Arioonet Telecom

Catalogue of Arioonet Communication for Optical Transmission Products

(۲۰۱۷)

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Catalog

With the rapid development of industry informatization, the demand in long distance and large capacity bandwidth increased rapidly, resulting in the rapid growth in the traffic of the access layer, metro area layer and backbone network. The dependence on the bandwidth rent or optical fiber direct-connection already can not meet the needs of clients in the industry. Therefore, based on the existing service requirements, in face of the future network development, Arioonet Communication Co. , Ltd. first launched the AR-CD4500series optical transmission network system, which creatively extends the expansion of the WDM technology from the backbone networks to the metro area or access layer and provides a reliable, flexible and efficient high bandwidth carrying solution for the operators, Broadcast and TV, IDC, finance, government, cloud, massive data and other industries.

AR-CD4500（1U system）

The integrated C/DWDM platform of AR-CD4500I type optical transmission network system is mainly used in the metro area access layer network, and it can complete the function such as optical fiber saving, service multiplexing and distance extension, solve the shortage of fiber resources in the access layer network, provide clients a access solution of broadband multiple service access with low cost, multiple service access and high efficiency. AR-CD4500I can cooperate with other Arioonet Communication OTNS series products and implement networking according to the different requirements.

System structure

AR-CD4500I

Product features

- The standard 1U rack type design fully adopts the way of outlet on the front panel, provides 3 service single-board slots, 1 network management single-board integrated with service slot, 1 fan single-board slot and 2 power single-board slots, which are all pluggable.
- It supports the WDM for all types of service with the rate of100Mbit/s~10Gbit/s, and meet the requirements of the multiple service access
- It supports CWDM and DWDM, and the board is available for both coarse wavelength and dense wavelength
- It supports the access of up to 16 bidirectional 10G services or 32 unidirectional 10G services on a single equipment, and the expansion of transmission capacity is available through the equipment stack
- It supports a transmission distance of 120 km for 2.5G, a transmission distance of of 80 km for 10G, with the configuration of optical amplification and dispersion compensation to implement longer-distance transmission
- It supports application scenes of single fiber unidirection, single fiber bidirection and dual-

fiber bidirection.

- It supports a unified network management platform and provides a perfect performance monitoring ability in performance of network and equipment
- It supports the power supply of 220V AC or -48V DC, with a 1+1 power input protection
- It supports deployment in various locations such as cabinets, outdoor cabinets, desktops, hanging walls and derricks
- It supports free-of-configuration installation, and the equipment is plug-and-play
- It adopts green energy-saving design, with a typical configuration of 60W power consumption

Product specification

Performance Parameters	Technical Indicators
Product model	AR-CD4500I
Equipment size	1U:44 mm (height)x442 mm (width)x220 mm (depth)
Service slot	4 slots (network management card is optional for one of the slots)
Transmission capacity of Single equipment	● 16 * 10G bidirectional transmission ● 32 * 10G unidirectional transmissions
Wavelength	● CWDM:1271nm~1611nm ● DWDM:C Band, 100 GHZ or 50 GHZ
Maximum rate of Single channel	10Gbit/ s
Transmission distance	80km (without optical amplification)
Service interface type	100M~10G all kind of services, including services of STM-1/4/16/64, OC-3/12/48/192, FE, GE, 10GE, FC100/200/400/800/1200, FICON, ESCON, EPON, GPON, CPRI 1/2/3/6/7
Clock features	Support IEEE 1588 V2
Optical connector	SFP/SFP +, LC type interface
Network topology	Point to point, chain type, star type, ring type
Installation	"19"and 23" cabinets, ETSI 300mm/600mm cabinets Wireless outdoor base station cabinet, FTTx outdoor cabinet, hanging wall, derrick
Working temperature range	- 10 ℃~60 ℃ (typical)
Working humidity range	5~95% no condensation
Storage temperature range	-40℃～85℃
Heat dissipation	Fan cooling
Power supply mode	AC: 90~260 V or DC: -36~-72 V (support 1+1 backup power input)
Power consumption	60W (typical)

AR-CD4500I（2U system）

The integrated C/DWDM platform of AR-CD4500I type optical transmission network system is mainly used in metro area nodes，and it solves the following shortage of fiber resources below the metro area network, completes a unified load and flat networking for multiple services in industries such as operators, Broadcast and TV system, IDC, finance, government, cloud and big data. It effectively reduces the network construction cost and operation cost and provides a best solution for the metro area transmission scenes. AR-CD4500I can cooperate with other Arioonet Communication OTNS series products and implement networking according to the different requirements.

System structure

AR-CD4500Ⅱ

Product features

- The standard 2U rack type design fully adopts the way of outlet on the front panel, provides 7 service single-board slots, 1 network management single-board slot and service slot, 1 fan single-board slot and 2 power single-board slots, which are all pluggable.
- It supports multiple services of STM-1/4/16/64 and services such as FE, GE, 10GE, 40GE, 100G, SAN, CPRI and PON and meets the requirements of the multiple service access
- It supports the access of up to 32 bidirectional 10G services or 64 unidirectional 10G services on a single equipment, and the expansion of transmission capacity to 960 Gbit/s is available through the equipment stack
- It supports application scenes of single fiber unidirection, single fiber bidirection and dual fiber bidirection
- It supports the maximum transmission distance of 130km (36 db) for a single span and can realize long distance transmission through the relay
- It supports various network protection solutions such as optical layer 1+1 channel protection or optical line side 1+1 protection, and provides multiple protection for vital equipment units and optical fiber lines, with a high reliability
- It supports the power supply of 220V AC or -48V DC, with a 1+1 power input protection
- It supports 19 inches and ETSI cabinet, easy to lay out, with a strong suitability
- It supports free-of-configuration installation, and the equipment is plug-and-play
- It supports a unified network management platform and provides a perfect performance monitoring ability in performance of network and equipment

- It adopts green energy-saving design, with a typical configuration of 120W power consumption
- It focuses on the metro area network and meets service access & convergence and networking

Product specification

Performance Parameters	Technical indicators
Product Model	AR-CD4500
Equipment size	2U: 88 mm (height)x442 mm (width)x220 mm (depth)
Service slot	8 slots (network card is optional for one of the slots)
Transmission capacity of Single equipment	● 32 wavelength* 10G bidirectional transmission ● 64 wavelength* 10G unidirectional transmission ● 4 wavelength* 10G unidirectional and bidirectional transmission
Wavelength	● CWDM:1271nm~1611nm ● DWDM:C Band, 100 GHZ or 50 GHZ
Maximum rate of Single channel	100Gbit/ s
Transmission distance	● For DWDM system, it supports the maximum transmission distance of 130km (36 db) for a single span ● For CWDM system, it supports a maximum transmission distance of 80 km
Optical amplifier	25 db (nominal gain)
Service interface type	STM-1/4/16/64, OC-3/12/48/192, FE, GE, GE, 40 10 GE, GE, FC100 100/200/400/200/400, FICON, ESCON, EPON and GPON, CPRI 1/2/3/6/7, etc
Clock features	Support the IEEE 1588 V2
Optical connector	SFP/SFP +, LC type interface
Network topology	Point to point, chain type, star type, ring type
Installation	"19"and 23" cabinets, ETSI 300mm/600mm cabinets Wireless outdoor base station cabinet, FTTx outdoor cabinet, hanging wall
Working temperature range	- 10 ℃~60 ℃ (typical)
Working humidity range	5~95% no condensation
Storage temperature range	-40℃～85℃
Heat dissipation	Fan cooling
Power supply mode	AC: 90~260V or DC: -36~-72 V (support 1+1 backup power input)
Power consumption	120W (typical)

AR-CD4500（5U system）

The AR-CD4500V type optical transmission network system, which is mainly used in metro convergence layer and metro core layer, is a new generation of optical transmission system with high integration, high capacity and long distance launched by Arioonet Communication Co.,Ltd. The equipment applies an advanced transmission technology and highly integrated technology, facing the whole IP transmission. It provides a function of wide bandwidth, high capacity and fully transparent transmission, which can realize smooth capacity upgrade, offer a comprehensive, flexible and mature protection solution and provide a stable platform for multiple service operation and future network upgrade and expansion.

System structure

AR-CD7500

Product features

- **Hige capacity transmission and capacity of modular upgrade**
  - It supports 96 wavelength 10G system transmission at C band
  - It supports a access rate of up to 100Gbit/s for single channel
  - It supports a single level multiplexing/demultiplexing architecture for 80/96 wavelength, without the need of OCI to implement multiplexing/demultiplexing for 80 wavelength
  - It supports a system expansion for 40/48->80/96 wavelength and also a modular expansion for 10G->100G, which ensures the low investment in the early stage of the network construction and the smooth expansion in the late stage, so as to meet the future growing demand in bandwidth

- **Multi-rate, multi-protocol, full-service access and convergence**
  - Access to SDH/SONET services, data services of POS, GE, 10 GE, 40 GE, 100 GE and other services of SAN, CPRI at various rate levels.

