

# GIGALIGHT 2026 NEWS PAPER



2026 AI&DC Interconnect New Design

## HYBRID AI&DC New Design

Innovative Products | Patent-Backed

### Traditional Solutions VS HYBRID Solutions

|                   |  |                         |     |
|-------------------|--|-------------------------|-----|
| Power Consumption |  | Lower Power Consumption | 30% |
| Latency           |  | Ultra-lower Latency     | 50% |
| Cost              |  | Better Cost Performance | 30% |

#### Hybrid Architecture Equivalent ACC

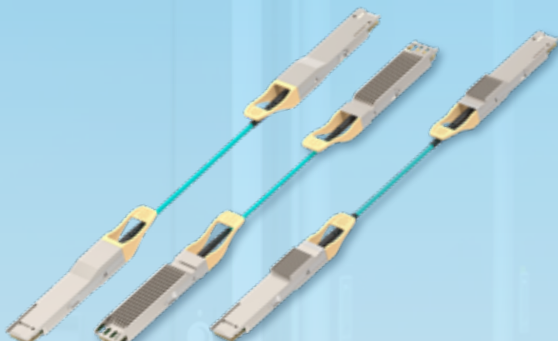
Active Copper Cable



- 800G OSFP HYBRID ACC+
- 800G QSFP-DD HYBRID ACC+
- 1.6T OSFP224 HYBRID ACC+

#### Hybrid Architecture Equivalent AOC

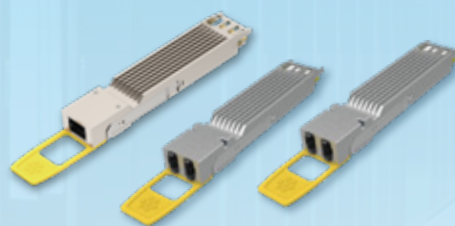
Active Optical Cable



- 400G QSFP-DD HYBRID VR8-AOC
- 800G OSFP HYBRID VR8-AOC
- 800G OSFP-PHO 2XDR4 TO 2X400G DR4AOC-Siph
- 1.6T OSFP224-PHO 2XDR4 TO 2X800G DR4 AOC- Siph

