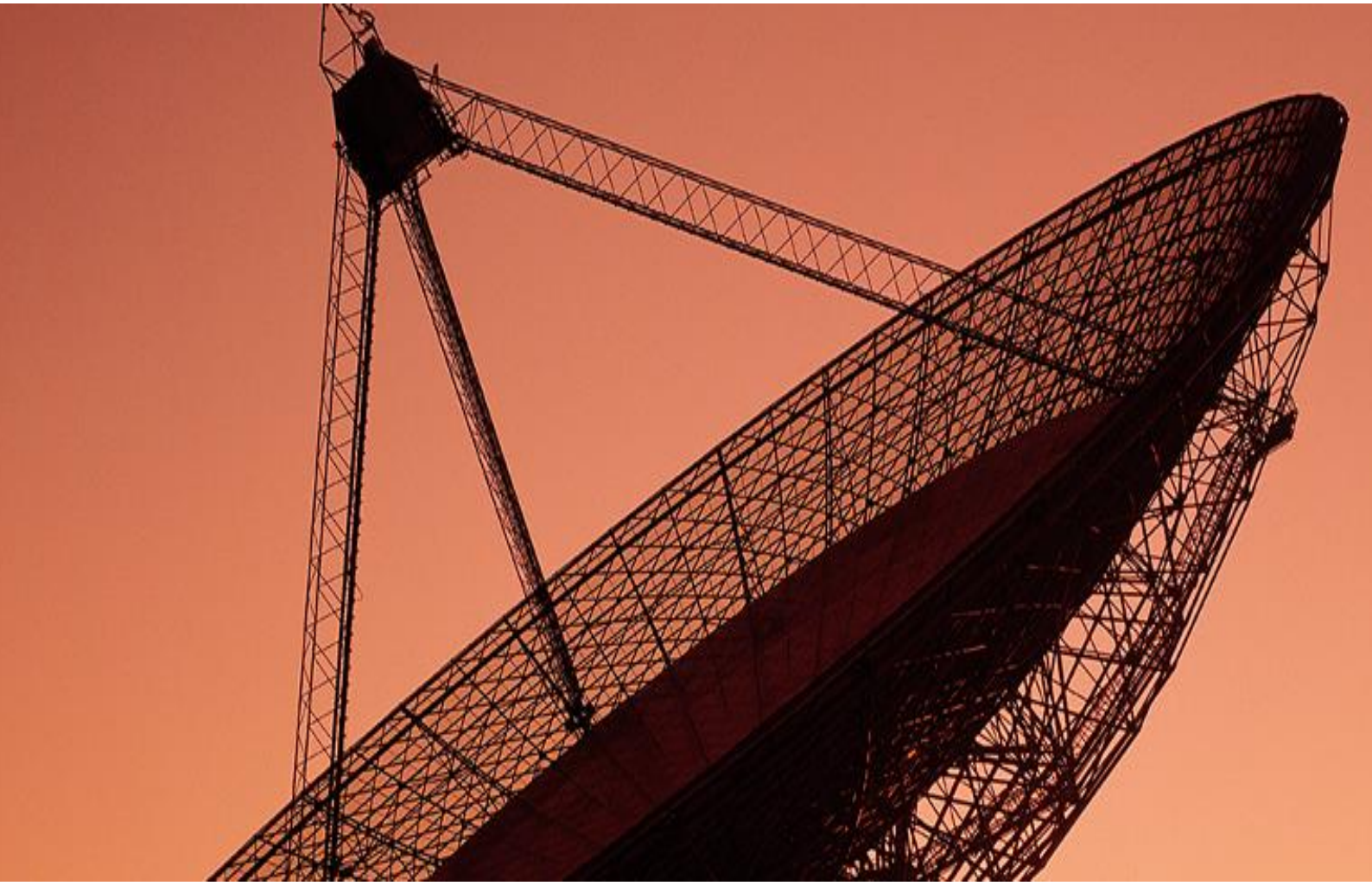
KanesBridge Product 2024

Optical DCI/OTN Products



About KanesBridge Technology

Founded in 2020, KanesBridge Technology is a key member of a global manufacturing group, alongside Esion Optic Inc. and PASV Telecom, specializing in passive optical network products.

Our core product lines include Optical Transceivers, Optical Patch Cables, Passive Optical Solutions, and WDM transmission systems tailored for telecom, data center, wireless and fixed access (FTTX) connectivity applications.

We operate in-house R&D and manufacturing facilities in China and Malaysia, with sales and operations across Asia, Europe, and the USA. Our global reach ensures we deliver exceptional service to customers worldwide. For over 10 years, we have been a trusted technology partner and reliable supplier to Tier 1 telecom carriers, Internet service providers, global network OEMs, and top cloud service providers.

At KanesBridge, we are more than technology experts—we're your partner for business growth and beyond.

KanesBridge Technology
ABN: 72661546103
Phone: +61 434306783 | E-mail: sales@kanesbridge.com
www.kanesbridge.com

Table of Contents

Note: Not all of KanesBridge DCI and Optical Transport Systems are listed in this product list. Please contact us to inquire about any products not listed here.

1. Introduction of DWDM, OTN and DCI

In modern telecommunications, Dense Wavelength Division Multiplexing (DWDM) and Optical Transport Network (OTN) are crucial for high-capacity data transfer. DWDM efficiently multiplies data channels by transmitting multiple signals on different wavelengths over a single fiber, maximizing bandwidth. OTN, on the other hand, enhances data integrity and management by providing robust error correction, multiplexing, and network management capabilities. While DWDM boosts data capacity, OTN ensures reliable and efficient data transport. Both are essential for optimizing network performance and handling increasing data demands.

1.1 Dense Wavelength Division Multiplexing (DWDM)

Dense Wavelength Division Multiplexing (DWDM) is a cutting-edge technology that maximizes the capacity of optical fiber by transmitting multiple data streams simultaneously over different wavelengths. Here's a quick overview of its benefits and applications:

Key Features:

- **High Capacity:** DWDM increases fiber capacity by sending multiple data streams, each on its own wavelength, through the same fiber.
- **Protocol and Bitrate Flexibility:** Supports a range of protocols like IP, ATM, SONET, SDH, and Ethernet, allowing diverse data types—voice, video, email, and more—to be transmitted concurrently.
- **Long-Distance Efficiency:** Minimizes the need for signal regeneration, maintaining signal quality over longer distances and cutting costs.
- **Scalability:** Easily expandable by adding more wavelengths to handle growing data demands.

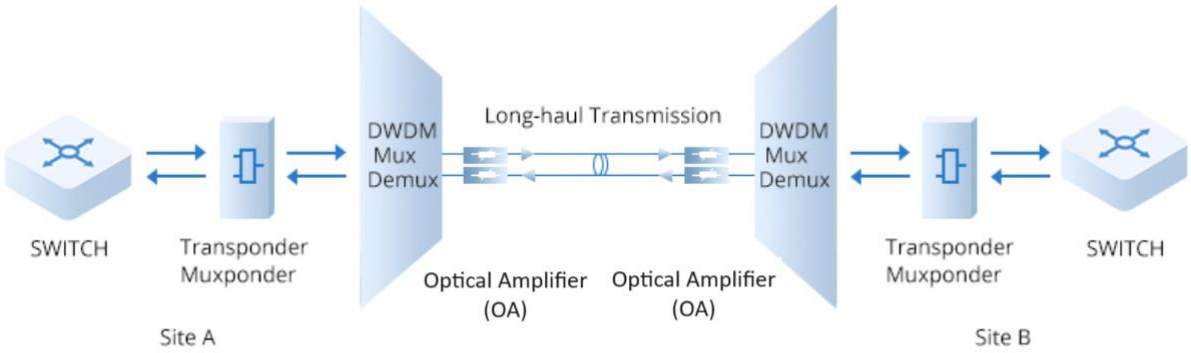
Ideal Use Cases:

- **High Data Volume:** Perfect for networks with heavy data traffic needing significant capacity boosts.
- **Long-Distance Transmission:** Maintains signal integrity over great distances, reducing regeneration needs.
- **Scalable Growth:** Effortlessly adapts to increasing data needs by adding wavelengths.

Components:

- **Muxponders/Transponders:** Convert and manage wavelengths.
- **DWDM Optical Modules:** Facilitate wavelength transmission.
- **DWDM Mux/DeMux:** Combine or separate wavelengths.
- **Optical Add/Drop Multiplexers (OADMs):** Add or remove specific wavelengths.
- **Optical Amplifiers:** Boost signal strength.

DWDM technology is essential for expanding network capabilities and ensuring efficient data transmission across vast distances



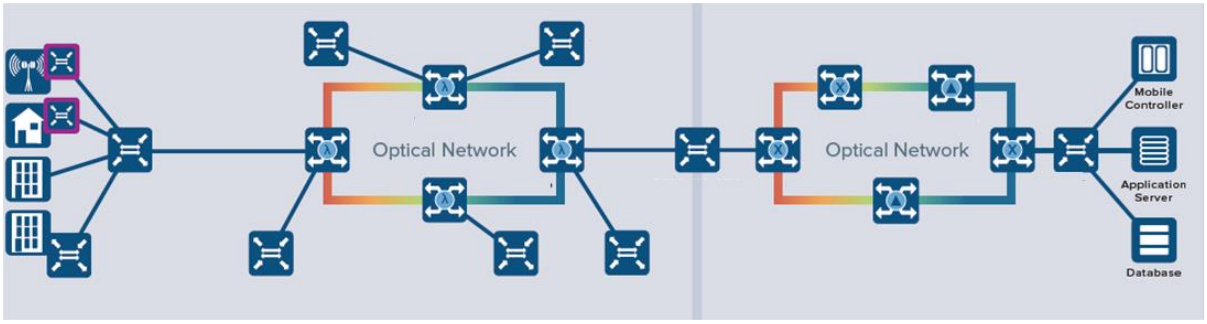
The following highlights some common components of a DWDM Transmission solution.