- Powerful capacity of service convergence, supporting 8xFE service convergence, 8×GE service convergence and 10×10GE service convergence

■ High integration, green, convenient maintenance

- 5U frame supports 18 service slots, with a super high level of integration
- Compact structure and flexible installation, available for installation in cabinet with 300 mm depth
- It supports free-of-configuration installation, and the equipment is plug-and-play
- It supports a unified network management platform and provides a perfect performance monitoring ability in performance of network and equipment
- Lowest power consumption in the industry, assist operators to build green energy-saving network

■ Outstanding architecture design and secure data transmission

- It offers a variety of network level protection and provides comprehensive protection for optical fiber line and service
- It provides comprehensive equipment protection: power equipment protection, fan protection
- All-service transparent transmission reduces the transmission delay of circuit cross and ensures the reliability of transmission
- All optical interfaces are pluggable and reusable, which reduces the investment of spare parts

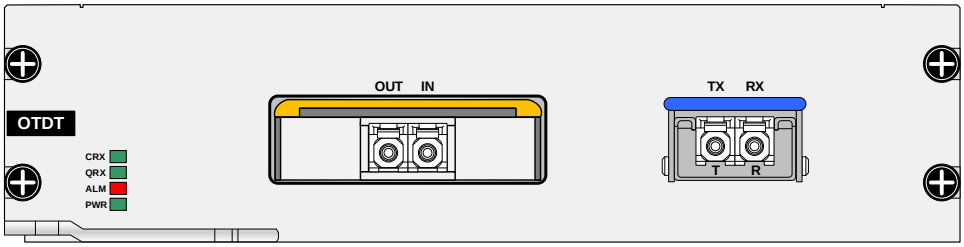
Product specification

Performance Parameters		Technical indicators
Product Model		AR-CD7500
Equipment size		5U: 220 mm (height)x442 mm (width)x220 mm (depth)
Service slot		● 18 slots for DC equipment (network card is optional for one of the slots) ● 16 slots for AC equipment (network card is optional for one of the slots)
Maximum wavelength number		DWDM: 96 wavelength; CWDM: 16 wavelength
Wavelength		● DWDM：C- Band, 100GHz or 50GHz ● CWDM：1271nm~1611nm
Transmission capacity of Single equipment		100Gbit/s
Supported service type		STM-1/4/16/64/256、OC-3/12/48/192/768 any service of 100M～2.5Gbps FE/GE/10GE/40GE/100GE ESCON/FICON/FICON Express、 FC100/FC200/FC400/FC800/FC1200/SAN EPON、GPON、CPRI 1/2/3/6/7
Clock features		Support IEEE 1588 V2
Optical connector		SFP/SFP +, LC type interface
Network topology		Point to point, chain type, star type, ring type，ring-with-chain type, ring-cross type, ring-tangency type
Backup and protection	Network level protection	Client-side 1+1protection, 1+1 protection inside board, optical multiplex section 1+1 protection, optical line 1+1 protection
	Equipment level protection	● Power supply backup ● Fan backup
Installation		"19"and 23" cabinets, ETSI 300mm/600mm cabinets
Working temperature range		- 10 ℃~60 ℃ (typical)
Working humidity range		5~95% no condensation
Storage temperature range		-40℃～85℃
Heat dissipation		Fan cooling
Power supply mode		AC: 90~260V or DC: -36~-72 V (support 1+1 backup power input)
Power consumption		300W (typical)

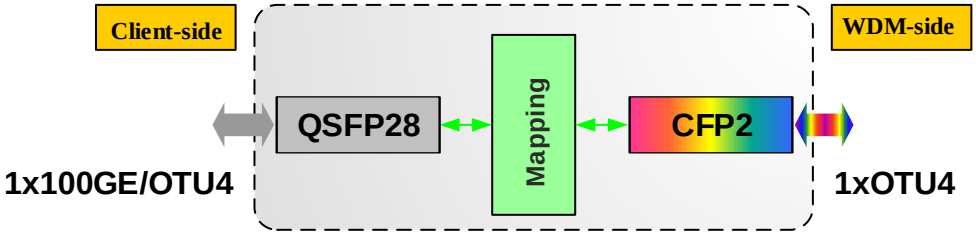
OTDT: Single-board for 100G coherent transmission service

OTDT is a access single-board for services of 1-channel 100Gbit/s rate launched by Arioonet Communication Co.,Ltd.; it adopts the key advanced technology such as DP-QPSK modulation formats and coherent reception, overcomes the challenge of the high-speed transmission system in the physical transmission effect on the aspects of OSNR requirements, CD tolerance, PMD tolerance and nonlinear, and it provides the transmission network with a solution of large capacity and large bandwidth 100G coherent transmission system.

Product diagram



Functional structure



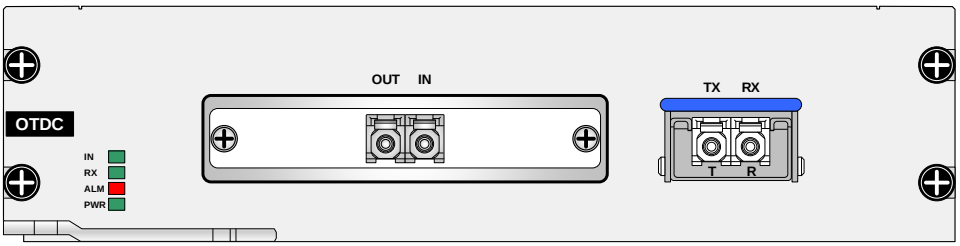
Product specification

Product Model	**OTDT**
Basic function	Support 1-channel 100G transparent transmission and can convert 1-channel 100G service signal into a OTU 4 optical signals of a standard DWDM wavelength
Access service type	100G Ethernet or 100G OTN
Occupied slot number	Occupy 2 slots, applicable to AR-CD4500I or AR-CD4500V
WDM technology	Support DWDM: C Band, 100GHz or 50GHz
3R technology	Support 3R function:Re-amplifying, Retiming, Re-shaping
Network management function	● Support real time monitoring for port working state, including: transmitting optical power, receiving optical power, temperature, etc ● Support port loopback and port shutdown
Client-side interface	Support 1 pluggable optical port QSFP28, with LC or MPO type interface
WDM-side interface	Support 1 pluggable optical port CFP2, with LC type interface
Typical power consumption	30 w
MTBF	> 100000 hours

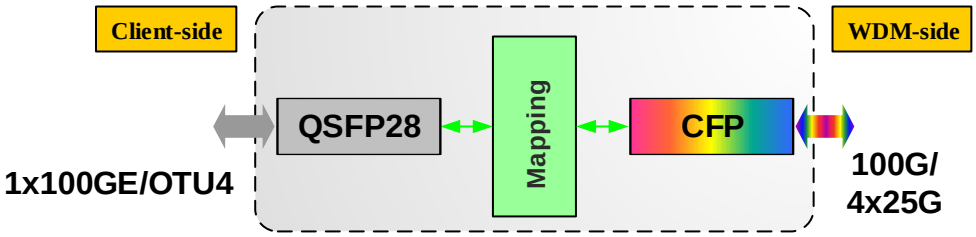
OTDC:100G service card

OTDC is a access single-board for services of 1-channel 100Gbit/s rate launched by Arioonet Communication Co.,Ltd.; its main function is to complete the operations inside the board for the optical signal of 1-channel 100Gbit/s rate services, such as OTN framing and SDFEC coding, and then output 1-channel OTU4 optical signal. The WDM-side can be matched with a 100G coherent transmission CFP optical transceiver or a 4x25G noncoherent transmission CFP optical transceiver, so as to realize the common use of service boards for 100G coherent and noncoherent transmission system.

Product diagram



Functional structure



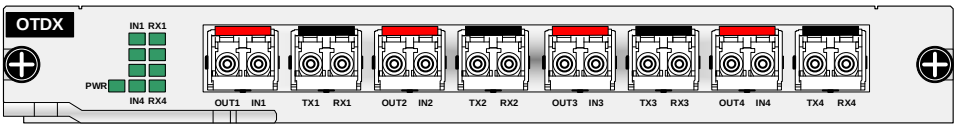
Product specification

Product Model	**OTDC**
Basic function	Support 1-channel 100G transparent transmission and can convert the 1-channel 100G service signal into a OTU4 optical signal of a standard DWDM wavelength or 4x25G optical signals of a standard DWDM wavelength
Access service type	100G Ethernet or 100G OTN
Occupied slot number	Occupy 2 slots, applicable to AR-CD4500I or AR-CD4500V
WDM technology	Support DWDM: C Band, 100GHz or 50GHz
3R technology	Support 3R function: Re-amplifying, Retiming, Re-shaping
Network management function	● Support real time monitoring of the port working state, including: transmitting optical power and receiving optical power, temperature, etc ● Support port loopback and port shutdown
Client-side interface	Support one pluggable optical port QSFP28, with LC or MPO type interface
WDM-side interface	Support a 100G port based on CFP(support coherent IPL CFP or 4x25G DWDM CFP), with LC type interface
Typical power consumption	20W
MTBF	> 100000 hours

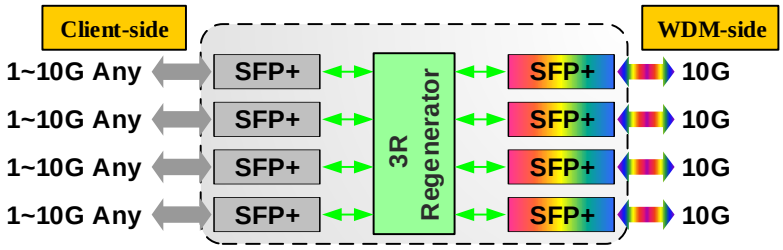
OTDX:4x10G Any service access card

OTDX is a 4-channel 10G service access card launched by Arioonet Communication Co.,Ltd.; its main function is to finish the 3R regeneration of any 4-channel signals under any protocol within the rate of 1.25 Gbit/s~11.3 Gbit/s to be accessed, and then convert them to optical signals of a standard DWDM wavelength or standard CWDM wavelength, so that the multiplexing unit can conduct WDM for optical signals of different wavelengths and also achieve the inverse process of the above process. It's applicable to the wavelength division transmission solution for any access of services with the rate of 10G or below.

Product diagram



Functional structure



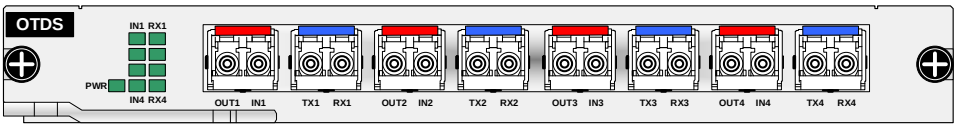
Product specification

Product Model	**OTDX**
Basic function	● It supports bidirectional transmission of 4-channel services with any rate of 1.25 Gbit/s~11.3 Gbit/s ● It supports unidirectional transmission of 8-channel services with any rate of 1.25 Gbit/s~11.3 Gbit/s
Access service type	● GE, 10GE, STM-16/64, ● FC 1G/2G/4G/8G/10G, FICON, FICON Express, ESCON ● CPRI: 1.23/2.46/6, 14/9.83 Gbit/s,OTN:OTU2，OTU2V
Occupied slot number	Occupy 1 slot, applicable to the platform of the whole AR-CD-4500series
WDM technology	Support DWDM: C Band, 100GHz or 50GHz Support CWDM：1271nm~1611nm
3R technology	Support 3R function:Re-amplifying, Retiming, Re-shaping
Network management function	● Support real time monitoring for port working state, including: transmitting optical power, receiving optical power, temperature, etc ● Support setting for the working rate of ports ● Support port loopback and port shutdown
interface	It supports 8 pluggable optical port SFP/ SFP+
Typical power consumption	20 W
MTBF	> 100000 hours

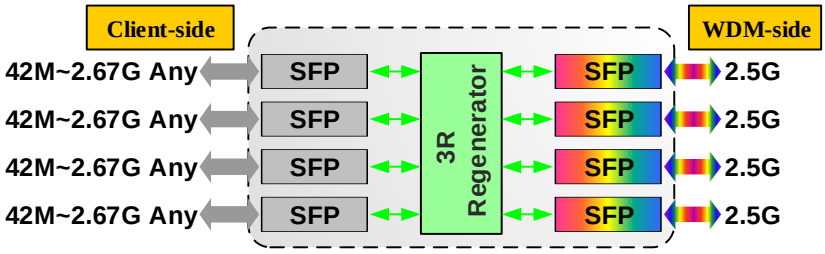
OTDS:4x2.5G Any service access card

OTDS is a 4-channel 2.5G service access card launched by Arioonet Communication Co.,Ltd. ;its main function is to finish the 3R regeneration of any 4-channel signals under any protocol within the rate of 42Mbit/s~2.67Gbit/s to be accessed, and then convert them to optical signals of a standard DWDM wavelength or standard CWDM wavelength, so that the multiplexing unit can conduct WDM for optical signals of different wavelengths and also achieve the inverse process of the above process. It's applicable to the low-cost wavelength division transmission solution for any access of services with the rate of 2.5G or below.