#### PHO (Pluggable Hybrid Optics) Architecture SiPh Transceivers

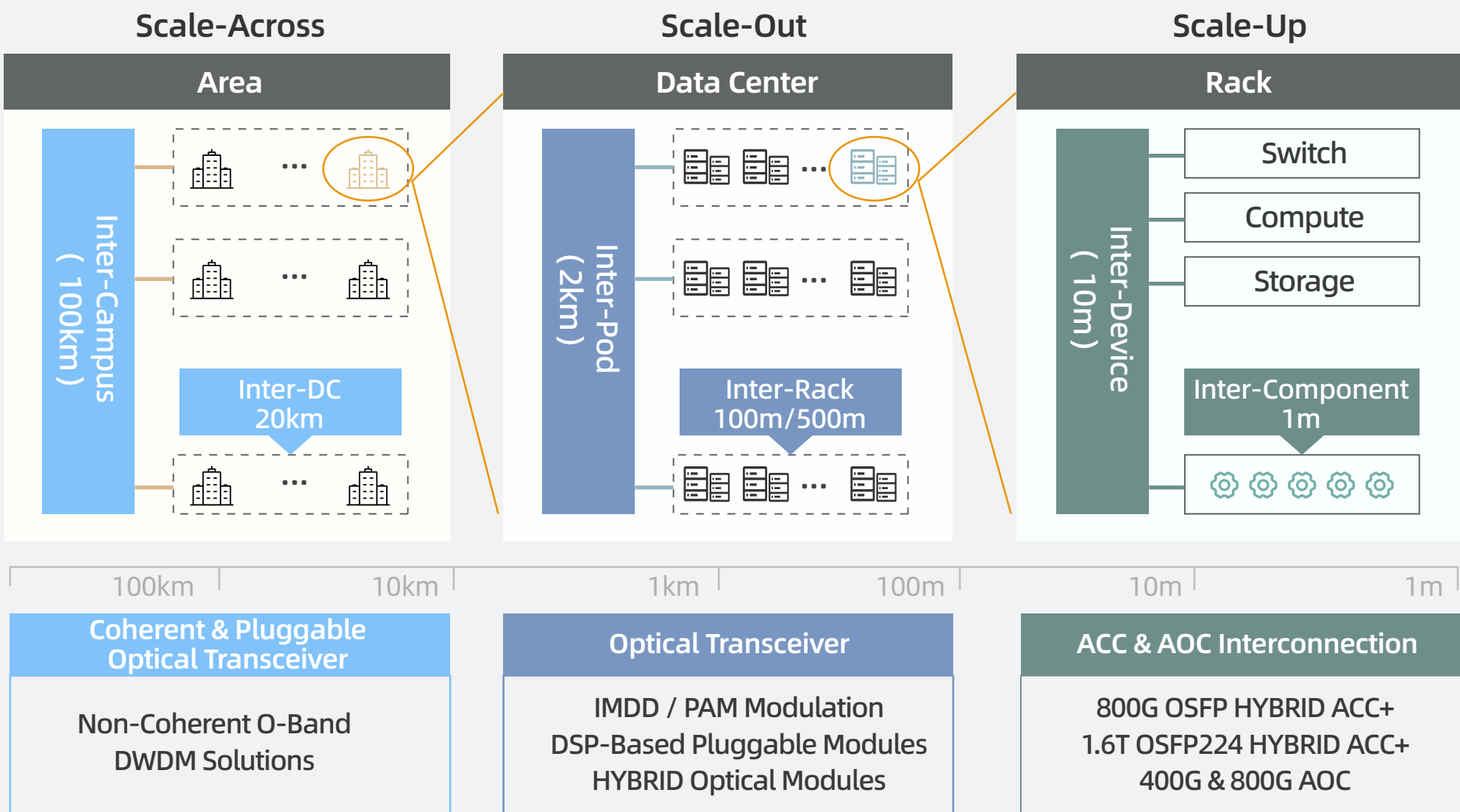
SiPh



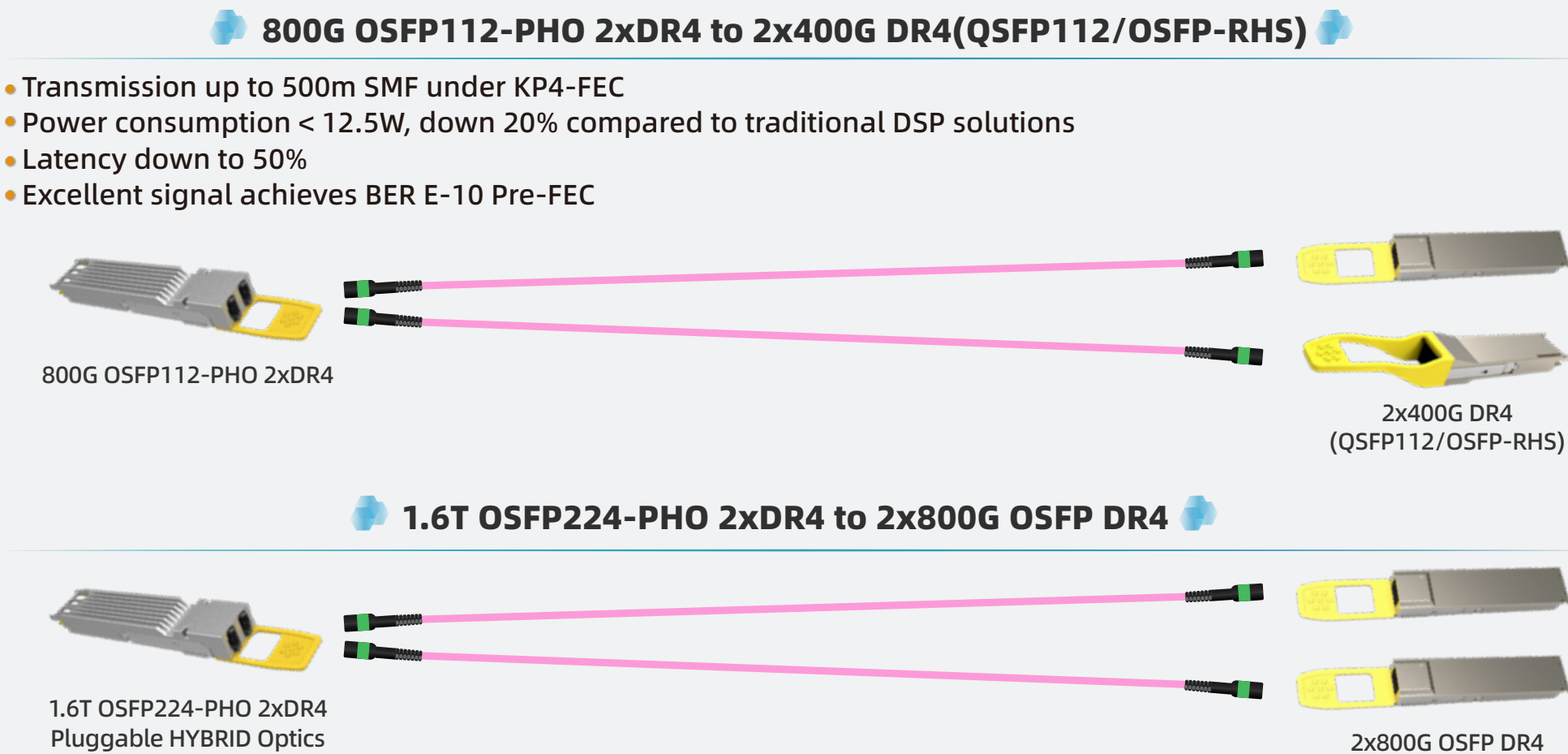
- 800G OSFP-PHO DR8
- 800G OSFP-PHO 2XDR4
- 1.6T OSFP224 -PHO 2XDR4

## HYBRID SOLUTIONS

### Evolution of GIGALIGHT AI Interconnection



### Heterogeneous Interconnection



| Dimension         | Mainstream DPO Solutions  | Pluggable Hybrid Optics Solution | Improvement            |
|-------------------|---------------------------|----------------------------------|------------------------|
| DSP Channel Usage | 8 channels                | 4 channels (2:2 DSP)             | Saves 50% of resources |
| Power Consumption | High (Thermal bottleneck) | LOW                              | Reduced by >30%        |
| BOM Cost          | High                      | LOW                              | Reduced by 30%         |
| Signal Latency    | Standard                  | LOW                              | Reduced by 50%         |

# GIGALIGHT AI & DC 800G & 1.6T SOLUTIONS

## 800G Solutions

### 800G OSFP/QSFP-DD VR8

- Dual MPO12/APC for OSFP
- RHS or IHS for OSFP
- Single MPO16/APC for QSFP-DD
- Power Consumption < 13.5W
- 850nm VCSEL on OM3 60M



### 800G OSFP/QSFP-DD DR8

- Dual MPO12/APC for OSFP
- Single MPO16/APC for QSFP-DD
- Silicon Modulators
- Power Consumption < 16W
- 1310nm on SMF 500M



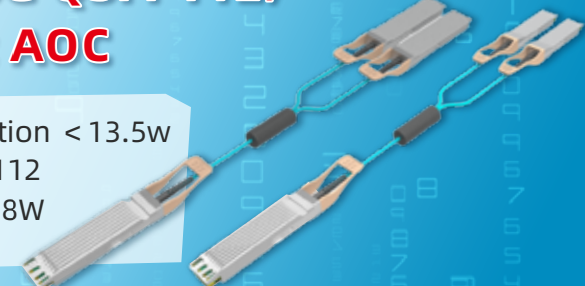
### 800G OSFP/QSFP-DD 2XFR4

- Dual Duplex LC
- Silicon Modulators
- Power Consumption < 16W
- 2X CWDM4 on SMF 2KM



### 800G to 2X 400G QSFP112/OSFP Breakout AOC

- 800G Power Consumption < 13.5W
- 400G OSFP RHS/QSFP112
- Power Consumption < 8W
- OM3 60M



