

Coriant Groove™ G30 DCI Platform

Innovative Data Center Connectivity

The Coriant Groove™ G30 DCI Platform is an innovative stackable transport solution purpose-built for cloud and data center networks. Delivering 3.2 terabits of capacity in a compact 1RU form factor, the Coriant Groove™ G30 DCI Solution simplifies provisioning of 10G, 40G, and 100G Wide Area Network (WAN) cloud connectivity services for metro, regional, and long-haul DCI applications. Designed to meet the scalability requirements of today's cloud and data center networks, the Coriant Groove™ G30 DCI Solution features the industry's most compelling pay-as-you-grow approach that enables the lowest initial costs, reduced equipment sparing costs, and cost-effective scalability.

The Coriant Groove™ G30 DCI Solution achieves its leading performance advantage by leveraging the latest innovations in high speed optics, photonic/electrical integration, and silicon photonics. Modeled after proven data center operations practices, the user interfaces and management tools of the Coriant Groove™ G30 DCI Platform feature simple task-based operational procedures and server-like ease of use. Purpose-built to cost effectively power a better end-user cloud experience and manage growing data traffic volumes to and between data centers, the Coriant Groove™ G30 DCI Platform sets new benchmarks in DCI-optimized network performance.

FEATURING MODULARITY AS A BUSINESS ENABLER

The innovative three-tier modular concept of the Coriant Groove™ G30 DCI Platform provides a number of competitive advantages to DCI and telecom network planners and architects. The Coriant Groove™ G30 DCI Platform supports up to four field replaceable, individually configurable and hot-swappable 400G sleds (or field replaceable units). Each 400G sled can be equipped with up to two 200G line side interfaces (CFP2-ACO) and up to four 100G client side interfaces (QSFP28). Another 400G sled variant supporting a mix of 10G, 40G, and 100G clients is also available. The sleds and the pluggable interfaces can be purchased and deployed one at a time as required.



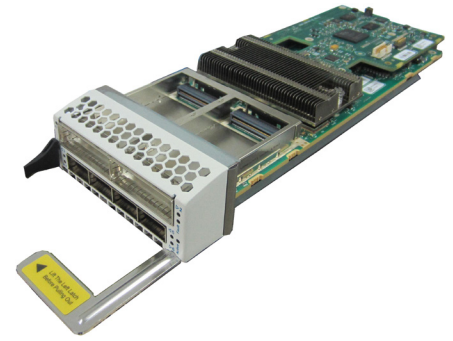
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BENEFITS OF THE CORIANT GROOVE™ G30 DCI PLATFORM

- **Supports** 1.6 Tbps client and 1.6 Tbps line traffic in compact 1RU for the industry's highest density and most scalable DCI platform that cost effectively scales DC transport capacity up to 25.6 Tbps per fiber and up to 134 Tbps per 42-inch rack
- **Offers** leading energy efficiency due to ultra-low power consumption of 45W per 100G by employing the industry's first dual-carrier 400G coherent DSP and recent advancements in photonic integration
- **Enables** the lowest first cost 10G, 40G, and 100G services with an innovative three-tier modular concept for capacity growth that includes differentiated pay-as-you-grow service planning and rollout and supports the lowest cost for onsite passive and active sparing
- **Delivers** a truly open platform free of proprietary software and hardware components for rapid introduction and integration within any DC or telecom operating environment and seamless interoperability with any existing metro or long-haul line system
- **Leverages** optical reach and spectrum programmability with line side support for 200G DP-16QAM, 150G DP-8QAM, and 100G DP-QPSK
- **Provides** open APIs for rapid automation and integration within any IT operational environment to enable fast service roll out and activation

Key Advantages of the Coriant Groove™ G30 DCI Platform Modular Architecture

- The lowest first cost for any single service (10G, 40G, 100G, or a combination) compared to the competition
- The most economical pay-as-you-grow concept enabling incremental in-service growth from 10 Gbps up to 1.6 Tbps of service capacity in 1RU
- Flexibility to mix and match 10G, 40G, and 100G clients according to network demand
- Power-as-you-grow with no phantom power drain for unused capacity
- Significant increase in network availability time compared to non-modular solutions requiring complete chassis replacement
- The simplest and lowest cost sparing concept of all products in the market
- The lowest sparing cost per site of all competitive products (one SKU per sled for the entire C-Band)
- Rapid adoption and deployment of future technologies with new sleds without the need to replace and discard the entire chassis, thus preserving hardware investment



400G Coherent Module 1 (CHM1)

LEVERAGING PROGRAMMABLE MODULATION FORMATS

Powered by Coriant CloudWave™ Optics, the Coriant Groove™ G30 DCI Platform supports programmable DWDM line interface bandwidth and performance to optimize high-capacity transmission from 100G to 400G in metro, regional, or long-haul DCI applications. The Coriant Groove™ G30 DCI Platform features three different user programmable line modulation formats to further cost optimize each network design for optimal transparent reach and fiber spectral utilization. Each of the eight Coriant Groove™ G30 DCI Platform line side ports can be independently configured as either 100G DP-QPSK, 150G DP-8QAM, or 200G DP-16QAM. Paired with the Coriant® Pluggable Optical Layer that features pluggable form factor amplifiers, variable optical attenuators, power monitoring, combiners, splitters, WSS, and all other functions, the Coriant Groove™ G30 DCI Platform is the simplest, most flexible, and most efficient DCI solution currently available.