DWDM Transmission System	KanesBridge Product	Product Description
Muxponder/Transponder	KBAP-MXP-400 KBAP-MXP-400QDD KBAP-MXP200-2 KBAP-MXP200 KBAP-MXP200-2-T10 KBAP-MXP200-T20 KBAP-TSP400 KBAP-TSP200 KBAP-TSP100	Pluggable 400G Muxponder (to 4x100G) Pluggable 400G Muxponder (QDD) Pluggable 2x200G Muxponder (to 4x100G) Pluggable 200G Muxponder (to 2x100G) Pluggable 200G Muxponder (to 100G+10x10G) Pluggable 200G Muxponder (to 20x10G) Pluggable 400G OEO Pluggable 200G OEO Pluggable 100G OEO
DWDM Optical Module	KBSFP-1GDWDM KBSFP-10GDWDM KBXFP-10GDWDM KBSFP-25DWDM KBSFP-100GDWDM KBCFP2-200GDCO KBCFP2-400GDCO KBQSFPDD-400GDCO	1.25G SFP DWDM 40KM, 80KM 10G SFP+ DWDM 20KM, 40KM, 80KM 10G XFP DWDM 40KM, 80KM 25G SFP28 DWDM 10KM 100G QSFP28 DWDM 80KM 100G/200G CFP2-DCO 400G CFP2-DCO 400G QSFPDD-DCO
DWDM Mux/DeMux	KBPP-DWDM-4, 8, 16 KBPP-MUX48 KBPP-MUX96	4, 8, 16 Channel DWDM MUX/DEMUX 48 Channel DWDM MUX/DEMUX 96 Channel DWDM MUX.DEMUX
DWDM OADM / ROADM	KBAP-OADM KBAP-WSS	Fixed Wavelength OADM 9 Degree Wavelength Selective Switch (WSS)
Optical Amplifier	KBAP-OA	Optical Amplifier (OA)
Variable Optical Attenuator	KBAP-VOA	Variable Optical Attenuator (VOA)
Optical Line Protection	KBAP-OLP	Optical Line Protection (OLP)
Optical Channel Monitoring	KBAP-OCM	Pluggable Optical Channel Monitoring (OCM)
Optical Supervisory Channel	KBAP-OSC	Pluggable Optical Supervisory Channel (OSC)
Optical Time-Domain Reflectometer	KBAP-OTDR	Pluggable Optical Time-Domain Reflectometer (OTDR)

KanesBridge Passive DWDM Mux/DeMux (48CH & 96CH)

1.2 Optical Transport Network (OTN)

Optical Transport Network (OTN) transforms high-speed data transmission, evolving from traditional point-to-point DWDM solutions to a versatile, scalable network architecture. Defined by ITU standards like G.709 and G.798, OTN, often termed a 'digital wrapper,' encapsulates client data for seamless transport across optical networks. This advanced technology supports various data formats and enhances network efficiency.



Key Features:

- **High Capacity with WDM:** OTN uses Wavelength Division Multiplexing (WDM) to combine multiple wavelengths on a single fiber, significantly boosting data capacity.
- **Forward Error Correction (FEC):** FEC enhances reliability by adding redundancy to data, allowing errors to be detected and corrected, ensuring high data integrity.
- **Hierarchical Structure:** OTN organizes optical channels into levels like Optical Channel (OCh), Optical Transport Unit (OTU), and Optical Multiplex Section (OMS) to manage diverse bandwidth needs.
- **Optical Channel Data Unit (ODU):** ODU provides a flexible container for various client signals, including Ethernet and SONET/SDH, within the OTN network.
- **Transparency & Interoperability:** OTN maintains transparency to client signals, allowing different data types to be transported without protocol conversion, ensuring compatibility across equipment and vendors.
- **Advanced OAM:** Robust Operations, Administration, and Maintenance (OAM) features support network monitoring, fault detection, and diagnostics.

Key Differences from DWDM:

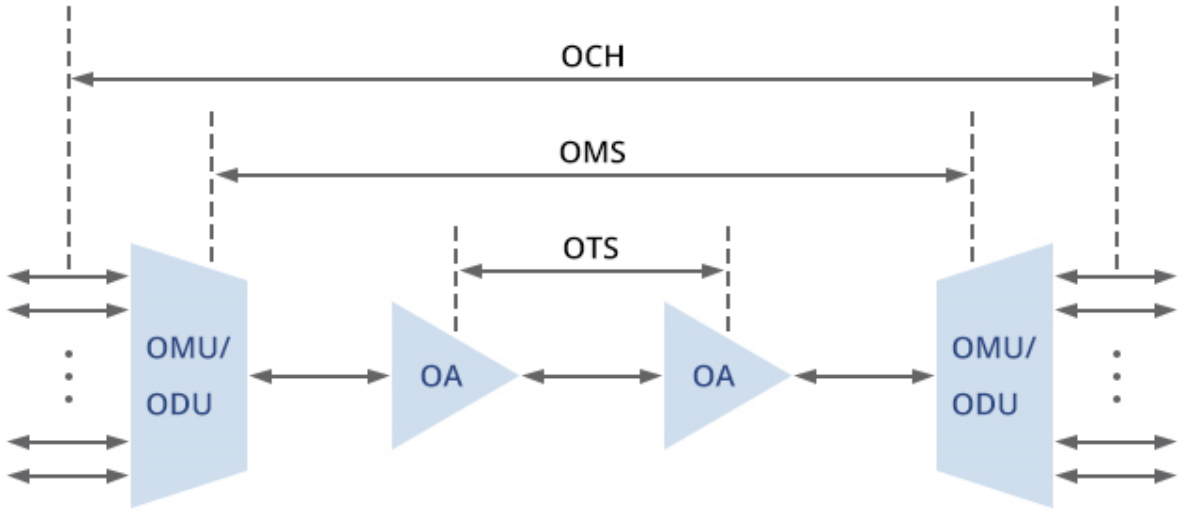
- **Layer Integration:** While DWDM operates only at the optical layer, OTN spans both optical and electrical layers.
- **Service Multiplexing:** OTN allows multiple services on a single wavelength, unlike traditional DWDM which handles single-service wavelengths.
- **Enhanced Protection:** OTN offers comprehensive network protection at both optical and electrical layers, improving reliability compared to DWDM's optical-only protection.
- **Broader Service Support:** OTN supports a wider range of services with integrated board functionalities, enhancing service flexibility and network efficiency.
- **Dynamic Resource Allocation:** OTN's electrical-layer cross-connection supports dynamic bandwidth allocation, optimizing resource use.

When to Choose OTN:

- **Diverse Data Formats:** Ideal for networks managing multiple data formats like Ethernet, SONET, and SDH.
- **Error-Sensitive Applications:** Suitable for environments where high data integrity is crucial due to its FEC capabilities.
- **Scalable Growth:** Offers scalable solutions through its hierarchical architecture, accommodating future network expansions.

OTN Network Structure:

- **Optical Channels (OCH):** Manage individual client signals.
- **Optical Multiplex Sections (OMS):** Aggregate multiple OCHs onto a common wavelength.
- **Optical Transport Sections (OTS):** Represent the physical layer, including fibers, equipment, and amplifiers.



OTN is the backbone of modern communication networks, offering robust, scalable, and efficient data transmission. Key components include:

- **OCH Layer**: Muxponders/Transponders (Wavelength Converters), DWDM Optical Modules
- **OMS Layer**: DWDM Mux/DeMux
- **OTS Layer**: ROADMs (Reconfigurable Optical Add/Drop Multiplexers), OXCs (Optical Cross Connects), Wavelength Selective Switches (WSS), Optical Amplifiers (EDFA), Optical Line Protection (OLP), Dispersion Compensation Modules (DCM), Variable Optical Attenuators (VOA)

These components ensure seamless, high-capacity data transport across diverse network infrastructures.