Product diagram



Functional structure



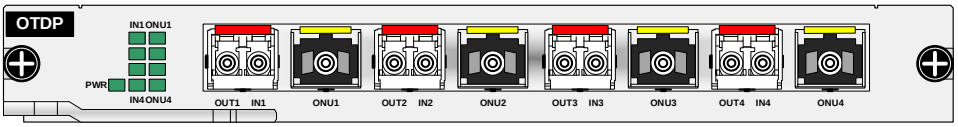
Product specification

Product Model	**OTDS**
Basic function	● Support bidirectional transmission of 4-channel services with any rate of 42Mbit/s~2.67Gbit/s ● Support unidirectional transmission of 8-channel services with any rate of 42Mbit/s~2.67Gbit/s
Access service type	● FE, GE, STM-1/4/16/ ● FC 1G/2G, FICON, FICON Express, ESCON ● CPRI:614.4Mbit/s, 1.23/2.46Gbit/s
Occupied slot number	Occupy 1 slot, applicable to the platform of the whole AR-CD-4500series
WDM technology	Support DWDM: C Band, 100GHz or 50GHz Support CWDM：1271nm~1611nm
3R technology	Support 3R function:Re-amplifying, Retiming, Re-shaping
Network management function	● Support real time monitoring for port working state, including: transmitting optical power, receiving optical power, temperature, etc ● Support the self adaptation of the working rate
interface	It supports 8 pluggable optical port SFP, and the electrical interface SFP can be configured when the electrical interface service is accessed
Typical power consumption	15 W
MTBF	> 100000 hours

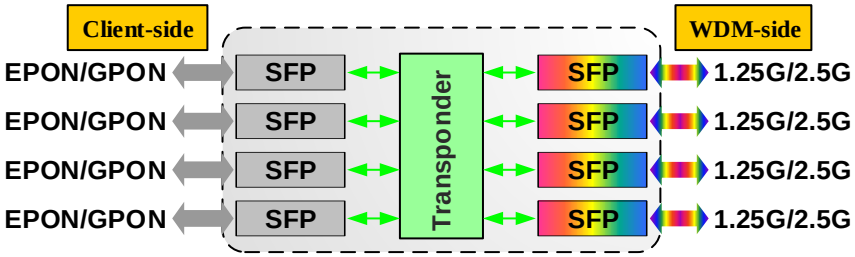
OTDP:4xpon service access card

OTDP is a 4-channel PON (EPON or GPON) service access card launched by Arioonet Communication Co.,Ltd. ;its main function is to finish the 3R regeneration of any 4-channel PON signal to be accessed, and then converts them to optical signals of a standard DWDM wavelength or standard CWDM wavelength, so that the multiplexing unit can conduct WDM for optical signals of different wavelengths and also achieve the inverse process of the above process. It's applicable to the application scene of PON over WDM.

Product diagram



Functional structure



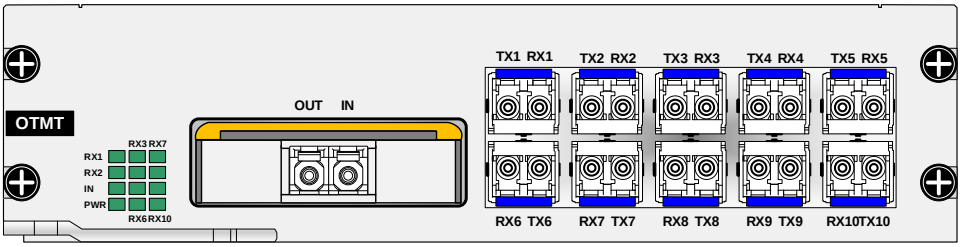
Product specification

Product Model	**OTDP**
Basic function	● Support WDM transmission of 4-channel PON service signals ● Support relay and amplification of 4-channel PON service signals
Access service type	● GPON ● EPON
Occupied slot number	Occupy 1 slot, applicable to the platform of the whole AR-CD-4500series
WDM technology	Support DWDM: C Band, 100GHz or 50GHz Support CWDM：1271nm~1611nm
3R technology	Support 3R function:Re-amplifying, Retiming, Re-shaping
Network management function	● Support real time monitoring for port working state, including: transmitting optical power, receiving optical power, temperature, etc ● Support the self adaptation of the working rate
Client-side interface	Supports eight pluggable optical port SFP, with the Interface of SC type (SMF)
WDM-side interface	It supports four pluggable optical port SFP, with LC type interface(SMF)
Typical power consumption	15w
MTBF	> 100000 hours

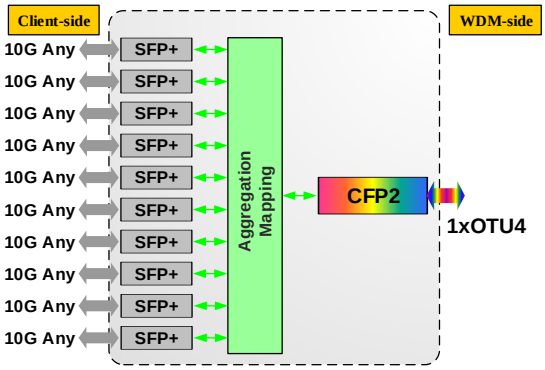
OTMT:10x10G OTN convergence board

OTMT is a 10x10G service convergence single-board launched by Arioonet Communication Co.,Ltd.; it uses industry-leading chip technology, supports OTN related standards and can converge any 10-channel 10G services into 1-channel 100G services, and then convert them to OTU4 optical signals of a standard DWDM wavelength, and also achieve the inverse process of the above process. It's applicable to the application of the optical transmission network of the metro access and metro convergence.

Product diagram



Functional structure



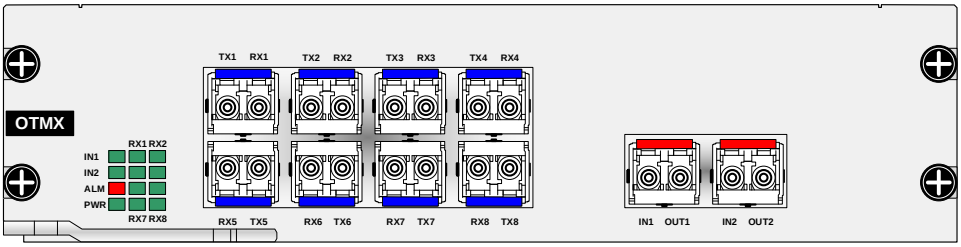
Product specification

Product Model	**OTMT**
Basic function	Support 10-channel 10G transparent transmission and can convert the 10-channel 10G service signals into a 1-channel 100G service signal and then into a OTU4 optical signal of a standard DWDM wavelength
Access service type	10GE LAN/WAN,STM-64/OC-192,FC8G, OTU2, OTU2e
Occupied slot number	Occupy 2 slots, applicable to the platform of the whole AR-CD4500series
WDM technology	Support DWDM: C Band, 100GHz or 50GHz
Network management function	Support real time monitoring for port working state at the client side and WDM side, including: transmitting optical power, receiving optical power, temperature, etc
Client-side interface	Support ten pluggable optical port SFP+, with LC type interface(SMF&MMF)
WDM-side interface	Support one pluggable optical port CFP2, with LC type interface (SMF)
Typical power consumption	35w
MTBF	> 100000 hours

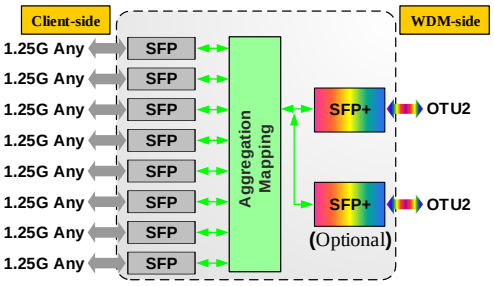
OTMX:8x1.25G OTN convergence board

OTMT is a 8x1.25G service convergence single-board launched by Arioonet Communication Co.,Ltd.; its main function is to converge the 8-channel 2.5G or 4-channel 1.25G services into 1-channel 10G services. Besides, the board has an built-in electrical layer 1+1 protection. After the multiplexing, the signals can be outputted via two 10G optical interfaces at the same time and realize data protection function, and then converted to OTU2 optical signals of a standard DWDM wavelength. It's applicable to mobile access transmission and dedicated access transmission.

