C to 40°C
 - Humidity: 5% to 85%
- POWER CONSUMPTION:
- Service Terminal / DWDM: 2650W per 32I rack



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