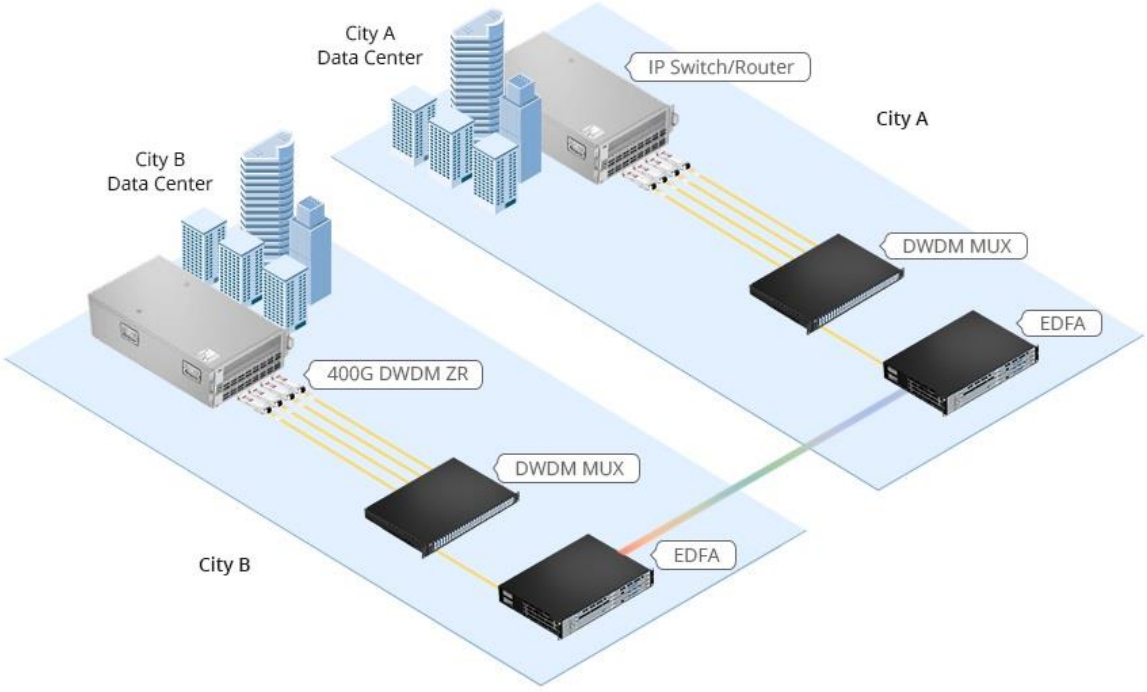
Optical Transport System	KanesBridge Product	Product Description
OTS Chassis	KBAP-OTS-C5 KBAP-OTS-C4 KBAP-OTS-C2 KBAP-OTS-C1	Managed Chassis (Unloaded), 19” Rack 5U Managed Chassis (Unloaded), 19” Rack 4U Managed Chassis (Unloaded), 19” Rack 2U Managed Chassis (Unloaded), 19” Rack 1U
Muxponder/Transponder	KBAP-MXP-400 KBAP-MXP200 KBAP-MXP200-2-10 KBAP-MXP200-20 KBAP-TSP400 KBAP-TSP200-2 KBAP-TSP100-2	Pluggable 400G Muxponder (to 4x100G) Pluggable 200G Muxponder (to 2x100G) Pluggable 200G Muxponder (to 100G+10x10G) Pluggable 200G Muxponder (to 20x10G) Pluggable 400G OEO Pluggable 200G OEO Pluggable 100G OEO
DWDM Optical Module	KBCFP2-200GDCO KBCFP2-400GDCO	100G/200G CFP2-DCO 400G CFP2-DCO
DWDM Mux/DeMux	KBPP-DWDM-4, 8, 16 KBPP-MUX48 KBPP-MUX96	4, 8, 16 Channel DWDM MUX/DEMUX 48 Channel DWDM MUX/DEMUX 96 Channel DWDM MUX.DEMUX
DWDM OADM / ROADM	KBAP-OADM KBAP-WSS	Pluggable, Fixed Wavelength OADM Pluggable, 9 Degree Wavelength Selective Switch (WSS)

Optical Amplifier	KBAP-OA	Pluggable Optical Amplifier (OA) Pluggable Optical Terminal Amplifier (OTA) Pluggable Optical Line Amplifier (OLA)
Variable Optical Attenuator	KBAP-VOA	Pluggable Variable Optical Attenuator (VOA)
Optical Line Protection	KBAP-OLP	Pluggable Optical Line Protection (OLP)
Optical Channel Monitoring	KBAP-OCM	Pluggable Optical Channel Monitoring (OCM)
Optical Supervisory Channel	KBAP-OSC	Pluggable Optical Supervisory Channel (OSC)
Optical Time-Domain Reflectometer	KBAP-OTDR	Pluggable Optical Time-Domain Reflectometer (OTDR)

KanesBridge Optical Transport System (1U, 2U, 4U & 5U)

1.3 Data Center Interconnect (DCI)

Data Center Interconnect (DCI) is crucial for linking data centers across various distances, ensuring high-speed, efficient connectivity for data sharing, backup, and load balancing. As data center traffic surges due to big data and cloud expansion, DCI technologies play a pivotal role in maintaining robust, scalable, and high-performance networks.



Key Challenges in Modern DCI:

- **Ultra-High Bandwidth:** Supports 10G to 400G links over distances from 10 to 1000 km using dense DWDM and coherent transmission for Metro and Long-Haul applications.
- **Diverse Client Types and Rates:** Requires flexible rates and efficient aggregation from 10G to 400G, accommodating various services like Ethernet and Fiber Channel.
- **Real-Time Access:** Demands low latency, robust fault isolation, and alignment with traditional OA&M standards.
- **Data Security:** Ensures encryption of data during transit between data centers.
- **SDN Management and Automation:** Needs SDN-aware transport, open APIs, and topology discovery.
- **Geographic Flexibility:** Requires adaptable deployment options, including leased lines and dark fiber.
- **Cost Efficiency:** Focuses on low power consumption per bit and high bandwidth per rack unit.

Optical DCI Components:

- **OCH Layer:** Muxponders/Transponders (Wavelength Converters), DWDM Optical Modules
- **OMS Layer:** DWDM Mux/DeMux
- **OTS Layer:** ROADMs, Optical Cross Connects (OXC), Wavelength Selective Switches (WSS), Optical Amplifiers (EDFA), Optical Line Protection (OLP), Dispersion Compensation Modules (DCM), Variable Optical Attenuators (VOA)

Innovations in DCI Hardware:

- **"DCI Box":** A compact, self-contained system replacing traditional OTS chassis, offering smaller size and lower power consumption.
- **Pluggable Optics:** New 400G DWDM pluggable optics integrate directly into routers and switches, further reducing hardware footprint and cost.

Optical DCI, driven by advanced DWDM and amplifier technologies, provides high-density, efficient layer-1 connectivity between geographically dispersed locations, meeting the demanding needs of modern cloud and data center environments.

KanesBridge DCI Platforms (1U & 2U)

The following highlights some common components of an Optical Data Center Interconnect (DCI) solution.

Optical DCI	KanesBridge Product	Product Description
DCI Platform	KBAP-OTNS8600-DCI8 KBAP-OTNS8600-DCI4 KBAP-6.4TDCI-BOX KBAP-1.6TDCI-BOX KBAP-800GDCI-BOX	19" Rackmount, 2U, Modular DCI Box with 3.2Tb/s capacity 19" Rackmount, 1U, Modular DCI Box with 1.6Tb/s capacity 19" Rackmount, 2U, Modular DCI Box with 6.4Tb/s capacity 19" Rackmount, 1U, Modular DCI Box with 1.6Tb/s capacity 19" Rackmount, 1U, Modular DCI Box with 800Gb/s capacity
OLS Platform	KBAP-OLS-40M	19" Rackmount, 1U, 40 Channel Open Line System (OLS)
Muxponder/Transponder	KBAP-MXP400-4QDD KBAP-MXP400-2 KBAP-MXP-400 KBAP-MXP-400QDD KBAP-MXP200-2 KBAP-MXP200 KBAP-MXP200-2-10 KBAP-MXP200-20 KBAP-TSP400 KBAP-TSP200-2 KBAP-TSP100-2	Pluggable 4x400G Muxponder (QDD) Pluggable 2x400G Muxponder (to 8x100G) Pluggable 400G Muxponder (to 4x100G) Pluggable 400G Muxponder (QDD) Pluggable 2x200G Muxponder (to 4x100G) Pluggable 200G Muxponder (to 2x100G) Pluggable 200G Muxponder (to 100G+10x10G) Pluggable 200G Muxponder (to 20x10G) Pluggable 400G OEO Pluggable 200G OEO Pluggable 100G OEO
DWDM Optical Module	KBCFP2-200GDCO KBCFP2-400GDCO KBQSFPDD-400GDCO	100G/200G CFP2-DCO 400G CFP2-DCO 400G QSFPDD-DCO
DWDM Mux/DeMux	KBPP-DWDM-4, 8, 16 KBPP-MUX48 KBPP-MUX96 KBAP-MUX4-TFF KBAP-MUX4-SBM KBAP-MUX48-OMU KBAP-MUX48-ODU KBAP-MUX49-VMU	4, 8, 16 Channel DWDM MUX/DEMUX 48 Channel DWDM MUX/DEMUX 96 Channel DWDM MUX.DEMUX Pluggable 4 Channel TFF MUX/DEMUX Pluggable 4 Channel Single Fiber MUX/DEMUX Pluggable 48 Channel MUX Pluggable 48 Channel DEMUX Pluggable 48 Channel MUX/DEMUX
DWDM OADM / ROADM	KBAP-OADM KBAP-WSS	Pluggable, Fixed Wavelength OADM Pluggable, 9 Degree Wavelength Selective Switch (WSS)
Optical Amplifier	KBAP-OA	Pluggable Optical Amplifier (OA) Pluggable Optical Terminal Amplifier (OTA) Pluggable Optical Line Amplifier (OLA)
Variable Optical Attenuator	KBAP-VOA	Pluggable Variable Optical Attenuator (VOA)
Optical Line Protection	KBAP-OLP	Pluggable Optical Line Protection (OLP)
Optical Channel Monitoring	KBAP-OCM	Pluggable Optical Channel Monitoring (OCM)
Optical Supervisory Channel	KBAP-OSC	Pluggable Optical Supervisory Channel (OSC)
Optical Time-Domain Reflectometer	KBAP-OTDR	Pluggable Optical Time-Domain Reflectometer (OTDR)

2. KanesBridge DCI/OTN Products

Elevate your fiber optic network with KanesBridge's advanced DCI/OTN systems. Designed for seamless integration and management, our solutions simplify installation and operation, whether you use KanesBridge NMS or integrate with third-party NMS throughout the deployment lifecycle.

2.1 KanesBridge DCI Platforms

KanesBridge offers two robust platforms: the **KanesBridge OTNS8600** and the **KanesBridge DCI-BOX**. Both are optimized for diverse Data Center Interconnect (DCI) and metro optical transmission needs.