Modulation Scheme	Application	Fiber Capacity	Reach	Forward Error Correction
DP-QPSK	Long Haul	9.6 Tbps	Up to 4000 km	Up to 25% SDFEC
DP-8QAM	Regional	19.2 Tbps	Up to 2000 km	Up to 25% SDFEC
DP-16QAM	Metro, Metro Edge	25.6 Tbps	Up to 1000 km	Up to 25% SDFEC

SUPPORTING PROGRAMMABLE WAVELENGTHS

Each of the eight Coriant Groove™ G30 DCI Platform line side port wavelengths can be independently tuned over the entire C-Band to support either a 96 or 128 channel plan. In addition, the Coriant Groove™ G30 DCI Solution supports multi-carrier super-channels for increased spectral utilization and seamless interworking with all of Coriant's flexi-grid capable line systems, including the Pluggable Optical Layer, the Coriant® 7100 Nano™ Packet Optical Transport Platform for metro DCI WAN applications, and the Coriant® hiT 7300 Multi-Haul Transport Platform for long-haul DCI WAN applications, as well as any third-party line system that supports either fixed-grid or flexible spectrum provisioning. The wavelength tuning and optical interface parameters are configurable via Command Line Interface, SNMP, NETCONF, or RESTCONF. Optional management and control are available through the Coriant Transport Network Management System (TNMS) and the Coriant Transcend™ SDN Controller.

SIMPLIFYING INTEGRATION AND OPERATION IN CLOUD & DATA CENTER ENVIRONMENTS

The Coriant Groove™ G30 DCI Platform provides standards-based interfaces that simplify integration and operation within cloud and data center environments, including support for open Northbound Interfaces (NBIs) and APIs. The supported interfaces include CLI, SNMP Fault Management, and YANG model based NETCONF and RESTCONF machine-to-machine APIs. These interfaces enable rapid integration of the Coriant Groove™ G30 DCI Platform into traditional telecommunications environments and data center software defined networking (SDN) environments. The Coriant Groove™ G30 DCI Platform is fully integrated with Coriant planning, management, and control solutions, including TNMS and the Coriant Transcend™ SDN Solution.

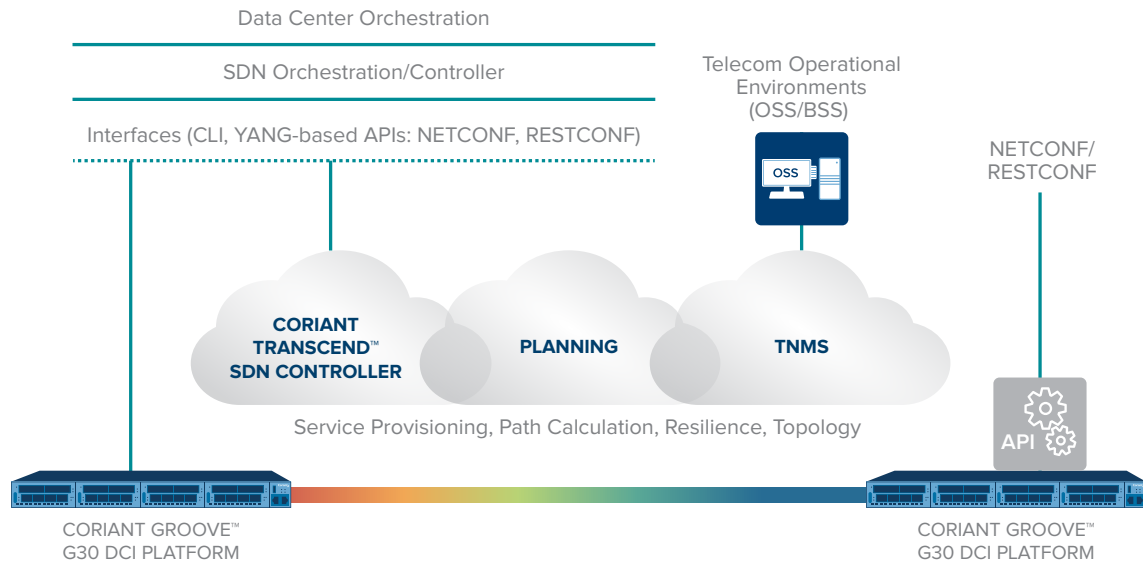


Figure 1: Coriant Groove™ G30 DCI Platform Management and Control

Deploying over Third-party Line Systems

The Coriant Groove™ G30 DCI Platform is based on open protocols and industry standards to interwork with almost every third-party metro and long-haul line system currently deployed. This architecture enables the advanced transmission capabilities and benefits of the Coriant Groove™ G30 DCI Platform to be added to existing deployments. As a purpose-built DCI WAN transmission system, the Coriant Groove™ G30 DCI Platform disaggregates the transponder and muxponder functions from the traditional telecom transport network element that also includes ROADM and optical amplification to enable rapid deployment in any existing network.