Product diagram



Functional structure



Product specification

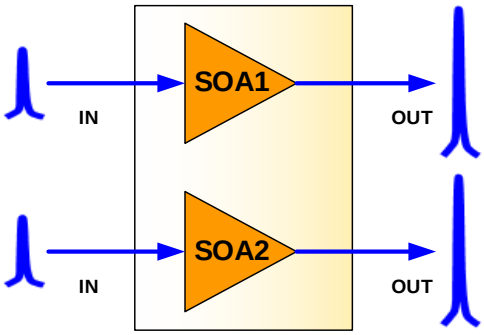
Product Model	**OTMX**
Basic function	Support 8-channel 1.25G or 4-channel 2.5G transparent transmission and can converge 8-channel 1.25G or 4-channel 2.5G service signals into a 1-channel 10G service signals
Access service type	FE/GE、STM-1/4；EPON/GPON aggregation and reach-extension
Occupied slot number	Occupy 2 slots, applicable to the platform of the whole AR-CD4500series
WDM technology	Support DWDM: C Band, 100GHz or 50GHz Support CWDM：1271nm~1611nm
Protection technology	Support 2 WDM-side interface 1+1protection（optional）
Network management function	Support real time monitoring for port working state at the client side and WDM side, including: transmitting optical power, receiving optical power, temperature, etc
Client-side interface	Supports eight pluggable optical port SFP,with LC type interface
WDM-side interface	Support two pluggable optical port SFP+ (1+1backup), with LC type interface
Typical power consumption	15w
MTBF	> 100000 hours

SOA:100G semiconductor optical amplification board

SOA is an O-band semiconductor optical amplification board launched by Arioonet Communication Co.,Ltd.; its main function is to amplify the optical signal within the range of 1260~1360nm, with the maximum rate support of 160Gb/s. It has characteristics such as stable output power, low output noise and low polarization dependent gain. The single-board supports the access to 2-channel independent optical signals. It' suitable for the amplification for 40G or 100G small power signals in the construction of security system.

Product diagram

Functional structure



Product specification

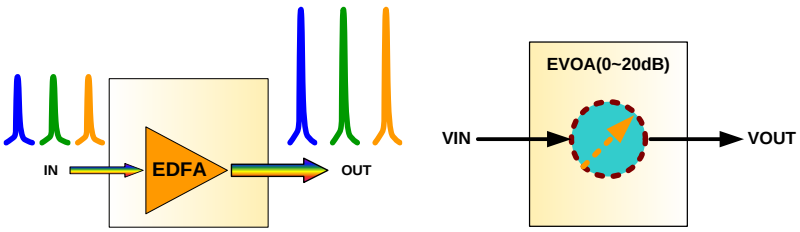
Parameter		Minimum Value	Normal Value	Maximum Value
Working wavelength range	40GE	1260nm		1340nm
	100GE	1290nm		1320nm
Input optical power range		-20dBm		-10 dBm
Saturated output power			10 dBm	
Gain			14dB	
Noise			7.5 dB	
Polarization dependent gain				2dB
Occupied slot number		Occupy 1 slot, applicable to the platform of the whole AR-CD4500series		
Network management function		● Support time monitoring of the port working state, including: input optical power, output optical power, gain, temperature, etc ● Support adjustable APC gain ● Support adjustment of output optical power range and input optical power threshold		
Optical interface		All interfaces are LC type		
Typical power consumption		20 w		
MTBF		> 100000 hours		

EDFA:Erbium-doped fiber amplification board

EDFA is an erbium-doped fiber amplification board launched by Arioonet Communication Co.,Ltd.; its main function is to compensate the power of the signal light in the transmission link, and it can amplify the optical signals of up to 48 channels(channel interval of 100 GHZ) or 96 channels (channel interval of 50 GHZ) at C band at the same time. It has characters of flat gain, locked gain, low noise figure, etc. and it's a indispensable important component for DWDM system, future high speed system and all-optical network long-distance transmission.

Product diagram

Functional structure



Product specification

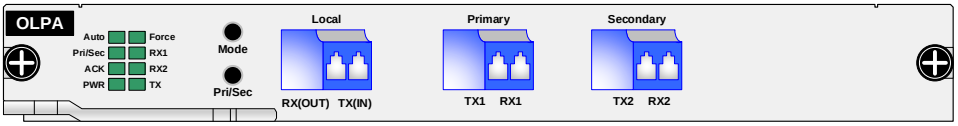
Working wavelength range	**Standard type:**1528nm~1561nm,Applicable to 40wavelength (100 GHZ) or 80 wavelength (50 GHZ) DWDM systems		
	Extension type:1528nm~1568nm,Applicable to 48 (100 GHZ) or 96 wavelength (50 GHZ) DWDM systems		
EDFA type	BA (power amplifier)	LA (line-amplifier)	PA (pre-amplifier)
Minimum input optical power	-32 dBm	-32 dBm	-32 dBm
Maximum output optical power	+20dBm	+20dBm	+17dBm
Maximum gain	20dB	33dB	30dB
Noise factor	< 5dB	< 5 dB	< 5 dB
Gain flatness	< 1.5dB	< 1.5dB	< 1.5dB
Occupied slot number	Occupy 1 slot, suitable for the platform of the whole AR-CD4500series		
Network management function	Support real time monitoring for EDFA port working state, including: optical power, optical pumping, temperature, etc		
Unique technology	Support gain locking technology, transient control technology automatic shut-off technology of output optical power		
EVOA	Built-in (optional);network management can adjust dynamic damping range of 1.5 dB~21.5 dB		
Optical interface	All interfaces are LC type		
Typical power consumption	15 w		

MTBF	> 100000 hours

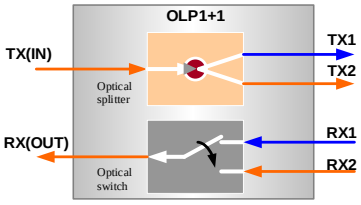
OLP: optical line protection board

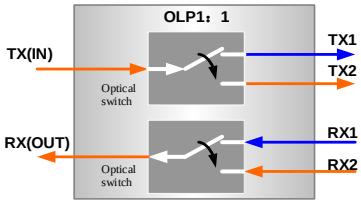
OLP is a optical wavelength/line protection board launched by Arioonet Communication Co.,Ltd. ;its main function is to perform a real-time monitoring on the state of the signals in the main and standby fiber core optical path. In the event that the fiber core is blocked or degraded in performance, it can implement the secure rearrangement automatically in the main and standby fiber core, so as to guarantee optical signals in the system line to recover quickly.OLP technology is to complete the routing switch operation in optical layer. The optical layer protection has the incomparable advantages over the protection of upper services, and it is the best solution to provide the user with an uninterrupted communication.

Product diagram



Functional structure





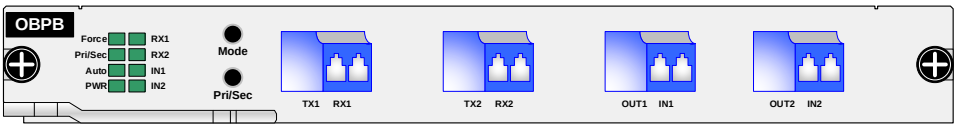
Product specification

Product Model		**OLPA(1+1)**	**OLPB(1:1)**
Working wavelength range		1260nm~1650nm	
Occupied slot number		Occupy 1 slot, suitable for the platform of the whole AR-CD4500series	
Switching mechanism		Selectively receipt from double transmission, and then single-ended rearrangement	Selectively receipt from double transmission, and then double-ended simultaneous rearrangement
Switching time		< 20ms	< 40ms
Introduction loss	TX-TX1	< 3.5 db	< 0.8dB
	TX-TX2	< 3.5 db	< 0.8dB
	RX1-RX	< 0.8dB	< 0.8dB
	RX2-RX	< 0.8dB	< 0.8dB
Monitoring of optical power range		-50 dBm~+ 25 dBm	
Network management function		It supports the OLP optical power real-time monitoring, active switch scheduling, performance management, routing management, and other management functions	
Application scenes		Used for optical line 1+1 protection, optical wavelength 1+1 protection	
Optical interface		All interfaces are LC type	
Typical power consumption		5 w	
MTBF		> 100000 hours	

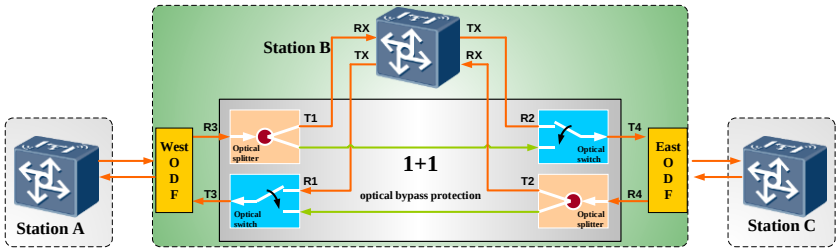
OBP: Bypass protection board

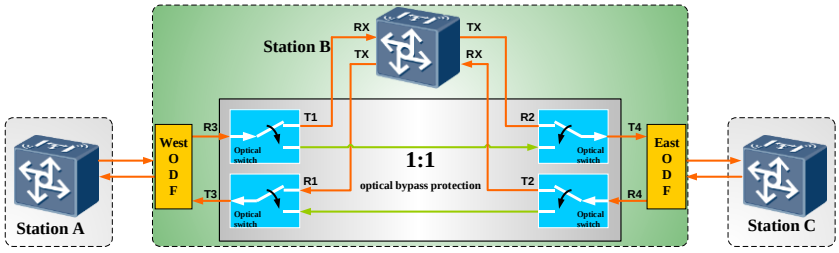
OBP is an optical bypass protection board launched by Arioonet Communication Co.,Ltd. ;OBP is a kind of intelligent optical path switching system, which belongs to the equipment at the physical layer and applies to pure optical network environment. It can automatically identify the power supply state and optical signal output state of the network nodes. When the local optical equipment encounters malfunction (including power supply breakdown, hardware or software failure, etc.), it can instantly switch to the bypass optical path. In this way , the communications line will bypass the local devices (i. e. , the fault node), thus avoiding full blocking obstacle due to the malfunction node, so as to ensure system connection to be normal.