2.1.1 KanesBridge OTNS8600

KanesBridge OTNS8600: This cutting-edge WDM transmission platform is engineered for Data Center Interconnect (DCI) applications, boasting high integration and extensive bandwidth. It facilitates easy deployment without complex tuning, and supports straightforward operation and maintenance through NETCONF/YANG. The OTN8600 addresses the surging bandwidth demands between data centers, supports flexible equipment deployment, and promotes an open optical network architecture, setting a new standard in high-speed, all-optical interconnections.

OTNS8600 Models:

- **OTNS8600-DCI8**
- **OTNS8600-DCI4**

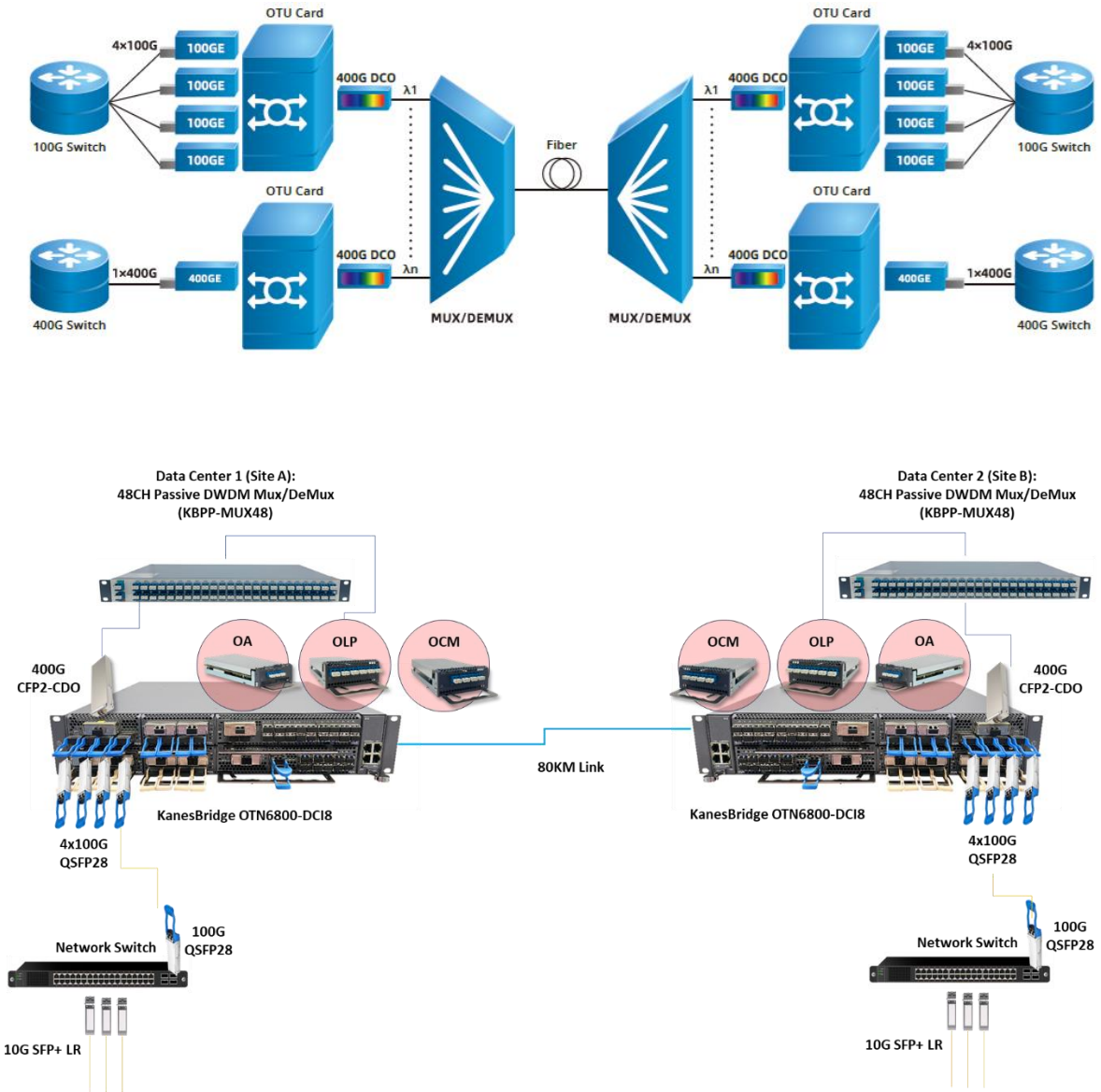
KanesBridge OTNS8600-DCI8

Key Features of OTNS8600-DCI8:

- **Modular Design**: Features a fully optoelectronic integrated, pluggable design. Components are hot-swappable, allowing for on-demand deployment and expansion.
- **Compact Enclosure**: Fits a 19” rackmount (2U) and is suitable for data centers, compatible with standard IT equipment cabinets.
- **Massive Capacity**: Delivers up to 3.2 Tb/s per system, with single-channel capacities reaching 400G, and scalable to 600G, 800G, and 1.2T.
- **Versatile Optical Service Cards**: Integrates optical layer cards with OA, WSS, VOA, OSC, OTDR, OCM, OLP, and more, simplifying internal fiber connectivity.
- **Diverse Client Services**: Supports a range of services, including 10GE, 100GE, 100GE FlexE (Unaware), 400GE, STM-64, 10GE WAN, OTU2, OTU4, etc.
- **Advanced ROADM and FlexGrid**: 9-degree ROADM networking ensures flexibility and efficiency.
- **Comprehensive Monitoring**: Offers performance monitoring at service, OTN, and optical layers, with NETCONF/YANG interfaces and a user-friendly GUI management platform.
- **Robust Protection**: Multi-layer protection at the network and device levels with a protection reversal delay of less than 50ms, guaranteeing superior performance.

Application Scenario:

The diagram below illustrates the use of our Enterprise IDC Data Center Interconnect solution, featuring a 400G Point-to-Point Transmission setup, demonstrating the power and efficiency of KanesBridge technology in real-world applications.



400G Point to Point Transmission Solution with KanesBridge DCI Box

The following table highlights the key specifications of KanesBridge OTNS8600-DCI8.

Parameter		Description
Applications		DCI, Metro, and Long-Haul Transmission
Network Topology		Point to Point, Ring, Mesh
Chassis	Dimensions (H x W x D)	88 mm (H)×446 mm (W)×450 mm (D)
	Maximum Capacity	3.2Tbit/s
	Number of Service Card Slots	8
	Enclosure Type	19" Rack mount, 2U
Line-side Port	Data Rate	100G (PDM_QPSK) programmable 200G (PDM_QPSK) programmable 200G (PDM_8QAM) programmable 200G (PDM_16QAM) programmable 400G (PDM_16QAM) programmable
	Optical Module	Pluggable QSFP28 / QSFP-DD or CFP2, wavelength adjustable
Client-side Port	Service Type	10GE, 100GE, 100GE FlexE (Unware), 400GE, OTU2, OTU4, STM-64 and 10GE WAN
	Optical Module	Pluggable SFP+, QSFP28
Max. Number of Wavelengths		Fixed grid: 96 wavelengths @50 GHz
Channel spacing		Fixed grid: 50 GHz / 75 GHz / 100 GHz / 150 GHz
Central frequency range		191.35 THz ~ 196.1 THz
Central wavelength range		1528.77 nm ~ 1566.73 nm
Protection Function		Optical line protection (OLP) Optical multiplexed segment protection (OMSP) Optical channel protection (OCHP) SNCP protection (only P422 muxponder supported)
Network Management		Supports main controller 1+1 backup (optional) Support CLI, Web LCT, NETCONF, GUI management platform based on B/S architecture Support DCN communication based on OSC
Power Supply	Back-up	Standard CRPS power supply 1+1 backup
	AC	Rated voltage range: 100 V AC ~ 130 V AC (50/60Hz) or 200 V AC ~ 240 V AC (50/60Hz) Max. voltage range: 90 V AC ~ 264 V AC (45Hz~65Hz)
	HVDC	Rated voltage range: 240 V HVDC Max. voltage range: 192 V HVDC ~ 288 V HVDC
	DC	Rated voltage range: -48 V DC/-60 V DC Max. voltage range: -40 V DC ~ -72 V DC
Heat Dissipation		Front inlet air and rear outlet air 2+1 Fan unit backup
Typical Power Consumption		<800W (Electric layer full match)
Environment	Operating Temperature	Short-term: -5℃ ~ +45℃; Long-term: 0℃ ~ 40℃
	Storage Temperature	-40℃ ~ +70℃
	Humidity	5%～95% (no condensation)

KanesBridge OTNS8600-DCI4

The KanesBridge OTNS8600-DCI4 is a compact powerhouse, housed in a 19” rackmount, 1U enclosure with four optical service card slots. It delivers exceptional performance and flexibility for your network needs.

Key Features

- **Modular Design**: Fully optoelectronic integrated and pluggable. Components are hot-swappable, allowing on-demand deployment and expansion.
- **Compact 1U Enclosure**: Designed to fit a 19” rackmount with an 800mm depth, making it ideal for data centers and compatible with standard IT equipment cabinets.
- **High Transmission Capacity**: Supports up to 1.6 Tb/s per system, with single-channel capacities up to 400G, scalable to 600G, 800G, and 1.2T.
- **Versatile Optical Service Cards**: Integrated with optical layer cards featuring OA, WSS, VOA, OSC, OTDR, OCM, OLP, and more, simplifying internal fiber connectivity.
- **Extensive Client Service Support**: Compatible with 10GE, 100GE, 100GE FlexE (Unaware), 400GE, STM-64, 10GE WAN, OTU2, OTU4, and other service types.
- **Advanced ROADM and FlexGrid**: 9-degree ROADM networking for enhanced flexibility and efficiency.
- **Comprehensive Monitoring and Management**: Provides performance monitoring at service, OTN, and optical layers, supporting NETCONF/YANG interfaces and a user-friendly GUI management platform.
- **Robust Protection**: Features multi-layer network-level and device-level protection with a protection reversal delay of less than 50ms, ensuring superior performance.