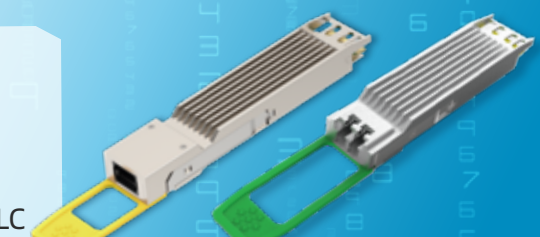
### 800G OSFP/QSFP-DD FR8

- Duplex LC
- 8-Channel EML LWDM Integrated TOSA
- Power Consumption < 16W
- SMF 2KM



### 800G OSFP112 DR4/FR4

- 4X 200G PAM4
- OSFP112
- DR4 1310nm 500m
- Single MPO12/APC
- FR4 CWDM4 2km Duplex LC



### 800G OSFP/QSFP-DD ACC

- OSFP/OSFP RHS/QSFP-DD Options Available
- up to 5M
- Per-Port Power Consumption < 2.5 W
- Built-in EQ Electrical Chip



### 800G OSFP to 2x 400G QSFP112/OSFP ACC

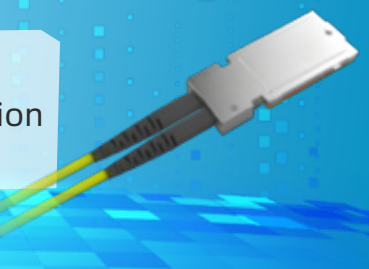
- OSFP / OSFP RHS / QSFP-DD Options Available
- up to 5M
- Per-Port Power Consumption < 2.5 W
- Built-in EQ Electrical Chip



## 1.6T Solutions

### 1.6T DR16 NPO Silicon Photonic Engine

- 16x100G PAM4
- Supports up to 500 m transmission
- Power Consumption < 16W



### EL-OSFP External Light Source

- Front-Facing Optical Port Design
- Supports 16-channel CWL high-power light sources



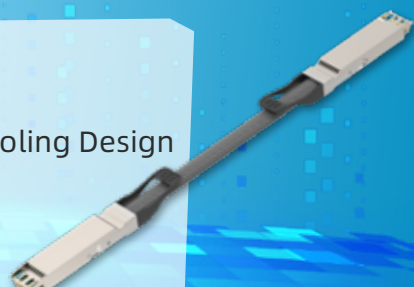
### 1.6T OSFP224 DR8 **PRELIMINARY**

- 200G PAM4 Single-channel Silicon Photonic Modulator
- Integrated with 3nm DSP
- Supporting Immersion Liquid Cooling Design
- 2X MPO-12/APC
- 500M
- Power Consumption < 26W



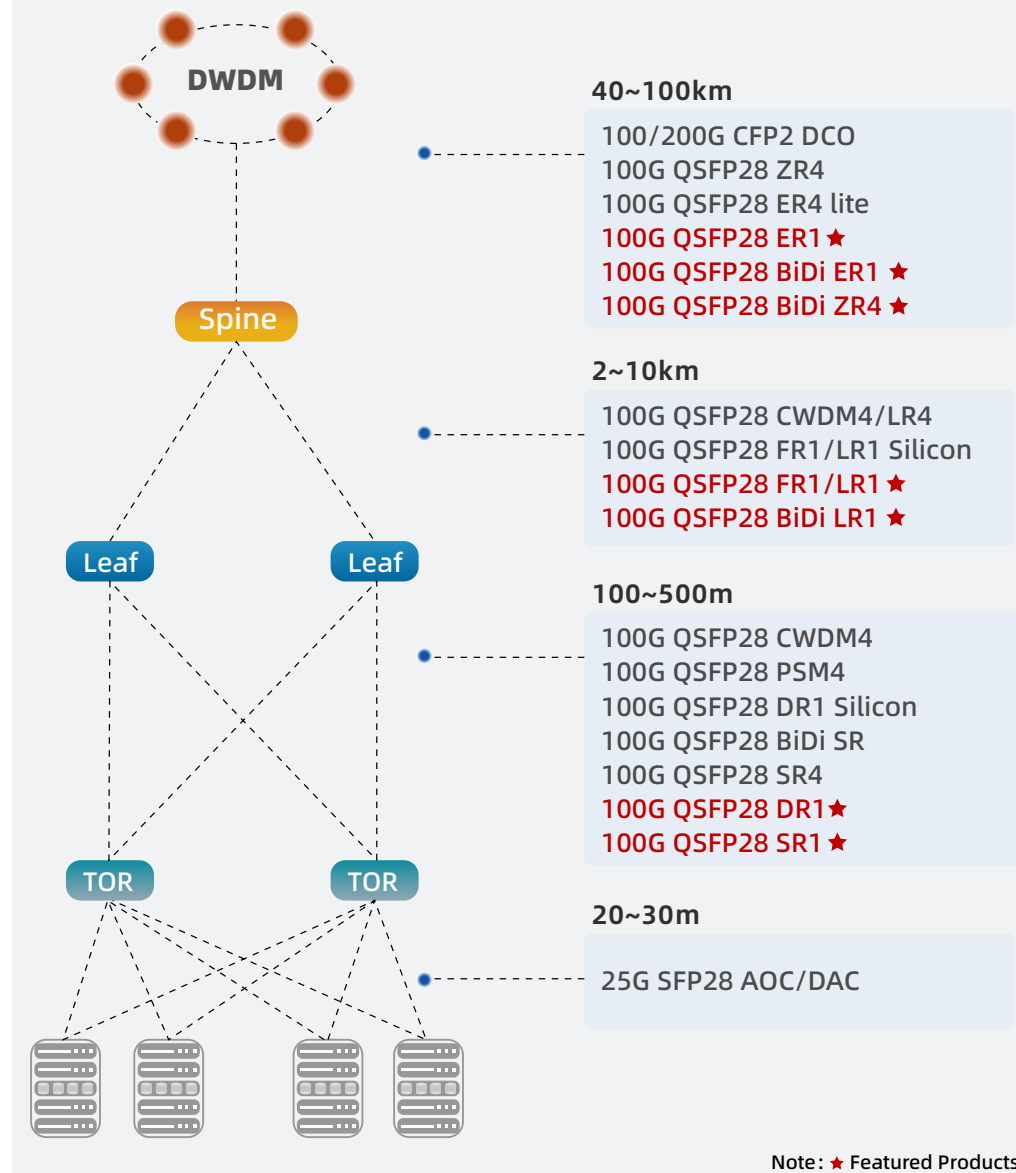
### 1.6T OSFP224 ACC

- 200G PAM4 Single-channel
- Active Cable Design
- Supports Immersion Liquid Cooling Design
- OSFP RHS Option Supported
- Length < 3M
- Power Consumption < 2.5W