TECHNICAL SPECIFICATIONS *

Physical Dimensions

- 440 x 43.7 x 510 mm / 17.32 x 1.72 x 20.08 in (W x H x D)
- Supports 600 mm depth with cabling
- Rack installation into 2 or 4 post standard 19-inch, 21-inch, and 23-inch racks
- Height: 1RU
- Weight: 6.4 kg/14 lb for 3.2 Tbps configuration without pluggables

System Capacity and Scalability

- Maximum line side capacity: 1.6 Tbps
- Maximum client side capacity: 1.6 Tbps
- Maximum capacity per fiber: 25.6 Tbps
- Maximum capacity per rack: 134.4 Tbps

Configuration and Modularity

- Four individually configurable and hot-swappable single slot FRUs (400G sleds)
- Two individually configurable and hot-swappable dual slot FRUs (400G sleds)
- Up to 8x CFP2-ACO Pluggable (100G/150G/200G)
- Up to 16x QSFP28 Pluggable (100G)
- Up to 20x QSFP+ Pluggable (4x10G/40G)

Electrical Power

- 45W per 100G - most energy efficient
- AC PSU Input Voltage Range 100-240VAC 50/60Hz, 1:1 FRU redundancy
- DC PSU Input Voltage Range -40V DC to -72V DC, 1:1 FRU redundancy
- HV D/C PSU, 1:1 FRU redundancy

Cooling and Fans

- Front to back straight through air flow
- 4:1 FRU fans, indefinite operation with a single fan failure
- Card presence for filler card in unused slots to eliminate human error

Management and Console Ports

- 2xRJ-45 front access
- 2xRJ-45 rear access
- 1xUSB front access
- Field replaceable SD memory card

continued on next page...

TECHNICAL SPECIFICATIONS *

Client Side Interfaces

- 10G, 40G, and 100G in a single hot-swappable FRU (400G sled)
- QSFP28 SR4 (100 m) 100GbE
- QSFP28 PSM4 (500 m) 100GbE
- QSFP28 LR4 (10 km) dual rate 100GbE and OTU4
- QSFP28 CLR4/CWDM4 (2 km) 100GbE
- QSFP28 SWDM4 (up to 300 m) 100GbE
- QSFP+ SR4 (100 m) for 40GbE
- QSFP+ LR4 (10 km) dual rate 40GbE and OTU3
- QSFP+ eSR4 (300 m) 4x10GbE
- QSFP+ LR4 (10 km) 4x10GbE

Line Side Interfaces

- Tunable C-Band CFP2-ACO Coherent Optical Transceiver (100G DP-QPSK, 150G DP-8QAM, 200G DP-16QAM)
- Transparent Reach: up to 4000 km
- Chromatic Dispersion Tolerance:
 - DP-QPSK 280ns/nm
 - DP-8QAM/DP-16QAM 45ns/nm
- PMD Tolerance: 40ps mean DGD

Data Encryption

- Integrated wire-speed AES-256 OTN payload encryption (10G, 40G, 100G)

Regulatory and Compliance

- RoHS-6 compliant and lead-free per Directive 2002/95/EC
- GR-3160 Generic Requirements for Telecommunications Data Center Equipment and Spaces
- Emissions: FCC Part 15 Class A, CISPR Class A Compliant, CE
- Laser Safety: ANSI Class 1M, IEC Class 1M, EN 60825-1/2, 21 CFR 1040 US FDA CDRH, Laser Safety

Environmental

- Operating Temperature: 0°C to 40°C / 32°F to 104°F
- Transport and Storage: -40°C to +70°C / -40°F to 158°F / 40°C+93% RH
- Humidity: 5% to 90% non-condensing

Performance Monitoring

- Ethernet PMs: 24 hour, 15 min, 1 week, 1 month
- OTN PMs: Tx/Rx, FEC

Management Options

- Management and control platforms:
 - Coriant Transport Network Management System (TNMS)
 - Coriant Transcend™ SDN Solution
- NETCONF and RESTCONF YANG model based machine-to-machine APIs
- Command Line Interface
- Zero Touch Commissioning (ZTC)
- SNMP Fault Management
- GUI Based Craft Terminal

** Product features and specifications are subject to change*

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