Parameter		Description
Applications		DCI, Metro, and Long-Haul Transmission
Network Topology		Point to Point, Ring, Mesh
Chassis	Dimensions (H x W x D)	44 mm (H)×444 mm (W)×490 mm (D)
	Maximum Capacity	1.6Tbit/s
	Number of Service Card Slots	4
	Enclosure Type	19" Rack mount, 1U
Line-side Port	Data Rate	100G (PDM_QPSK) programmable 200G (PDM_QPSK) programmable 200G (PDM_8QAM) programmable 200G (PDM_16QAM) programmable 400G (PDM_16QAM) programmable
	Optical Module	Pluggable QSFP28 / QSFP-DD or CFP2, wavelength adjustable
Client-side Port	Service Type	10GE, 100GE, 100GE FlexE (Unware), 400GE, OTU2, OTU4, STM-64 and 10GE WAN
	Optical Module	Pluggable SFP+, QSFP28
Max. Number of Wavelengths		Fixed grid: 96 wavelengths @50 GHz
Channel spacing		Fixed grid: 50 GHz / 75 GHz / 100 GHz / 150 GHz
Central frequency range		191.35 THz ~ 196.1 THz
Central wavelength range		1528.77 nm ~ 1566.73 nm

Protection Function		Optical line protection (OLP) Optical multiplexed segment protection (OMSP) Optical channel protection (OCHP) SNCP protection (only P422 muxponder supported)
Network Management		Support 1 main controller Support CLI, Web LCT, NETCONF, GUI management platform based on B/S architecture Support DCN communication based on OSC
Power Supply	Back-up	Standard CRPS power supply 1+1 backup
	AC	Rated voltage range: 100 V AC ~ 130 V AC (50/60Hz) or 200 V AC ~ 240 V AC (50/60Hz) Max. voltage range: 90 V AC ~ 264 V AC (45Hz~65Hz)
	HVDC	Rated voltage range: 240 V HVDC Max. voltage range: 192 V HVDC ~ 288 V HVDC
	DC	Rated voltage range: -48 V DC/-60 V DC Max. voltage range: -40 V DC ~ -72 V DC
Heat Dissipation		Front inlet air and rear outlet air 1+1 Fan unit backup
Typical Power Consumption		<550W (Electric layer full match)
Environment	Operating Temperature	Short-term: -5℃ ~ +45℃; Long-term: 0℃ ~ 40℃
	Storage Temperature	-40℃ ~ +70℃
	Humidity	5%～95% (no condensation)

Pluggable Modules for KanesBridge OTNS8600

The following are the pluggable modules designed for KanesBridge OTNS8600 DCI Platforms.

Pluggable Module	Description
System Control Unit (SCU) 	**System Control Unit (SCU):** The SCU is the central hub for network management and device coordination, offering: • **Seamless Integration:** Interfaces directly with the network management system for smooth operation. • **Efficient Management:** Oversees and manages individual equipment boards. • **Enhanced Communication:** Facilitates device interaction and efficient processing of overhead and optical monitoring channels.
2x400G Muxponder Service Card (P624) 	**2x400G Muxponder Service Card (P624):** • Maps 8x100G client signals into 2 OTUC4 signals. • Converts OTUC4 signals to ITU-T standard WDM wavelengths. • Utilizes pluggable CFP2-DCO for ultra-long-distance transmission via coherent detection
400G Muxponder Service Card (P616) 	**400G Muxponder Service Card (P616):** • Maps 1x400G or 4x100G client signals into 1 OTUC4 signal. • Converts OTUC4 signals to ITU-T standard WDM wavelengths. • Employs pluggable CFP2-DCO for ultra-long-distance transmission with coherent detection.

400G Muxponder Service Card (P614) 	**400G Muxponder Service Board (P614):** • Maps 4x100G client signals into 1 OTUC4 signal. • Converts OTUC4 signals to ITU-T standard WDM wavelengths. • Utilizes pluggable QSFP-DD DCO for ultra-long-distance transmission via coherent detection.
2x200G Muxponder Service Card (P524) 	**2x200G Muxponder Service Card (P524):** • Maps 4x100G client signals into 2 OTUC2 signals. • Converts OTUC2 signals to ITU-T standard WDM wavelengths. • Uses pluggable CFP2-DCO for ultra-long-distance transmission with coherent detection
2x100G+10x10G+ Muxponder Service Card (P514) 	**2x100G+10x10G+ Muxponder Service Card (P514):** • Maps 2x100G or 1x100G+10x10G client signals into 1 OTUC2 signal. • Converts OTUC2 signals to ITU-T standard WDM wavelengths. • Utilizes pluggable CFP2-DCO for ultra-long-distance transmission via coherent detection.
20x10G Muxponder Service Card (P512) 	**20x10G Muxponder Service Card (P512):** • Maps 20x10G client signals into 1 OTUC2 signal. • Converts OTUC2 signals to ITU-T standard WDM wavelengths. • Uses pluggable CFP2-DCO for ultra-long-distance transmission with coherent detection.
100G Muxponder Service Card (P422) 	**100G Muxponder Service Board (P422):** • Maps 20x10G client signals into 2 OTU4 signals or 10x10G signals into 1 OTU4 signal with 1+1 protection. • Supports QSFP28 gray optical module or QSFP28/QSFP-DD DCO for varied distance and network needs.
Optical Amplifier (OA) 	**Optical Amplifier (OA) Board:** • Amplifies up to 48 channels (100GHz spacing) or 96 channels (50GHz spacing) in the C-band. • Features flat and adjustable gain with low noise. • Includes a built-in OSC channel for DCN communication, vital for DWDM and long-distance all-optical networks.
Optical Terminal Amplifier (OTA) 	**Optical Terminal Amplifier (OTA):** • Amplifies up to 48 channels (100GHz spacing) or 96 channels (50GHz spacing) in the C-band. • Offers flat, adjustable gain with low noise. • Built-in OSC channel supports DCN communication, essential for DWDM and all-optical network transmission.
Optical Line Amplifier (OLA)	**Optical Line Amplifier (OLA):** • Amplifies up to 48 channels (100GHz spacing) or 96 channels (50GHz spacing) in the C-band. • Provides flat, adjustable gain with low noise.

	• Built-in OSC channel for DCN communication, key for DWDM and long-distance all-optical networks.
Dual Fiber Fixed MUX / DEMUX Board (TFF) 	**Dual Fiber MUX/DEMUX Board (TFF):** • Designed for DWDM applications, multiplexes/demultiplexes wavelengths in 1528nm-1568nm range. • Low insertion loss and high channel isolation. • Suitable for 4-channel and 8-channel DWDM in dual fiber transmission.
Single Fiber MUX/DEMUX (SBM) 	**Single Fiber MUX/DEMUX Board (SBM):** • For DWDM applications, multiplexes/demultiplexes wavelengths on single fiber. • Supports EDFA for bidirectional long-distance transmission with OSC monitoring. • Suitable for 4-channel and 8-channel DWDM in single fiber transmission.
48-Channel Passive MUX / DEMUX (MUX48) 	**48-Channel Passive MUX/DEMUX (MUX48):** • Handles 48 optical wavelengths in the C-band. • Heat-free packaging with low insertion loss and high stability. • Ideal for high-capacity DWDM systems.
96-Channel Passive MUX / DEMUX (MUX96) 	**96-Channel Passive MUX/DEMUX (MUX96):** • Manages 96 optical wavelengths in the C-band. • Features heat-free packaging, low insertion loss, and high stability. • Perfect for high-capacity DWDM systems.
9-Degree ROADM Card (WSS) 	**9-Degree ROADM Card (WSS):** • Integrates WSS, BA, PA, and OSC functions, supporting 96 channels in C-band. • Offers flexible grid function for enhanced spectrum utilization.
Optical Line Protection (OLP) 	**Optical Line Protection Card (OLP):** • Provides optical layer protection with 1+1 protection for lines and wavelengths. • Monitors signal status for automatic switching, ensuring rapid recovery and non-blocking communication.
Optical Channel Monitoring Card	**Optical Channel Monitoring Card (OCM):** • Analyzes MUX signal spectrum and channel optical power in 1528nm-1567nm range. • Features high stability, sensitivity, and short scanning time.

(OCM) 	
Optical Time-Domain Reflectometer Card (OTDR) 	**Optical Time-Domain Reflectometer Card (OTDR):** • Monitors 8-core optical fiber links for fault location and performance statistics. • Offers high dynamic range and resolution, essential for optical transmission systems.

2.1.2 KanesBridge DCI-BOX

The KanesBridge DCI-BOX is a high-speed, stackable WDM transmission platform designed for metro, long-haul, and high-capacity DCI networks. Compact yet powerful, it offers flexible solutions for enterprise, campus, and cloud networks with low power consumption and easy maintenance.

Models:

- **6.4T DCI-BOX**
- **1.6T DCI-BOX**
- **800G DCI-BOX**

KanesBridge 6.4T DCI-BOX

The KanesBridge 6.4T DCI-BOX is a 2U chassis offering high-performance connectivity with support for 200G/400G service cards and a comprehensive range of optical layers including WSS, EDFA, OMU/ODU, VMUX, OLP, OTDR, OCM, and TFF. Featuring an open software architecture and versatile interfaces, it integrates seamlessly with data center management systems for streamlined maintenance and rapid service expansion. The front panel supports fiber connections and single-card hot swapping for easy upkeep, while the rear accommodates power supply and fan access. It supports DC-48V/AC 220V power with 1+1 redundancy for the main control card, power supply, and fans.