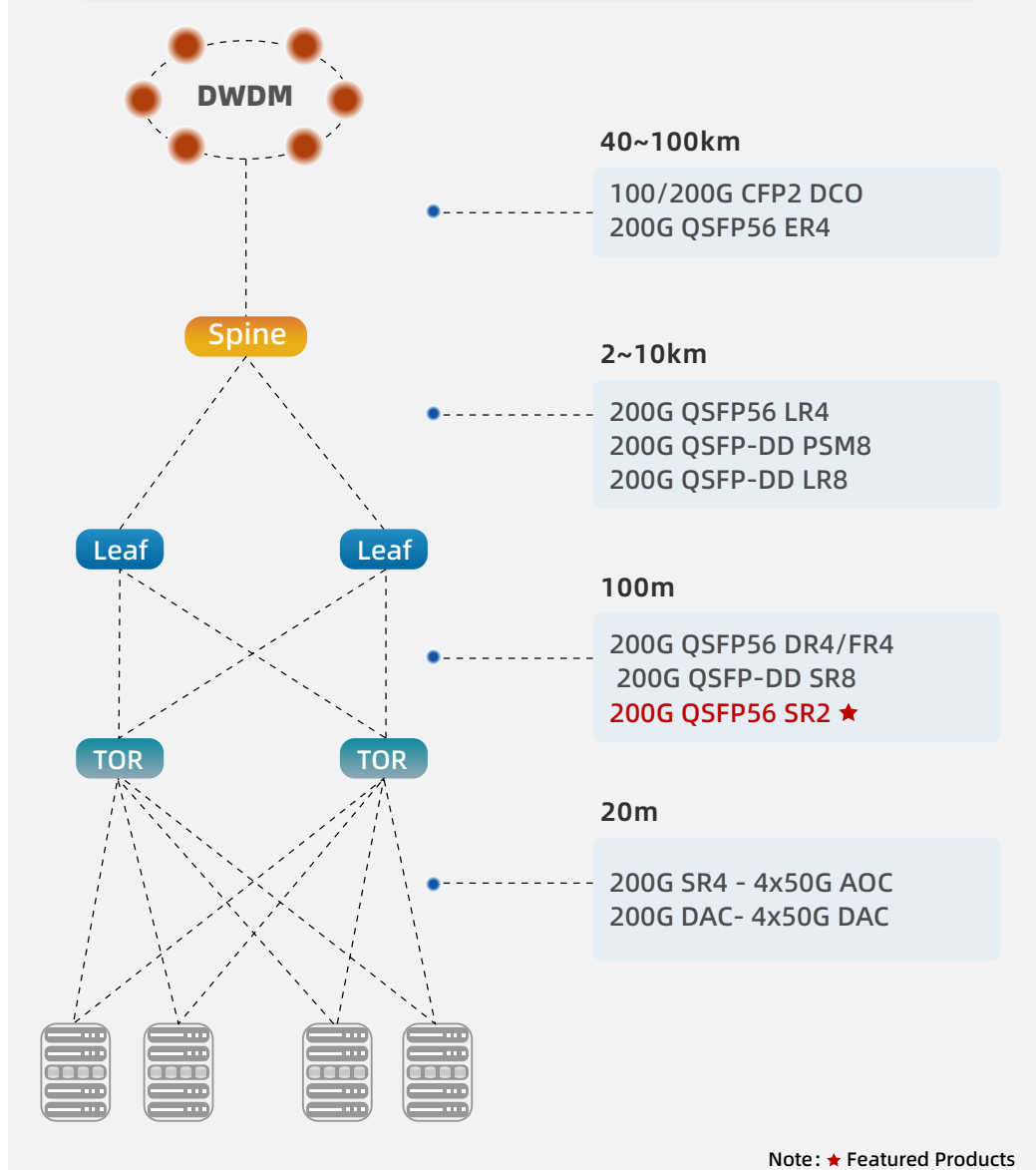


# 100G / 200G / 400G DATA CENTER PRODUCT LINE

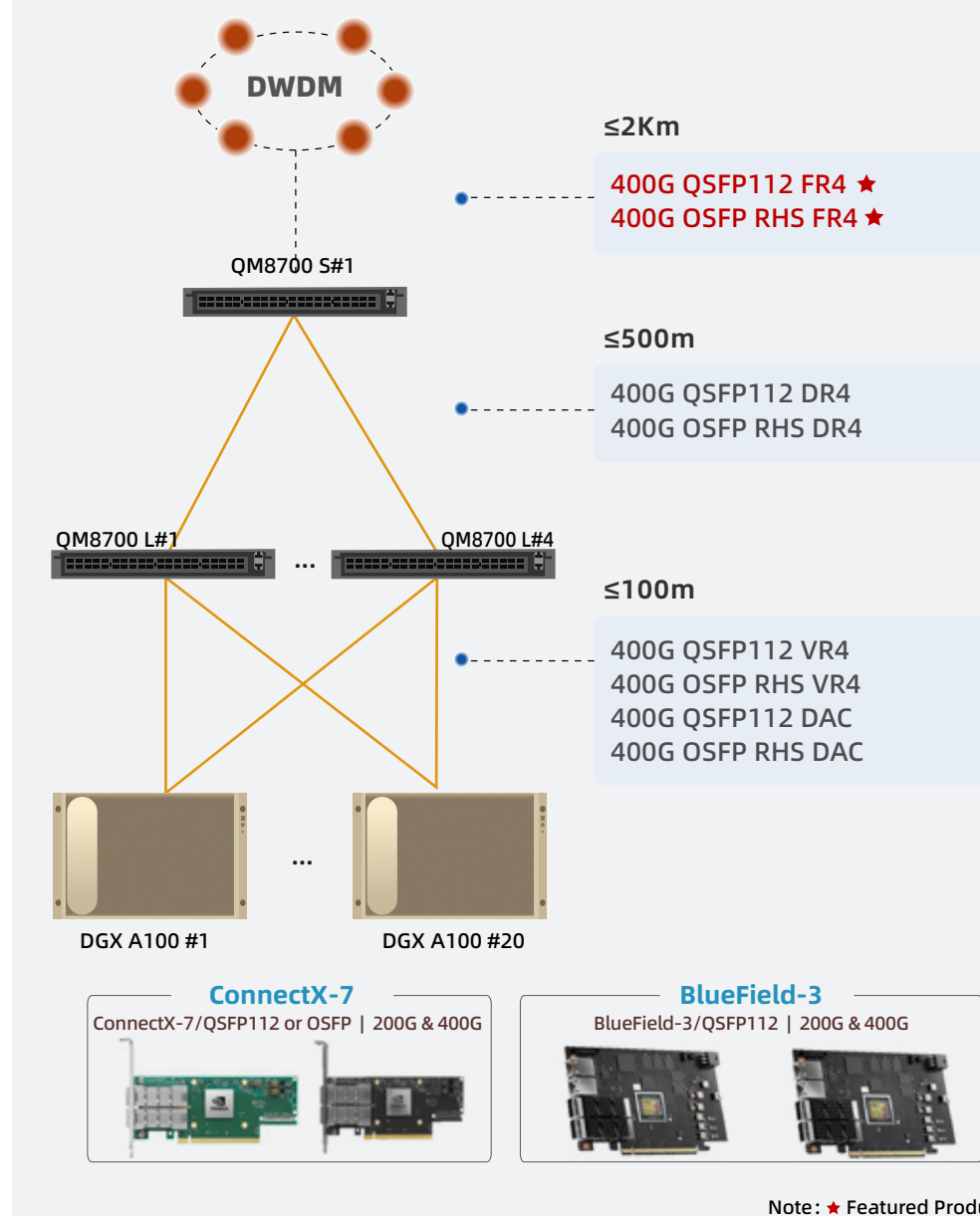
## 100G Data Center Architecture and Products