Product diagram



Functional structure





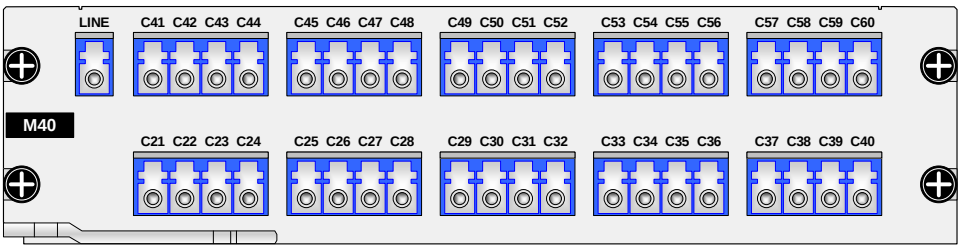
Product specification

Product Model	OBPA(1+1)	OBPB(1:1)
Working wavelength range	1260nm~1650nm	
Switching time	< 20ms	< 40ms
Introduction loss	Customizable splitting ratio	< 0.8dB
Monitoring of optical power range	-50 dBm~+ 25 dBm	
Network management function	Support functions such as real-time monitoring of OBP optical power, active switch scheduling	
Occupied slot number	Occupy 1 slot, suitable for the platform of the whole AR-CD-4500series	
Optical interface	All interfaces are LC type	
Typical power consumption	5 w	
MTBF	> 100000 hours	

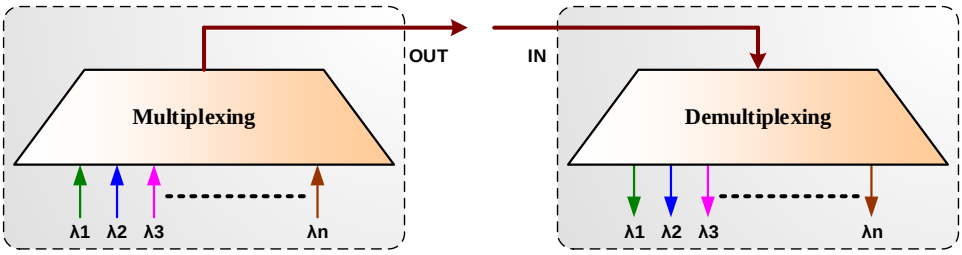
MDU: multiplexing/demultiplexing board

MDU is multiplexing/demultiplexing board based on WDM technology launched by Arioonet Communication Co.,Ltd. , and the multiplexing board is to converge multiple standard DWDM wavelengths or standard CWDM wavelengths at the transmitting end and couple them to a same optical fiber in the optical path for the transmission;the demultiplexing board is to separate the optical carrier of multiple standard DWDM wavelengths or standard CWDM wavelengths which is carried in the single fiber; so as to transmit optical signals of different wavelengths in the same optical fiber at the same time, which greatly saves the clients' fiber resources. Flexible configuration can be set up according to the client demand, with the support of multiplexing/ demultiplexing for up to 40 DWDM wavelengths.

Product diagram



Functional structure



Product specification

Commonly used channel number	2x4	2x8	1x16	1x40
Occupied slot number	1	1	1	2
WDM specifications	DWDM& CWDM	DWDM& CWDM	DWDM& CWDM	DWDM
Production process	Filter	Filter	Filter	Array waveguide grating
insertion loss of Each channel	< 1.5dB	< 2.5dB	< 3.5dB	< 5.5dB
isolation ratio of adjacent channel	> 30dB	> 30dB	> 30dB	> 25dB
isolation ratio of non-adjacent channel	> 40dB	> 40dB	> 40dB	> 30dB
Reflection coefficient	< -45dB	< -45dB	< -45dB	< -40dB
interface type	All interfaces are LC type			
Typical power consumption	0W (passive components)			
MTBF	> 200000 hours			

DCF: dispersion compensation board

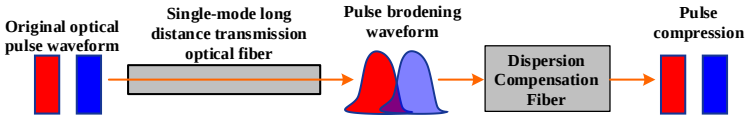
DCF model is a negative dispersion optical fiber launched by Arioonet Communication Co. , Ltd. , which is a new type of single mode optical fiber designed for presently laid G.652& G.655standard single-mode optical fiber; the dispersion of G.652 optical fiber in the vicinity of 1550nm wavelength is positive (17-20) ps/nm (km), and the dispersion of G.655 standard optical fiber in the vicinity of 1550nm wavelength is positive (4-6) ps/nm (km), with a positive dispersion slope. So we need to add dispersion compensation fiber with negative dispersion into the optical fiber then conduct the dispersion compensation and make sure that the total dispersion of the whole optical fiber links is near zero, so as to realize high speed, large capacity and long distance communication.

Product diagram

Dispersion Compensation Principle

Dispersion is one of the transmission properties of the optical fiber, and the optical pulse signal will be broadened in time after transmission in the optical fiber for a distance, which produces intersymbol interference, thus increasing the error rate and affecting the quality of communication.

- The higher the data rate is, more easily the intersymbol interference will present
- The longer the transmission distance is, more easily the intersymbol interference will present



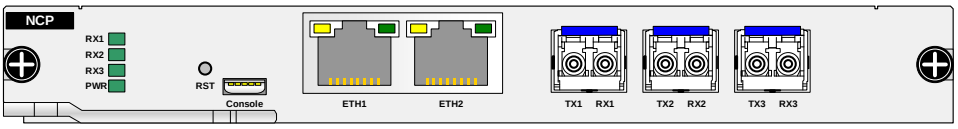
Product specification

Product Model	DCF20A	DCF40A	DCF60A	DCF80A	DCF100A
Equivalent G.652 compensation length	20km	40km	60km	80km	100km
1545nm wavelength dispersion(ps/nm)	-340±20	-670±30	-1000±40	-1340±50	-1670±60
1545nm wavelength relative dispersion slope	0.004±20%(nm-1)				
Insertion loss	≤3.6 dB	≤4.8 dB	≤6.8 dB	≤8.7 dB	≤9.7 dB
Polarization mode dispersion	≤0.6 ps	≤0.9 ps	≤1 ps	≤1 ps	≤1 ps
Nominal single-wave input optical power	≤0 dBm				
Optical interface	All interfaces are LC type				
Typical power consumption	0W (passive components)				
MTBF	> 200000 hours				
Occupied slot number	2 slots (dispersion compensation board over 40km need to be configured individually with the DCF passive frame)				

NCP: Network management board

NCP is a network management function module launched by Arioonet Communication Co. , Ltd. which is specially designed for AR-CD-4500series products; its main function is to provide interfaces for equipment and network management systems. The module, together with the AR-CD4500series NMS network management system, completes each single-board management and transmission of various maintenance and management signal for each network element, realize the real-time monitoring, maintenance and management for equipment network elements and the whole synchronous equipment network, thus offering a good solution for equipment monitoring.

Product diagram



Product features

- Adopt the high speed ARM processor, provide the powerful data processing ability, collect state information, alarm events and performance parameters of all single-board functional modules, and conduct transformation, processing and storage, and also transmit the control and management information to other each functional modules of the equipment at the same time;
- Provide a Console interface, support simulation terminal operation;
- Provide 2 SNMP interfaces, support graphical SNMP support based on IP modes;
- Provide 3 SFP optical transceiver interfaces, support equipment in-band management, realize processing of 3 optical monitoring channels;
- Network management module supports hot plug, and it also does not affect the normal working of the current service module upon the failure.

Product specification

Product Model	**NCP**
Occupied slot number	Occupy 1 slot, suitable for the platform of the whole AR-CD4500series
local management serial port	Support a Micro-USB serial port local management
Remote management ports	Support two RJ45 Ethernet ports(10/100/1000M)
OSC optical monitoring port	Support three pluggable optical port SFP, with LC type interface
Network management way	Support a variety of network management ways of CLI, Telnet, SNMP, Web
Exchange function	Support IP communication function between equipment, realize integrated management of several sets of equipment
Protection function	Hot plug or failure of network management card will not affect the existing service
Maintenance functions	Support online upgrade of local or remote software
Working temperature	--10℃~+60℃
Working humidity	5%~95%
Typical power consumption	5 w
MTBF	> 100000 hours

NMS: network management system

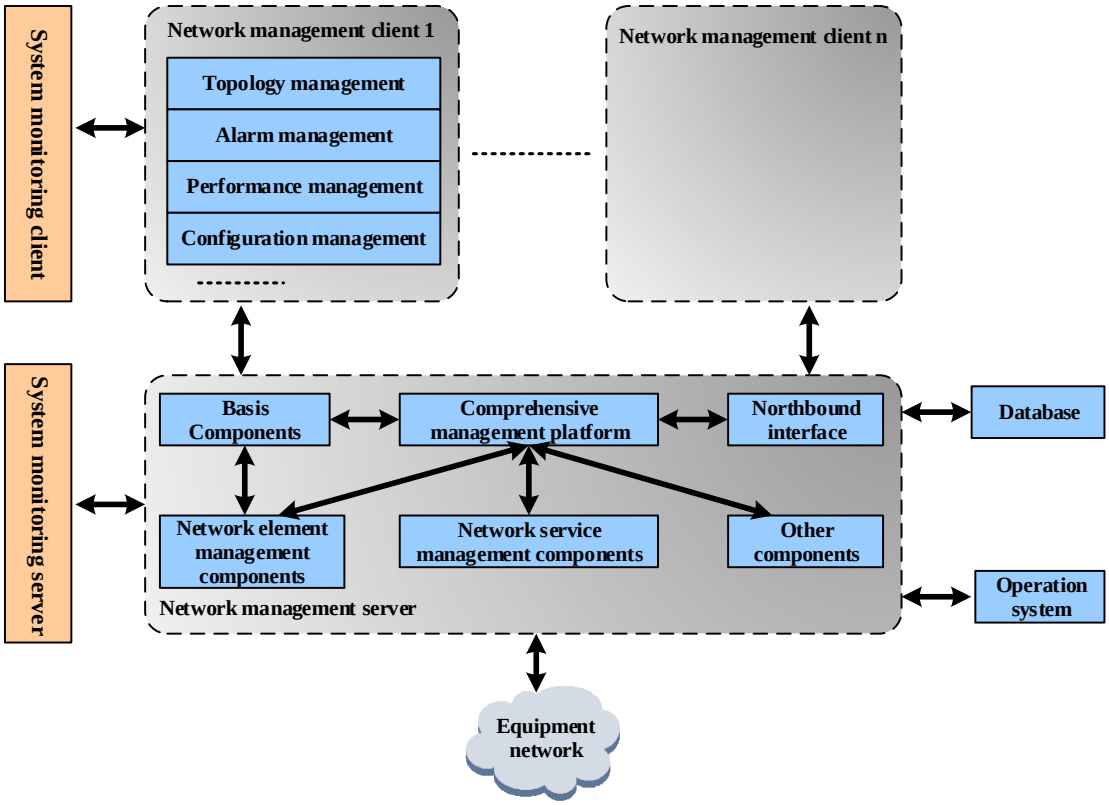
NS200 launched by Arioonet Communication Co. , Ltd. is a sub-network level integrated network management system for the optical transmission network, which can manage all the AR-CD4500series equipment in the unified management and provides standard external interface to be used by the upper network management at the same time, thus providing a complete solution for the transmission network management.