KanesBridge 6.4T DCI-BOX Front

KanesBridge 6.4T DCI-BOX Back

Key Features:

- **High Capacity**: Delivers up to 6.4 Tb/s per system with single-wave capacities up to 400G, evolving to 600G, 800G, and 1.2T.
- **Modular Design**: Features a fully modular, optoelectronic design with pluggable components. Supports multi-chassis expansion and smooth upgrades from 48 to 96 channels.
- **Compact 2U Chassis**: Fits into a 19" rackmount with a 2U height, ideal for data centers and compatible with standard IT equipment cabinets.
- **Flexible Service Cards**: Equipped with pluggable optical service cards integrating WSS, EDFA, OMU/ODU, VMUX, OLP, OTDR, and OCM for simplified fiber connectivity.
- **Broad Client Support**: Supports a wide range of services including 10GE, 100GE, 400GE, STM-64, 10GE WAN, OTU2, OTU4, and more.
- **Advanced Networking**: 9-degree ROADM networking for flexible and efficient optical routing.
- **Easy Operation**: Designed with SDN principles and open APIs for seamless service automation and integration. Rapid deployment and management through unified network management platforms, SNMP, Web, NMS, and Netconf/YANG.
- **Reliable Power and Maintenance**: Standard server power supply options (DC-48V/AC 220V/high-voltage DC), with 1+1 protection for the main control card, power supply, and fans. Front panel supports single card hot swapping for quick maintenance.

Parameter		Description
Applications		DCI, Metro, and Long-Haul Transmission
Network Topology		Point to Point, Ring, Mesh
Chassis	Dimensions (H x W x D)	90 mm (H)×440 mm (W)×420 mm (D)
	Maximum Capacity	6.4Tbit/s
	Number of Service Card Slots	8
	Enclosure Type	19" Rack mount, 2U
Line-side Port	Data Rate	100G (PDM_QPSK) programmable 200G (PDM_QPSK) programmable 200G (PDM_16QAM) programmable 400G (PDM_16QAM) programmable
	Optical Module	Pluggable CFP2-DCO or QSFPDD-DCO, wavelength adjustable
Client-side Port	Service Type	400GE/100GE/OTU4 or 10GE/OC-192/STM-64/8GFC/10GFC/16GFC
	Optical Module	Pluggable SFP+, QSFP28, QSFP-DD
Max. Number of Wavelengths		Fixed grid: 96 wavelengths @50 GHz
Channel spacing		Fixed grid: 50 GHz / 75 GHz / 100 GHz / 150 GHz
Central frequency range		191.30THz to 196.05THz
Central wavelength range		1529.16nm to 1567.14nm

Protection Function		Optical line protection (OLP) Optical channel protection (OCHP)
Network Management		Supports main controller 1+1 backup (optional) Support CLI, SNMP, Web, NMS (graphical interface), and Netconf/YANG model interface Support DCN communication based on OSC
Power Supply	Back-up	Standard CRPS power supply 1+1 backup
	AC	Max. voltage range: 90 V AC ~ 264 V AC (50Hz~60Hz)
	HVDC	Rated voltage range: 240 V HVDC Max. voltage range: 192 V HVDC ~ 288 V HVDC
	DC	Max. voltage range: 36 V DC ~ 60 V DC
Heat Dissipation		Forward wind, rear air and FRU Fan 1+1 Fan unit backup
Typical Power Consumption		<800W (Electric layer full match)
Environment	Operating Temperature	-10℃ ~ +45℃
	Storage Temperature	-40℃ ~ +70℃
	Humidity	10%～95% (no condensation)

1.6T DCI BOX

The KanesBridge 1.6T DCI-BOX is a high-speed WDM transmission platform designed for data center interconnection. It delivers exceptional capacity and performance for business access and long-distance transmission, with streamlined operation and maintenance.

1.6T DCI-BOX with 4 x 2x200G Muxponder (4x100G QSFP28 to 2x200G CFP2-DCO)

1.6T DCI-BOX with 4x400G Muxponder (4x100G QSFP28 to 1x400G CFP2-DCO)

Key Features:

- **Ultra-High Capacity**: Delivers up to 1.6 Tb/s per system with single-wave capacities up to 400G.
- **Compact and Modular**: Features a 1U 19" rackmount design with a modular, optoelectronic architecture. Easily configure and upgrade as needed.

- **Service Flexibility**: Supports four service card slots and transparent transmission of 400G OTU. Converts two 100GE signals into one 200G DWDM signal.
- **Comprehensive Service Support**: Compatible with a wide range of services, including 10GE, 100GE, 400GE, STM-64, 10GE WAN, OTU2, and OTU4.
- **User-Friendly Operation**: Simplifies deployment with SDN-based design and open APIs for service automation and integration with any IT environment.
- **Efficient Management**: Offers unified performance monitoring and management through SNMP, Web, NMS, and Netconf/YANG interfaces.

The table below provides a specification summary for KanesBridge 1.6T DCI-BOX.

Parameter		Description
Applications		DCI, Metro, and Long-Haul Transmission
Network Topology		Point to Point, Ring
Chassis	Dimensions (H x W x D)	44 mm (H)×440 mm (W)×535 mm (D)
	Maximum Capacity	1.6Tbit/s
	Number of Service Card Slots	4
	Enclosure Type	19" Rack mount, 1U
Line-side Port	Data Rate	100G (PDM_QPSK) programmable 200G (PDM_QPSK) programmable 200G (PDM_16QAM) programmable 400G (PDM_16QAM) programmable
	Optical Module	Pluggable CFP2-DCO, wavelength adjustable
Client-side Port	Service Type	100GE/OTU4
	Optical Module	Pluggable QSFP28
Channel spacing		Fixed grid: 50 GHz / 75GHz / 100 GHz
Central frequency range		191.30GHz to 196.05GHz
Central wavelength range		1529.16nm to 1567.14nm
Protection Function		Optical line protection (OLP) Optical channel protection (OCHP)
Network Management		Support CLI, SNMP, Web, NMS (graphical interface), and Netconf/YANG model interface
Power Supply	Back-up	Standard CRPS power supply 1+1 backup
	AC	Max. voltage range: 90 V AC ~ 264 V AC (50Hz~60Hz)
	DC	Max. voltage range: 36 V DC ~ 60 V DC
Heat Dissipation		Forward wind, rear air and FRU Fan 1+1 Fan unit backup
Typical Power Consumption		≤ 350W (Electric layer full match)
Environment	Operating Temperature	-10℃ ~ +70℃
	Storage Temperature	-40℃ ~ +80℃
	Humidity	10%～95% (no condensation)

800G DCI-BOX

The KanesBridge 800G DCI-BOX is a versatile WDM transmission platform optimized for small to medium capacity service access and long-distance transmission. Ideal for data center interconnection (DCI), it caters to internet companies, data center operators, enterprises, and cloud service providers.

800GDCI BOX Front and Back

Key Features:

- **High-Speed Capacity**: Provides up to 800 Gbps per system, with single-wave support up to 200G.
- **Modular Flexibility**: Features a pluggable, optoelectronic modular design for easy configuration and upgrades.
- **Compact 1U Design**: Fits into a 19" rackmount, suitable for data centers and common IT equipment cabinets.
- **Broad Service Support**: Handles various services including 10GE, 100GE, STM-64, 10GE WAN, OTU2, and OTU4.
- **Effortless Operation**: Incorporates SDN design with open APIs for seamless automation and integration, enabling rapid service deployment.
- **Unified Management**: Offers comprehensive monitoring and management through SNMP, Web, NMS, and Netconf/YANG interfaces.

The table below provides a specification summary for KanesBridge 800G DCI-BOX.

Parameter		Description
Applications		DCI, Metro Transmission
Network Topology		Point to Point, Ring
Chassis	Dimensions (H x W x D)	44.5 mm (H)×482.6 mm (W)×300 mm (D)
	Maximum Capacity	800Gbit/s
	Number of Service Card Slots	4
	Enclosure Type	19" Rack mount, 1U
Line-side Port	Data Rate	100G (PDM_QPSK) programmable 200G (PDM_16QAM) programmable
	Optical Module	Pluggable CFP2-DCO, wavelength adjustable
Client-side Port	Service Type	100GE/OTU4
	Optical Module	Pluggable QSFP28
Channel spacing		Fixed grid: 50 GHz / 100 GHz
Central frequency range		191.30GHz to 196.05GHz
Central wavelength range		1529.16nm to 1567.14nm
Protection Function		Optical line protection (OLP) Optical channel protection (OCHP)
Network Management		Support CLI, SNMP, Web, NMS (graphical interface), and Netconf/YANG model interface
Power Supply	Back-up	Standard CRPS power supply 1+1 backup
	AC	Max. voltage range: 85 V AC ~ 264 V AC (50Hz~60Hz)

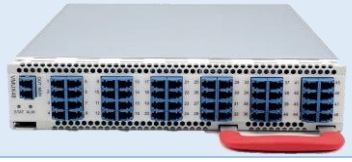
	DC	Max. voltage range: 36 V DC ~ 72 V DC
Heat Dissipation		Forward wind, rear air and FRU Fan
Typical Power Consumption		≤ 150W (Electric layer full match)
Environment	Operating Temperature	-10℃ ~ +60℃
	Storage Temperature	-20℃ ~ +75℃
	Humidity	5%～95% (no condensation)

Pluggable Modules for KanesBridge DCI-BOX

The following are the pluggable modules designed for KanesBridge DCI-BOX Platforms.