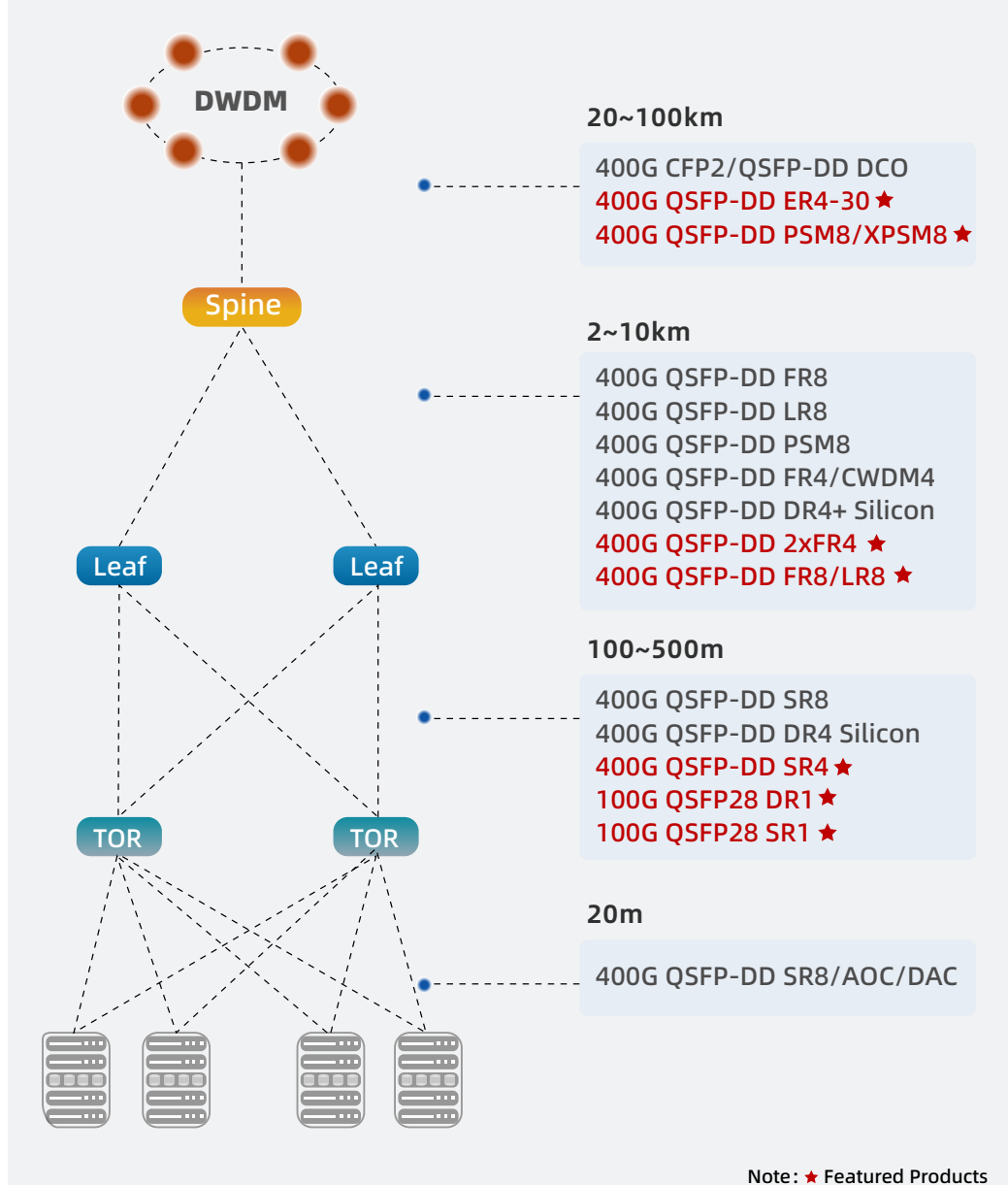
## 200G (4X50G PAM4 & 8X25G NRZ) Data Center Architecture and Products