Basic function

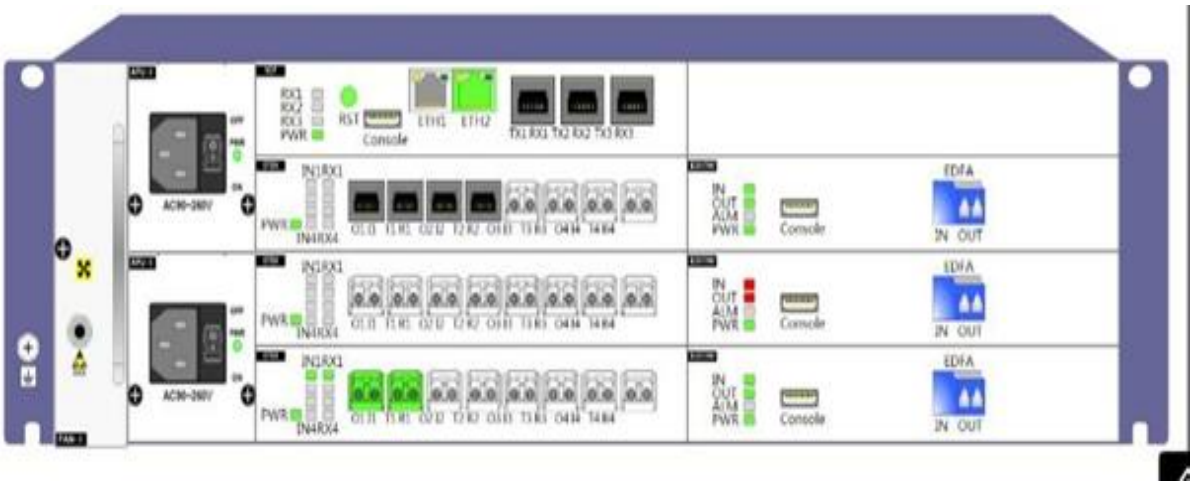
NMS provide all management functions for the network element layer (security management, topology management, alarm management, performance management, configuration management, system management).

Functional structure

Currently, it uses C/S (Client/Server) structure, supports the distributing and layering of the database system, service processing system and foreground application system, supports multiple client operation and adopts the scalable modular architecture design which can be disassembled and reassembled and be able to adapt to the needs of complex and large network management.



Network management diagram

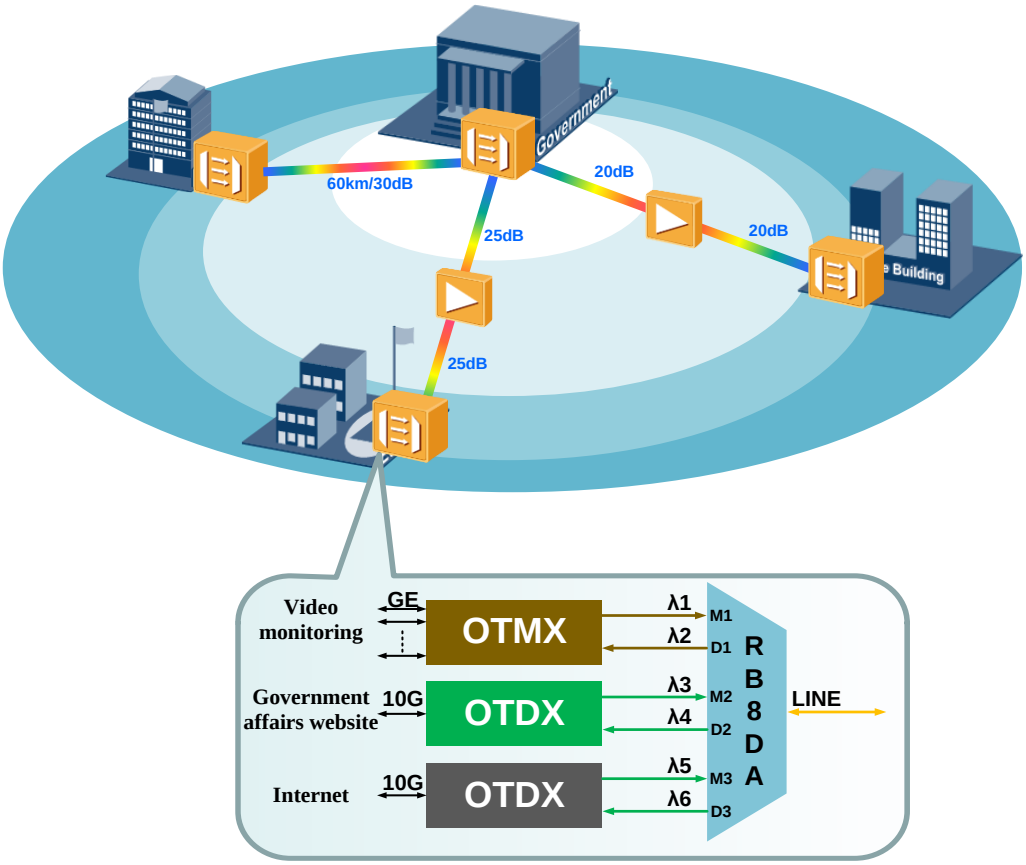


Applications of WDM single fiber bidirection

Scene Description:

Due to the absence of their own optical fibers, the interconnection between government centers and enterprise parks mainly adopts the way of bandwidth renting currently. But as the growth of the bandwidth requirements, the demand of renting the bare fiber for self-built wavelength division load network have increased. In order to further save network construction costs, Arioonet Communication Co. , Ltd. proposed a solution to construct large-capacity wavelength division based on the single fiber bidirectional technology.

Case study: the interconnection between government centers, single fiber bidirectional wavelength division transmission network



Highlights in the Solution:

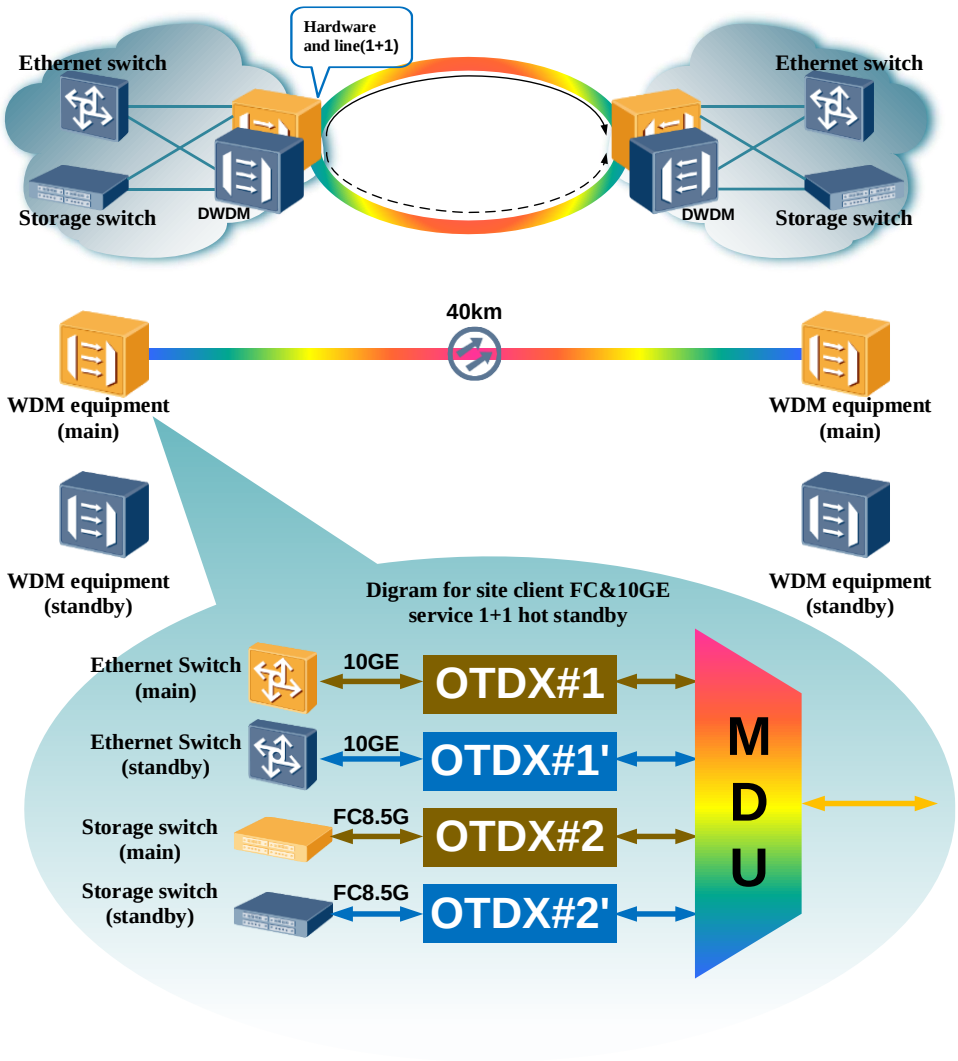
1. Single fiber system supports 10G transmission, which makes a good solution to the contradiction between optical fiber and bandwidth;
2. It supports 100M~10G full-service access;
3. Physical isolation between the services, and dedicated network for special purpose;
4. Metro fiber cable loss is generally high and the system can be configured with optical amplification to solve the problems of long distance transmission and fiber loss;
5. 1U equipment can meet the service requirements, because it's flexible, plug-and-play, free-of-configuration and maintenance free.

Applications of WDM transmission networks for disaster tolerance backup

Scene description:

With the construction of the data center construction for private network clients from such as cloud network, IDC and big enterprises, the demand for the disaster tolerance backup system demand is increasing. Clients choose the self-built wavelength division method to solve the contradiction between the fiber and large bandwidth which not only can improve network reliability by "private network for special purpose" but also achieve high-bandwidth service transmission and even meet the flexible extension of long-term service.