Pluggable Module	Description
Power Supply Unit (PSU) 	**Power Supply Unit (PSU)** • **Standard CRPS**: Supports single-disk operation with dual power supplies for load balancing and redundancy.
Dual Main Control Card (NMU) 	**Main Control Card** • **Dual Redundancy**: Supports 1+1 redundancy and hot-swapping with no service interruption. Backup cards maintain full functionality, and new cards integrate without impacting existing services.
2x200G Muxponder Service Card 	**2x200G Muxponder Service Card** • **High Flexibility**: Converts 2x100G signals to 2x100G coherent optical signals or 4x100G signals to 2x200G coherent optical signals.
400G Muxponder Service Card 	**400G Muxponder Service Card** • **Efficient Conversion**: Converts 4x100G signals into 1x400G coherent optical signal.
400G Muxponder (QDD) Service Card	**400G QDD Muxponder Service Card** • **Single Wavelength**: Converts 4x100G signals into 1x400G single-wavelength coherent optical signal.

	
400G OEO Service Card 	**400G OEO Service Card** • **Versatile Trunks**: Supports wavelength conversion and regeneration for up to eight 400G QSFP-DD modules.
2x400G Transponder Service Card 	**2x400G Transponder Service Card** • **High Capacity**: Converts up to two 400G QSFP-DD signals into CFP2 signals.
T10 Muxponder Service Card 	**T10 Muxponder Service Card** • **Customizable Access**: Supports 1x100G or 10x10G plus 1x100G on the customer side, and 1x200G on the line side with QSFP28, SFP+, and CFP2 modules.
T20 Muxponder Service Card 	**T20 Muxponder Service Card** • **High Density**: Supports 20x10G on the customer side and 1x200G on the line side with SFP+ and CFP2 modules.
100G/200G CFP2 OTU Muxponder Card 	**100G/200G CFP2 OTU Muxponder Card** • **Dual Conversion**: Converts 2x100G signals to 1x200G DWDM signal or 1x100G signal to 1x100G DWDM signal.
Gain Tunable Optical Amplifier Card (GTOA) 	**Wide Gain Optical Amplifier (GTOA) Card** • **End Station Amplification**: Amplifies optical signals in both directions with adjustable gain, operating in AGC mode.
Gain Untunable Optical Amplifier Card (GUOA) 	**Gain Untunable Optical Amplifier (GUOA) Card** • **Compact Amplification**: Provides unidirectional power amplification with adjustable gain, operating in AGC mode.

Input Power Variable Optical Amplifier (IPVOA) 	**Input Power Variable Optical Amplifier (IPVOA) Card** • **Site-Specific Amplification**: Amplifies unidirectional signals with adjustable attenuation, operating in AGC mode.
Raman Fiber Amplifier Card (RFA) 	**RFA Service Card** • **Advanced Amplification**: Utilizes multi-pump technology for flat gain and low-noise amplification in the C-band; adjustable current and real-time monitoring.
48-Channel Optical Mux Unit (OMU48) 	**48-Channel Passive Mux Unit (OMU48)** • **Wavelength Multiplexing**: Supports 48-channel DWDM multiplexing with even and odd wavelength options.
48-Channel Optical DeMux Unit (ODU48) 	**48-Channel Passive DeMux Unit (ODU48)** • **Wavelength Demultiplexing**: Supports 48-channel DWDM demultiplexing with even and odd wavelength options.
48-Channel Optical DeMux Unit (VMU48) 	**48-Channel Passive Mux/DeMux Unit (VMUX48)** • **Adjustable Multiplexing**: Provides 48-channel DWDM multiplexing with adjustable channel attenuation; even and odd wavelength options.
1x9 Wavelength Selective Switch (1x9WSS) 	**1x9 Wavelength Selective Switch (WSS)** • **Advanced Routing**: Integrates WSS, EDFA, and VOA functions for dynamic wavelength routing and network service flexibility.
Optical Add/Drop Service Card (OADM) 	**Optical Add/Drop Multiplexer (OADM)** • **Customizable Wavelengths**: Supports 4 untunable wavelengths with built-in VOA, power calibration, and expansion cascades.
Optical Service Channel Card (OSC)	**Optical Service Channel (OSC) Card**

	• **Signal Multiplexing**: Manages multiplexing and demultiplexing of OSC and service signals.
Optical Channel Monitoring Service Card (OCM) 	**Optical Channel Monitoring (OCM) Card** • **Comprehensive Monitoring**: Monitors 48/96 channels for service wavelengths and optical power across combined signals.
Optical Line Protection Service Card (OLP) 	**Optical Line Protection (OLP) Card** • **Protection Solutions**: Provides 1+1 protection for optical cable routing or service channels.

2.2. KanesBridge Optical Transport System

KanesBridge OTS delivers high-capacity transmission for a range of access services, offering exceptional service integration, port density, and configuration flexibility. Ideal for telecom operators, broadcasters, utilities, education, cloud computing, and information security, this platform is designed for both national and local network infrastructures.

Key Features:

- **Ultra-Large Capacity:** Supports 100G, 200G, and 400G single-wave rates for maximum throughput.
- **Scalable and Flexible:** Compact design with powerful scalability to adapt to growing network demands.
- **Multi-Service Integration:** Seamlessly handles SDH, SONET, Ethernet, SAN, OTN, and Video services.
- **Advanced Networking:** Offers single-fiber unidirectional and bidirectional, as well as dual-fiber bidirectional transmission modes.
- **Vendor Interoperability:** Ensures client access and interoperability across different vendors.
- **Dynamic Wavelength Management:** Supports multiple transmission wavelengths with add/drop capabilities at intermediate nodes via OADM.
- **Efficient Management:** User-friendly graphical interface with Web and NetRiver management based on SNMP for easy fault detection and maintenance.
- **Redundant Power Supply:** Features 1+1 power hot-swappable redundancy with optional AC/DC power supplies for uninterrupted operation.

Components:

- **Unloaded Management Platforms (Chassis)**
- **Service Cards**
- **Optical Modules**

Transform your network with KanesBridge OTS, where cutting-edge technology meets unmatched performance.

KanesBridge OTS-C1: 1U Chassis

KanesBridge OTS-C2: 2U Chassis

KanesBridge OTS-C4 & OTS-C5: 4/5U Chassis

A wide range of service cards are pluggable to KanesBridge OTS platforms, including EDFA, OCM, OTDR, TDCM, RFA, OBP, DVOA, OLP, and OSS.

EDFA Card

OCM Card

OTDR Card

TDCM Card

RFA Card

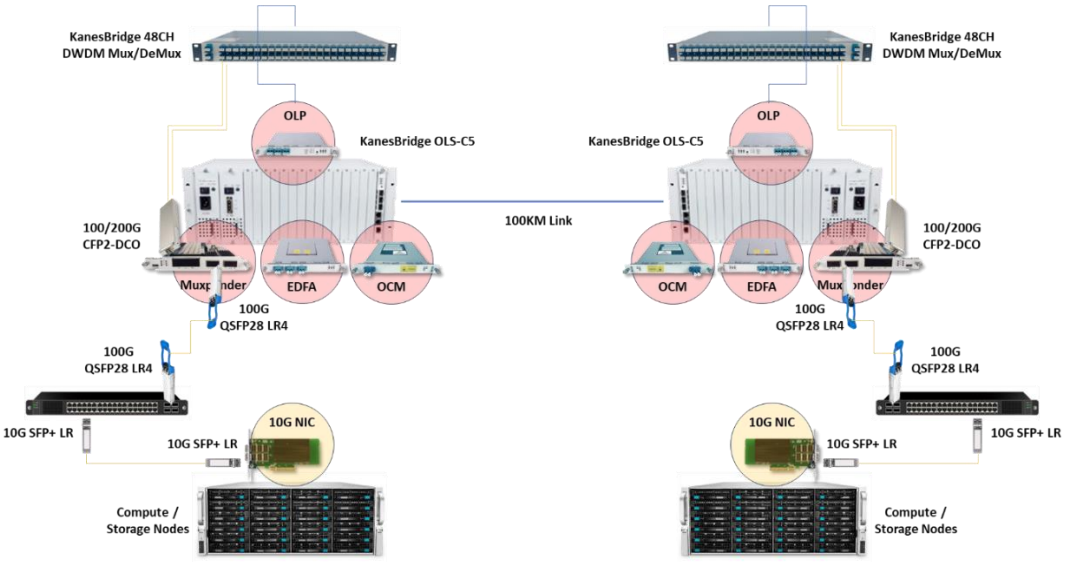
OBP Card

DVOA Card

OLP Card

OSS Card

The diagram below illustrates one of the application scenarios, 100KM Long-Haul DWDM Solution.



100KM Long-Haul DWDM Solution with KanesBridge OTS

The table below provides a specification summary for KanesBridge OTS platforms.