## 400G AI Compute Data Center Architecture and Products



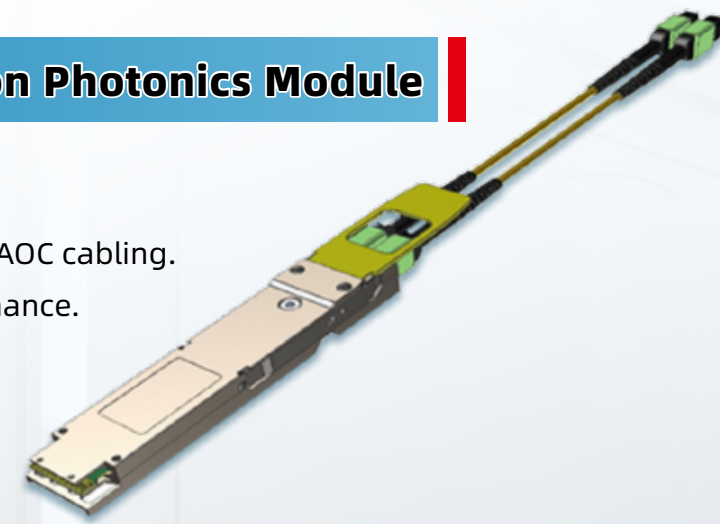
## 400G Data Center Architecture and Products



# AI & DATA CENTER IMMERSION LIQUID-COOLING INTERCONNECT SOLUTION

## Immersion Liquid-cooling 800G OSFP DR8 Silicon Photonics Module

- **Robust & Reliable:** Pressure-resistant sealed housing (>0.2 MPa) with patented design, ensuring superior heat dissipation and liquid-cooling adaptability.
- **Flexible Connectivity:** Pluggable Dual MPO12 pigtail, perfect for liquid-cooled modules and AOC cabling.
- **SiPh Advantages:** High integration, low power, cost efficiency, and ultra-high-speed performance.
- **Future-Proof:** Supports QSFP112, QSFP-DD, OSFP, OSFP RHS – scalable from 100G to 800G and ready for 1.6T.
- **Liquid Compatibility:** Works with fluorinated fluids, mineral oil, and silicone oil.



## Single-Mode Silicon Photonics Liquid-Cooled Optical Module Series

| Data Rate | Form Factor | States  | Notes                         |
|-----------|-------------|---------|-------------------------------|
| 400G DR4  | QSFP112     | samples | Inphi DSP + silicon solution  |
| 400G DR4  | OSFP RHS    | samples | Inphi DSP+ + silicon solution |
| 800G DR8  | OSFP        | samples | Inphi DSP++ silicon solution  |

## New Immersion Liquid-Cooled Extenders

- Multi-Form Factor: SFP, QSFP, QSFP-DD, OSFP
- Wide Speed Coverage: 10G-800G

- **High-Speed Design:** Supports up to 0.5m extension with patented fish-shaped design
- **Wide Compatibility:** Works with QSFP28, QSFP-DD, OSFP, SFP112; 25G-800G and future 1.6T
- **Efficient Cooling:** 1.5W silent fan ensures excellent heat dissipation
- **Smart Indicators:** Visual monitoring for frequent port use, prolonging port life

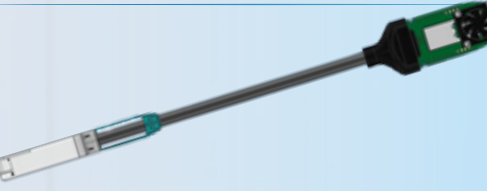
800G OSFP Liquid-Cooled Extender with Heat Sink



800G OSFP-RHS Liquid-Cooled Extender



800G QSFP-DD Liquid-Cooled Extender



100G SFP112 Liquid-Cooled Extender



400G QSFP-DD Liquid-Cooled Extender



200G QSFP56/100G QSFP28 Liquid-Cooled Extender



## Immersion Liquid-Cooled DAC Product Line

### 25G/100G Liquid-Cooled DAC

- **Robust Design:** Shielded mesh and liquid-cooled DAC process, avoiding compatibility concerns with PVC-covered air-cooled DACs
- **Flexible Cabling:** Default 26AWG wires, other wire gauges supported

### 400G/800G Liquid-Cooled DAC/ACC

- **Durable Design:** Shielded mesh structure, compatible with both liquid-cooled and air-cooled environments
- **Tested Performance:** SI parameters verified under liquid-cooling conditions, ensuring reliable liquid-cooling application



# NEXT-GENERATION 1.6T/3.2T NPO INTERCONNECT SOLUTION

coming soon

The 1600G NPO DR16 silicon photonics engine based on linear direct-drive technology is one of GIGALIGHT's innovative product lines designed for the next generation of optical networks. This 1600G linear NPO silicon photonics engine adopts a socket-based packaging and integrates LPO (Linear Pluggable Optics) linear direct-drive technology. By eliminating the DSP chip, the linear NPO silicon photonics engine significantly reduces system-level power consumption and overall cost, while improving system energy efficiency and reliability.

In addition, GIGALIGHT's 3.2T (16x200G PAM4) NPO silicon photonics solution is also under parallel development.