Case study: wavelength division transmission network of enterprise disaster tolerance backup (1+1 hot standby)



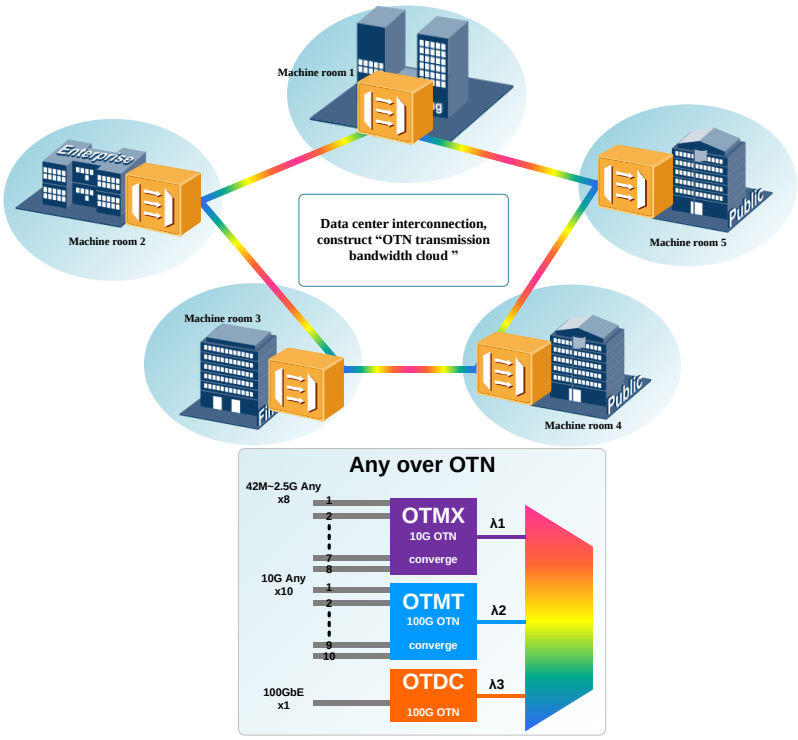
Highlights in the Solution:

1. The most comprehensive IP and SAN service interface, which supports almost all of the IP and SAN services at present;
2. The scope of disaster backup expands to 130 km, meeting the demand of the large volume of disaster backup for multiple physical nodes;
3. 1+1 backup protection for wavelength division hardware and line achieves the highest network protection.

Applications of OTN transmission bandwidth cloud

Scene description:

With deepening of informatization in the industry, larger-particle Ethernet services have been gradually rising, which leads to the fast growth of the traffic in the access layer, metro area layer and backbone network. Therefore, the construction of the multiple service transmission platform and the provision of high capacity channel has become a new development direction for the transmission network technology. The solution of "OTN transmission bandwidth cloud" launched by Arioonet Communication Co. , Ltd. is just born for this. The "OTN transmission bandwidth Cloud" is a blend of advanced technology of 10G~100G and large capacity OTN photoelectric cross. Just like the "cloud computing", it has formed a large-capacity, dynamic shared, quickly accessible, intelligent and reliable network.



Highlights in the Solution:

1. Construct the large volume pipe with the 100G technology, and allow the entire network to share 100G bandwidth channel via OTN technology at the same time;
2. Meet the scheduling demand for large capacity and flexible network, support 40->80 wave or 10G->100G modular expansion, ensure the network to smoothly upgrade to 8T massive transfer, which not only saves the initial investment but also satisfies the future network

development for many years;

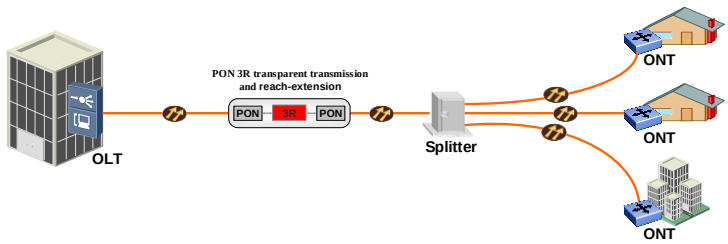
3. OTN transmission bandwidth cloud solves the industry various clients' challenges in the industry planning, construction, maintenance and other aspects and brings the client a experience of "zero waste large bandwidth, rapid release and zero waiting, and zero service interruption"
4. Unified management, intelligent network management, real-time monitoring of network running status all guarantee the stability of the network.

Applications of PON aggregation and reach-extension

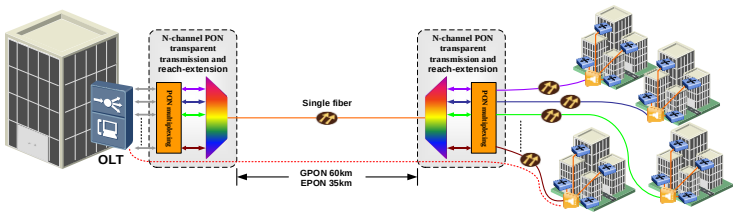
Scene description:

In the actual deployment process of PON, there are problems of serious fiber consumption in the trunk line and limited transmission distance, so Arioonet Communication Co. , Ltd. a PON launched this aggregation and reach-extension platform; the platform can not only achieve a 3R transparent transmission and reach-extension for the single-channel PON service and increase the optical power budget but also aggregate as many as 320-channel PON services on a single fiber for the transmission, which greatly improves the transmission efficiency, realizes the big coverage of PON, significantly saves the optical fiber resources in the trunk line and let the platform be fully compatible with GPON&EPON in the industry.

Scene 1:PON aggregation and reach-extension equipment can be deployed on the trunk line between OLT and ODN so as to improve the power budget of the entire ODN, and it can also be deployed between ODN and ONT so as to extend and expand the branch and drive the network deployment more flexible and convenient.



Scene 2: PON aggregation and reach-extension equipment are deployed between OLT and ODN. It uses a single fiber to aggregate or extend N-channel GPON or EPON services to a side of the ONU, so as to save the construction of intermediate fiber, nodes and equipment rooms, so as to realize the centralized deployment of service equipment (such as OLT), flat network and access surface widening, which is good for the bandwidth sharing and QoS enhancement.



Highlights in the Solution:

1. It supports the aggregation and reach-extension of EPON and GPON and the transparent service transmission.
2. It supports a maximum distance of 60 km for the extension of GPON and a maximum distance

of 35 km for the extension of EPON.

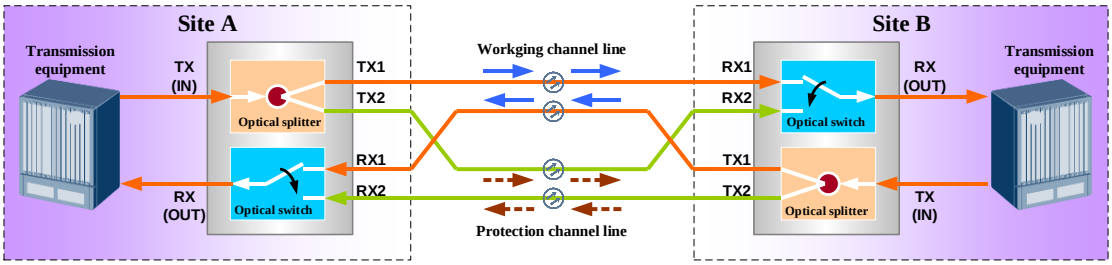
3. It supports 3R (Re-amplifying, Re-shaping, Re-timing) function of the PON service.
4. It supports the double aggregation and reach-extension application of OTN convergence and WDM, and each channel of OTU2 can multiplex 4-channel EPON or 8-channel GPON. Then, they can be aggregated again through WDM, which can implement the aggregation and transmission of up to 160-channel GPON services or 320-channel EPON services on a single fiber.

OLP line protection applications

Scene description:

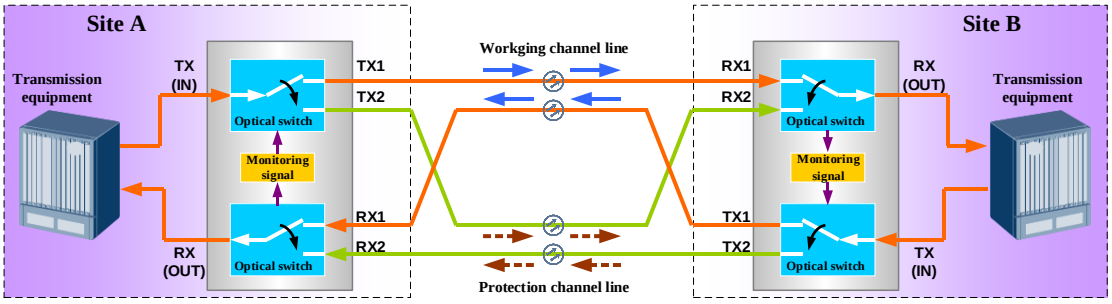
Optical line protection (OLP) technology is a kind of simple, flexible, economic and practical means of protection, which can effectively decrease the times of interruption of optical transmission system and has had a large number of applications in the first- and second-level DWDM transmission systems.

1+1 protection way:



It's a hot standby mechanism of double transmitter or receiver and single-end rearrangement where OLP transmitter will split the signal into two parts at the same time to transmit them to the optical fiber of working and protection line, the OLP receiver inspects and compares the optical power of the signals in the working and protection line and then select the superior signal from one of two channels through optical switch.

1:1 protection way:



The OLP transmitting end and receiving end are linkage optical switches. During normal working, the switch selects the line of the service channel for the optical signal transmission, and the line of protection line is used for the monitoring of signal communication for OLP on both ends. During the rearrangement, automatic optical switch at the home end and remote end conducts a automatic negotiation and implements switch through protection channel line.

Highlights in the Solution:

1. **Applicable to arbitrary scene:** used for all kinds of optical communication system and transparent transmission, having nothing to do with the line data, format and multiplex;
2. **Safe and reliable:** OLP adopts the design of the advanced optical switch and high-quality passive splitter, with a high reliability; and it is independent from network management board, without affecting each other;
3. **Automatic switch function:** automatically switch to the protection line when the optical fiber in the working channel line is blocked, so as to ensure no blocking for communication services;
4. **Monitoring features for line insertion loss:** conduct a real-time monitoring on the status of line insertion loss in the non-working optical channels and send out alarm prompt according to established alarm threshold, so as to ensure the validity and reliability of the protection system;
5. **Function of keep running for the power off and on:** no matter the OLP power is off or on, it does not affect the switch state of the main and standby routing and guarantees the normal working of the system; and it also has the hot plug function;
6. **Network management function:** support various management methods such as SNMP, CLI, Telnet and Web, implement the real-time monitoring, configuration and management on the OLP equipment state and the routing line status;
7. **Fast response:** Switching time of 1+1 protection <20ms, Switching time of 1:1 protection <40ms;
8. **Unified platform architecture:** OLP can work with our EDFA optical amplification and DCF dispersion compensation in the same chassis, and provide a one-stop solution for the protection and transformation of the DWDM network.