Specification	KanesBridge OTS Platforms			
Chassis	1U	2U	4U	5U
Size (H x W x D)	44mm x 440mm x 285mm	88mm x 440mm x 285mm	176mm x 440mm x 285mm	220mm x 440mm x 285mm
Service Card Slots	4	8	16	20
Power Consumption	≤120W	≤200W	≤300W	≤400W
Client-Side Rate/ Service Type	100GE/OTU4 or 10GE/OC-192/STM-64/8GFC/10GFC/16GFC			
Line-Side Rate	100G/200G/400G			
Modulation	16QAM, 16QAMPS, QPSK			
Operating Temperature	-10 to 70°C			
Storage Temperature	-40 to 80°C			
Power Supply	AC: 90V to 264V, 50/60Hz DC: 36V to +60V)			

2.3 KanesBridge Open Line System

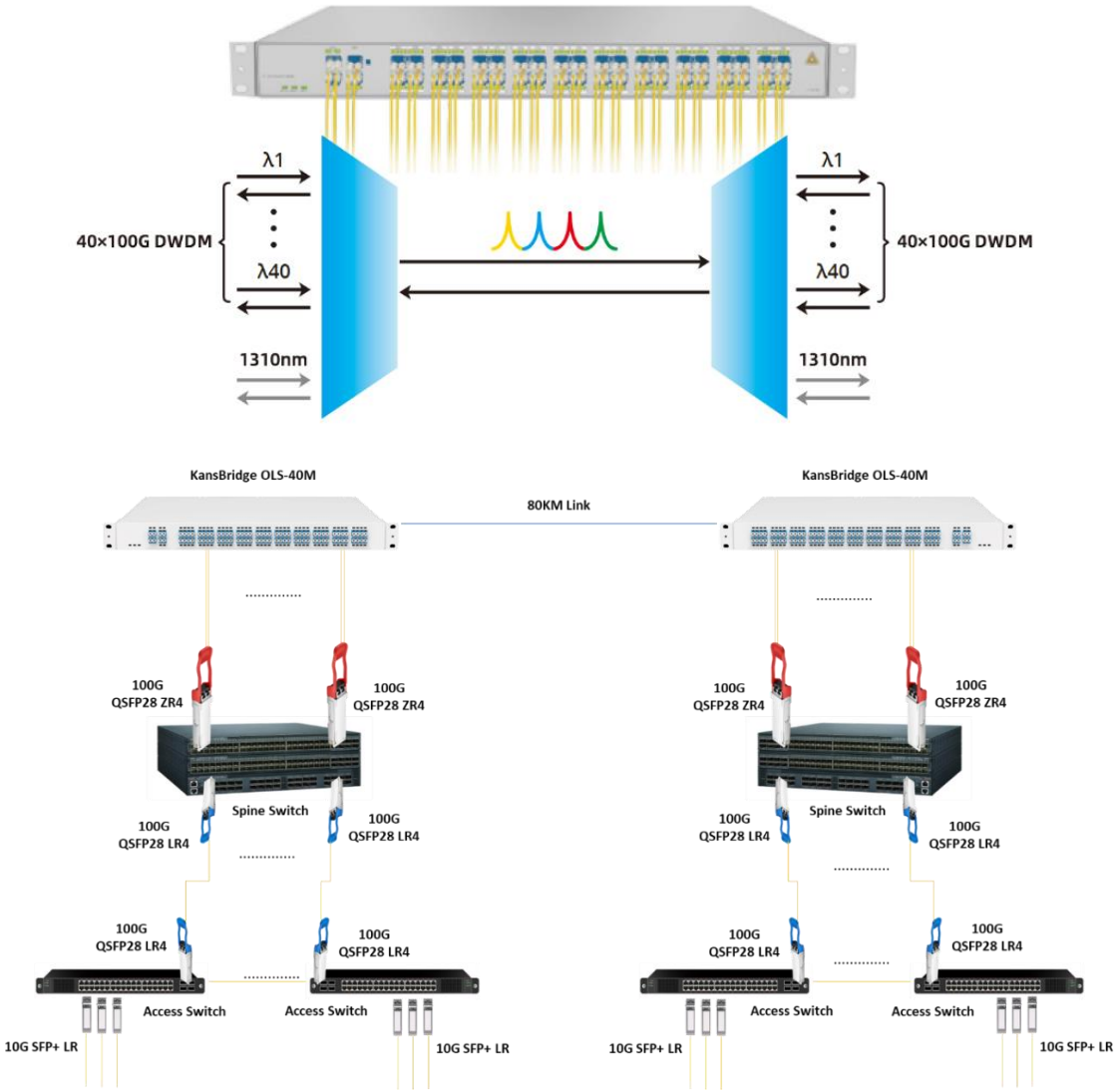
KanesBridge Open Line System (OLS-40M) offers a versatile optical networking solution that eliminates vendor lock-ins, enabling you to build efficient, cost-effective networks using top-tier components from multiple manufacturers. With seamless integration through APIs and open-source solutions, the OLS-40M enhances data transfer efficiency and reduces power consumption through its zero-touch automatic optical setup.

KanesBridge OLS-40M

Key Features:

- **Versatile Signal Support:** Handles various DWDM signals including PAM4 (40G/100G), NRZ (1-32G), and Coherent (OPSK/80AM/16QAM).
- **Advanced Monitoring:** Real-time, high-precision monitoring of 40CH TX/RX, 1310 TX/RX, and COM port power.
- **Expansion & Channels:** Supports 1310nm expansion channels and OSC channels.
- **Adaptive Compensation:** Dynamic dispersion and power compensation for optimized performance.
- **Fault Detection:** Monitors fiber link length, faults, and locations.
- **Robust Protection:** Features 1+1 optical line protection for enhanced reliability.
- **User-Friendly Interface:** Visual port service status with dual-color LED alarms and centralized power monitoring for 40 service ports.
- **Management Flexibility:** Easy management through Web/SNMP interfaces.

The diagram below illustrates one of the application scenarios: DCI 80KM Transmission with KanesBridge OLS.



DCI 80KM Transmission Solution with KanesBridge OLS

3. Coherent DCI/OTN Products

In a fast-evolving communication landscape, the need for flexible and cost-effective data center connectivity is crucial. The Coherent Optical Transport System GS2000 meets these demands with its compact, high-performance DWDM solution. Built on Coherent Inc.'s extensive expertise and top-tier components like laser chipsets, EDFA, OCM, OTDR, and WSS, GS2000 offers unmatched efficiency and cost savings.

3.1 Coherent Optical Transport System (GS2000)

The GS2000's open line system (OLS) enables rapid network deployment without vendor lock-in, reducing overall costs while maximizing performance. Its high integration saves floor space and power, integrating features such as a gain-switchable amplifier, Optical Channel Monitor (OCM), and Optical Time Domain Reflectometer (OTDR) in a single unit. Ideal for telco operators, ISPs, governments, and enterprises, GS2000 addresses diverse needs with high capacity and reliability.

COHERENT

GS2000 Front

GS2000 Back

Key Features of Coherent GS2000:

- **Fully Modular Design:** Optoelectronic integration with pluggable modules; easy on-demand configuration and seamless upgrades.
- **Compact 19" Rackmount (2U):** Fits into ETSI 19", 21", and 23" racks; space-efficient for data centers.
- **3.2TB/s High Capacity:** Delivers up to 3.2Tbit/s per system; single wave capacity up to 400G, with future-proofing for 600G, 800G, and 1.2T.
- **Versatile Optical Service Cards:** Includes OA, WSS, VOA, OSC, OTDR, OCM, and OLP; simplifies fiber connectivity.
- **Broad Client Services:** Supports 10GE, 100GE, 100GE FlexE (Unaware), 400GE, STM-64, 10GE WAN, OTU2, OTU4, and more.
- **Advanced Networking:** Features 9-degree ROADM and FlexGrid for versatile network configurations.
- **Robust Protection:** Multi-layer, network-level, and device-level protection with reversal delay <50ms.
- **User-Friendly Operation:** SDN-based design with open APIs for automation and quick service deployment.
- **Unified Management:** Comprehensive network management via SNMP, Web, NMS (graphical interface), and Netconf/YANG.

Parameter		Description
Applications		DCI, Metro, and Long-Haul Transmission
Network Topology		Point to Point, Ring, Mesh
Chassis	Dimensions (H x W x D)	89 mm (H)×440 mm (W)×483 mm (D)
	Maximum Capacity	3.2Tbit/s
	Number of Service Card Slots	8
	Enclosure Type	ETSI 19'', 21'', 23'' Rack Mount, 2U
Line-side Port	Data Rate	100G (PDM_QPSK) programmable 200G (PDM_QPSK) programmable 200G (PDM_8QAM) programmable 200G (PDM_16QAM) programmable 400G (PDM_16QAM) programmable 1,2T programmable
	Optical Module	Pluggable CFP2-DCO, wavelength adjustable
Client-side Port	Service Type	10GE, STM64, 10GWAN, 100GE, OTU4
	Optical Module	Pluggable SFP+, QSFP28
Max. Number of Wavelengths		Fixed grid: 96 wavelengths @50 GHz
Channel spacing		Fixed grid: 50 GHz / 75 GHz / 100 GHz / 150 GHz
Central frequency range		191.35THz to 196.15THz
Central wavelength range		1528.37nm to 1566.7nm
Protection Function		Optical line protection (OLP) Optical multiplexed segment protection (OMSP) Optical channel protection (OCHP)
Network Management		Supports main controller 1+1 backup (optional) Support CLI, Web LCT, NETCONF, GUI management platform based on B/S architecture Support DCN communication based on OSC
Power Supply	Back-up	Standard CRPS power supply 1+1 backup
	AC	Max. voltage range: 90 V AC to 264 V AC (47 Hz to 63 Hz)
	HVDC	Max. voltage range: 164~320V HVDC
	DC	Max. voltage range: -40 V DC ~ -72 V DC
Heat Dissipation		Front inlet air and rear outlet air 2+1 Fan unit backup
Typical Power Consumption		<550W (Electric layer full match)
Environment	Operating Temperature	0℃ ~ +40℃
	Storage Temperature	-40℃ ~ +70℃
	Humidity	5%～85% (no condensation)

KanesBridge Product 2024

Optical DCI/OTN Products

KanesBridge Technology
5 Carronshore Close
Balwyn, Victoria 3103
AUSTRALIA
P: +61 434306783
E: sales@kanesbridge.com
www.kanesbridge.com