## Product Highlights

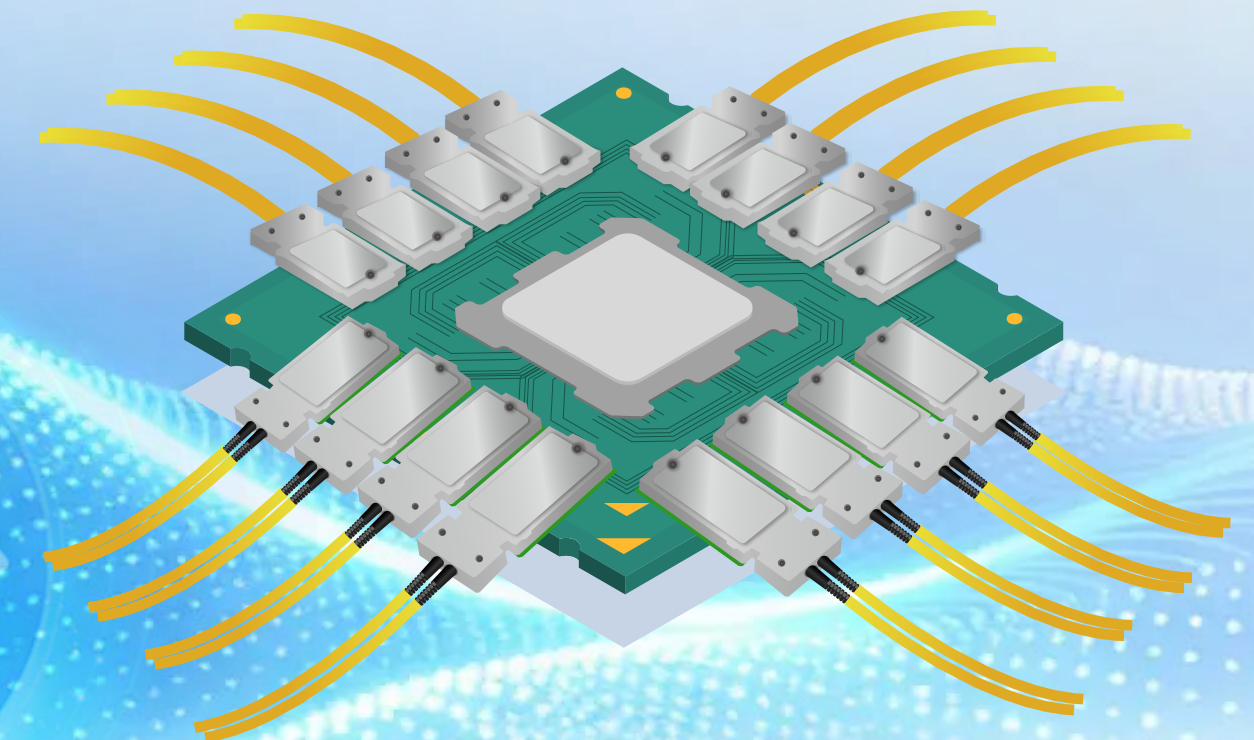
- 1.6T NPO DR16 Silicon Photonics Engine
- 16x100G PAM4
- Supports up to 500m transmission
- Power Consumption < 16W
- EL-OSFP External Light Source Module
- Front Optical Port Design
- Supports 16-channel high-power CWL light sources

1.6T NPO DR16



EL-OSFP External Light Source

## Applications



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# O-BAND INNOVATIVE NON-COHERENT AND COHERENT SOLUTIONS

## O-Band DWDM Optical Transceivers and Subsystems

Preliminary

### Color X 800G OSFP/QSFP-DD PSM DWDM4 O-Band

- 4x224G PAM4 silicon photonic MZ modulation technology
- MPO Connector



### Color X 400G QSFP-DD PSM DWDM4 O-Band

- 30-wavelength O-BAND DWDM,
- 200 GHz spacing
- Up to 15 km and 30km under SOA
- Power consumption <12.75W

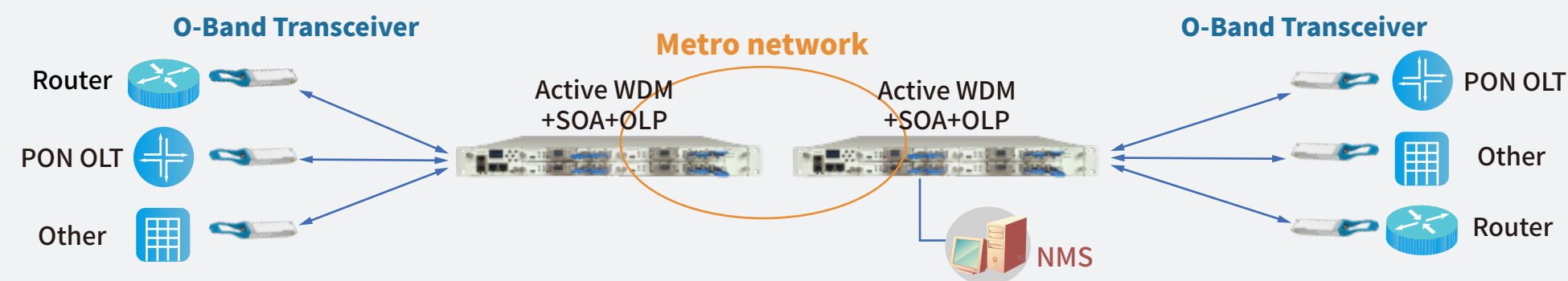


### Color X 100G QSFP28 DWDM1 O-BAND

- 30-wavelength O-BAND DWDM,
- 200 GHz spacing
- Up to 15 km and 30km under SOA
- Power consumption <12.75W

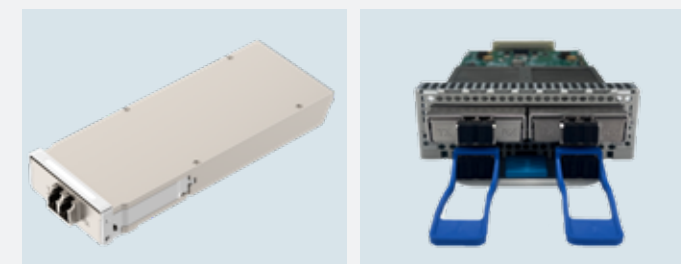


### Color X O-Band DWDM Subsystem

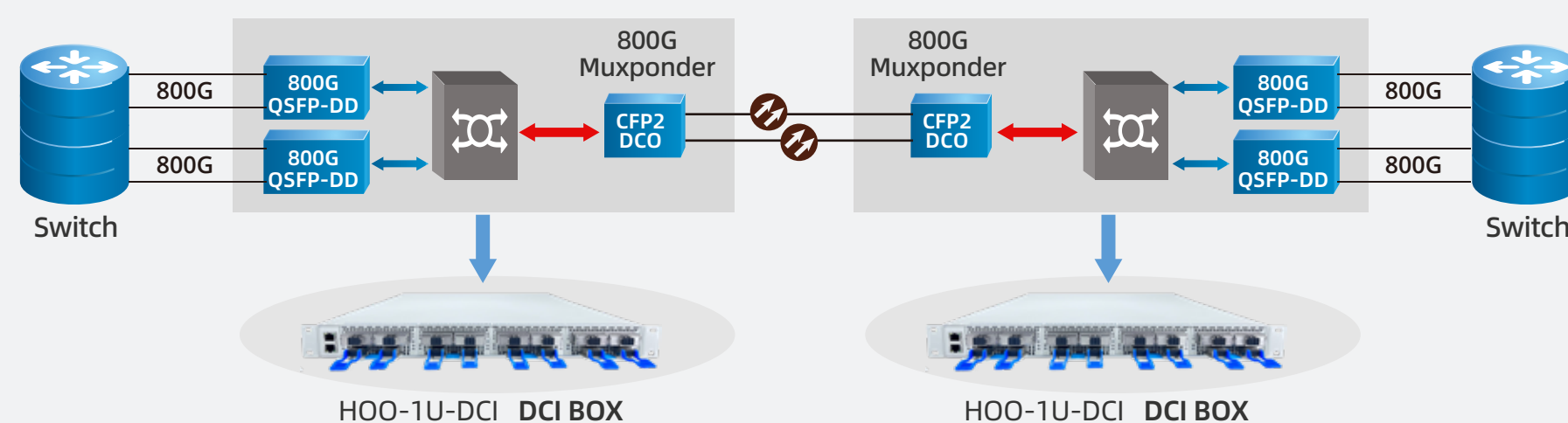


## Single-wavelength 800G DCI Coherent Solution

- DWDM Support: Enables wavelength conversion and DWDM transmission.
- High Capacity: Features a flexible architecture based on 800G CFP2-DCO technology.
- Throughput: Single card supports 2x 800G channels (Uni/Bi-directional).
- Line Interface: Accepts 2x 800G CFP2-DCO modules; supports OFEC.
- Client Interface: Supports 800G QSFP-DD (SR8, FR8, DR8, DR8+).
- Standardization: Uses Standard MSA pluggable modules.
- Reach: 800G: Metro applications up to 200km. 400G: Long-haul applications up to 1000km.



| Parameter         | Mode          | Typ  | Max | Unit     |
|-------------------|---------------|------|-----|----------|
| OSNR Tolerance    | 800G DP-16QAM | 24.5 | 26  | dB/0.1nm |
|                   | 400G QPSK     | 17   | 18  | dB/0.1nm |
|                   | 400G PS-16QAM | 18   | 19  | dB/0.1nm |
| Power Consumption | 800G PS-16QAM | 26   | 40  | W        |
|                   | 400G QPSK     | 30   | 40  | W        |
|                   | 400G PS-16QAM | 30   | 40  | W        |

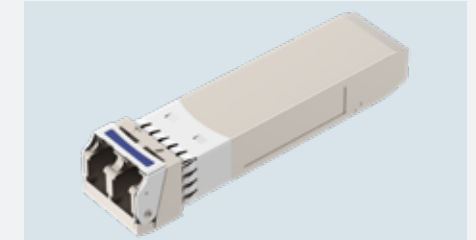


# SDI WDM AND PARALLEL SOLUTIONS

## WDM Module (3G\12G\O-BAND DWDM)

### O-BAND DWDM 16-Wavelength 12G SDI 100 GHz

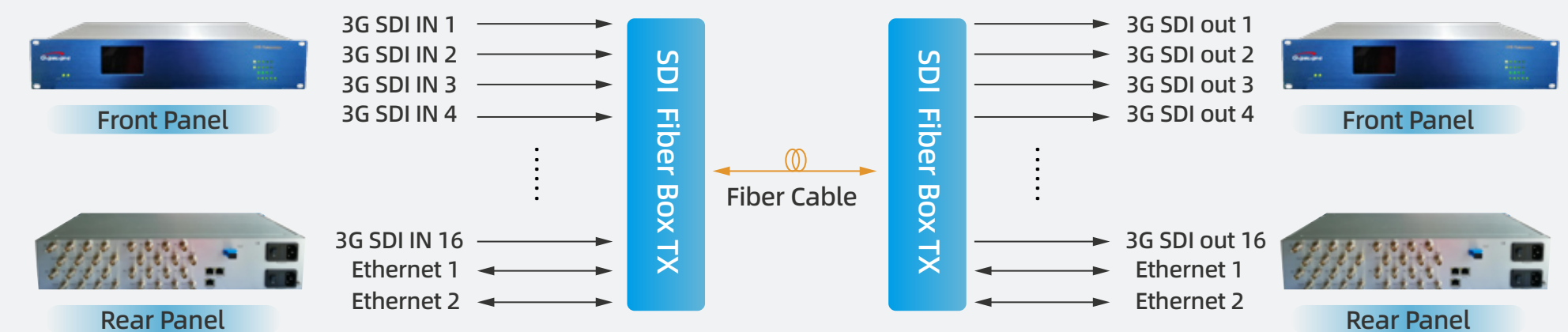
- Available in 16 product variants
- Supports 30 km transmission (APD at Receiver)
- Especially suitable for long-distance broadcast and media scenarios



## 16X3G SDI Extender

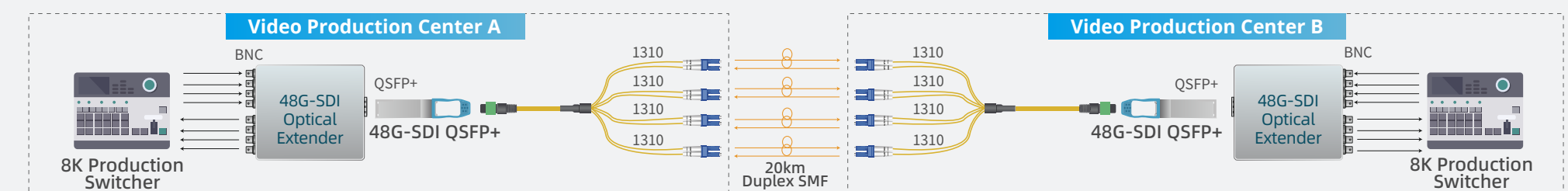
### 16CH × 3G-SDI + 2-Port Gigabit + Network management Video Optical Extender Solution

- The SDI-E-16 × 3G Fiber Optic Extender can transmit 16 channels of 3G-SDI (bit rate 2,970 Mbps) and 2 independent 1,000M IP signals.
- Supports web-based network management and monitoring.
- Fully compliant with the CE standard.
- Supports SMPTE 178 standard and has passed the SDI pathological frame testing.



## 48G (4X12G) QSFP PSM4 Module

### SDI 3G/12G /48G Uncompressed Transmission of Ultra-High-Definition Video



## Passive xWDM MUX/DEMUX

- 4CH-16CH CWDM MUX/DEMUX from 1270nm-1610nm skip
- 1390nm&1410nm) w/ EXP
- 4CH-48CH DWDM MUX/DEMUX from 100GHz O-Band or C-Band