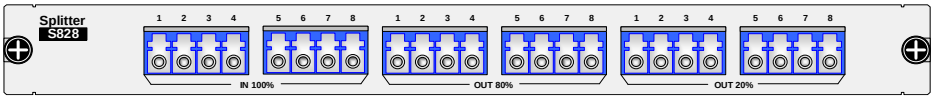
OPC 1600 passive optical splitting platform

The OPC 1600 optical splitting platform launched by Arioonet Communication Co. , Ltd. could, without affecting the original link, fully duplicates one or more copies of data to downstream equipment to guarantee the stability and reliability of the data collection. The product adopts the modular design, and the 1U chassis provides 4 optical splitting single-board slots and supports mixed insertion for various types of optical splitting single-board. The splitting ratio is optional, which can satisfy the data mirroring and collection in all application scenes. The product passes the Telcordia GR-1221-CORE test and complies with RoHS requirements.

System structure

The overall dimensions of the equipment are:1U:44 mm (height)x442 mm (width)x220 mm (depth)

Machine Diagram



Optical splitting single board

Product features

- **Highest level of integration in the industry:** single 1U equipment supports 32 group 1-into-2 (arbitrary ratio), 24 group 1-into-3 (arbitrary ratio), 16 group 1-into-4 (arbitrary ratio), 8 group 1-into8 (arbitrary ratio);
- **Most flexible architecture in the industry:** adopt the modular design, 1U chassis contains four slots to support mixed insertion of various models optical splitting single-board and meet the application on the same platform for various optical splitting ratios. At the same time, the construction in the early stage can be configured as requirements at the same time, and the expansion in the late stage only needs to add the corresponding board, which saves not only the clients' investment but also the cabinet space, thus realizing the clients' benefit maximization.
- **Safe and reliable: the** optical splitting splitter uses high-quality passive components, and the insertion loss meet multiple domestic and international standards; it has no effects on the backbone service signal.
- **Convenient maintenance:** replacing the optical splitter just needs to plug and unplug the board, without removing the whole chassis; all interfaces adopt outlet on the front panel, and the uniform interface type is the most common LC/PC interface in the industry;
- **Cost-effective:** the optical splitting single-board can be configured as requirements in the early stage of the early construction, and the chassis leaves redundant slots for the expansion and configuration in the late stage. Compared with the situation that the optical splitter in the traditional machine package can only perform expansion through the equipment stack, it

greatly reduces the investment of chassis and equipment room space;

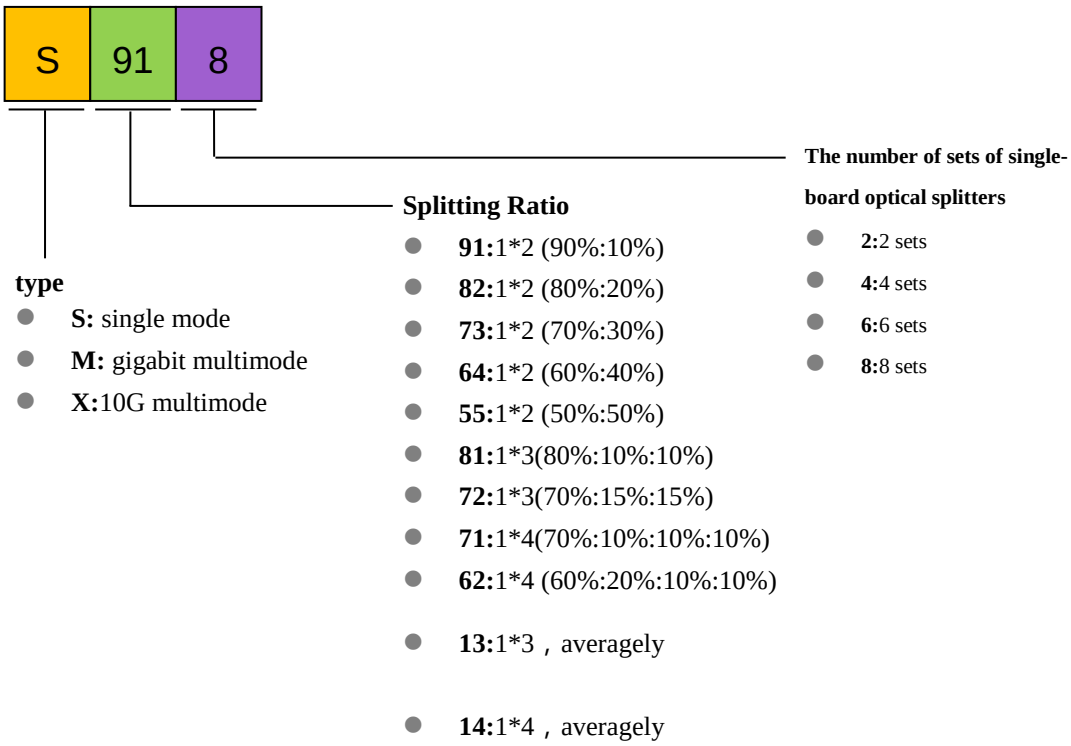
- **Uniqueness in the industry:**1U 4 slot plug-in type optical splitting platform is first created by my company, which adequately addresses the various disadvantages of traditional rack type optical splitter.

Product specification

Parameter		Single mode	Multimode	Unit
Working wavelength		1260~1650	850	nm
Insertion loss	60:40	60%≤2.70 ; 40%≤4.70	60%≤3.20 ; 40%≤5.20	dB
	70:30	70%≤1.90 ; 30%≤6.00	70%≤2.50 ; 30%≤6.50	
	80:20	80%≤1.20 ; 20%≤7.90	80%≤1.40 ; 20%≤9.00	
	90:10	90%≤0.80 ; 10%≤11.60	90%≤1.30 ; 10%≤12.00	
	70:15:15	70%≤1.90 ; 15%≤9.00	70%≤2.50 ; 15%≤10.50	
	80:10:10	80%≤1.20 ; 10%≤11.60	80%≤1.20 ; 10%≤12.00	
	70:10:10:10	70%≤1.90 ; 10%≤11.60	70%≤2.50 ; 10%≤12.00	
	60:20:10:10	60%≤2.70 ; 20%≤7.90; 10%≤11.60	60%≤3.20 ; 20%≤9.00; 10%≤12.00	
	1*2 equally	50%≤3.50	50%≤4.10	
	1*3 equally	33.3%≤5.40	33.3%≤5.80	
	1*4 equally	25%≤7.00	25%≤7.60	
	1*8 equally	12.5%≤10.30	12.5%≤11.10	
Polarization dependent loss		≤0.15	≤0.15	dB
Direction		≥55	≥55	dB
Return loss		≥55	≥55	dB
Working temperature		-40~+85	-40~+85	°C

Note: the above specifications do not contain the wear and tear of optical fiber connector, and the test temperature is room temperature.

Model naming rules

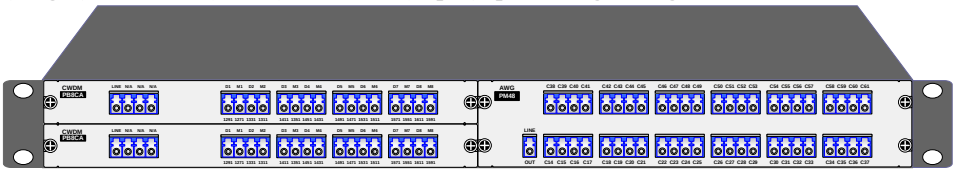


OPC passive wavelength division 1600 platform

With the increasing shortage of fiber resources, it's difficult for operators to lay cables, and the prices of leasing cables are high for industry clients. So, in the network construction, improving the utilization rate of the fiber core by using the existing old cable is the most urgent technology for the clients. The passive WDM system launched by Arioonet Communication Co. , Ltd. can improve communication capacity, expand bandwidth and solve the shortage of fiber resources effectively on the basis of the existing network, thus providing clients with an expansion solution for the optical fiber transmission with low cost and high performance.

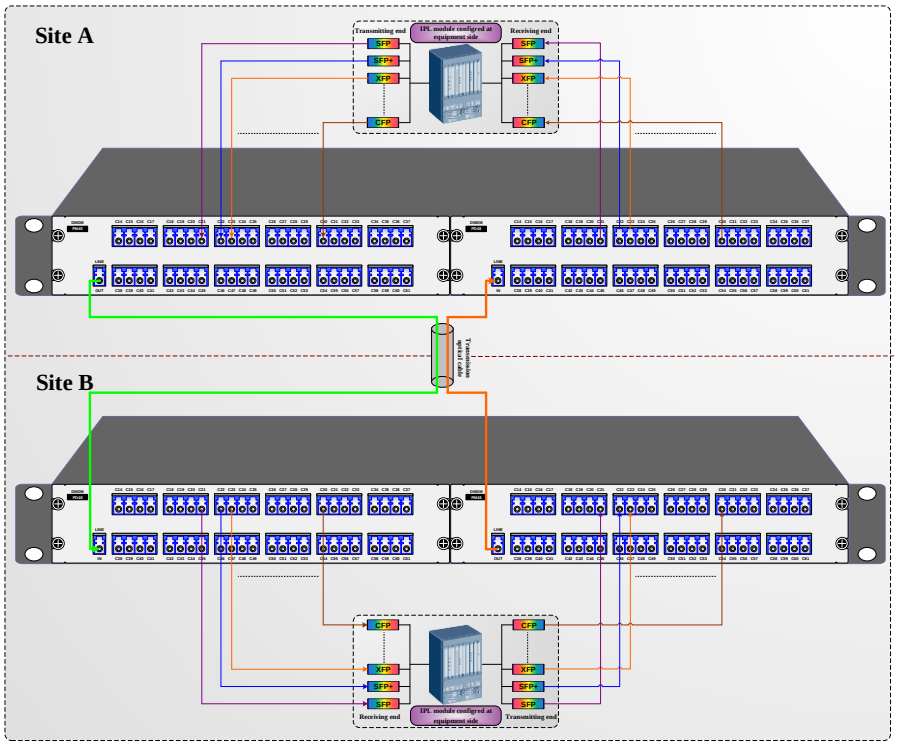
System structure

OPC 1600 passive wavelength division system adopts the modular design, with the dimensions :1U 44mm (height)x442 mm (width)x220 mm (depth), providing 4 single-board slots.



Machine Diagram

Application solution



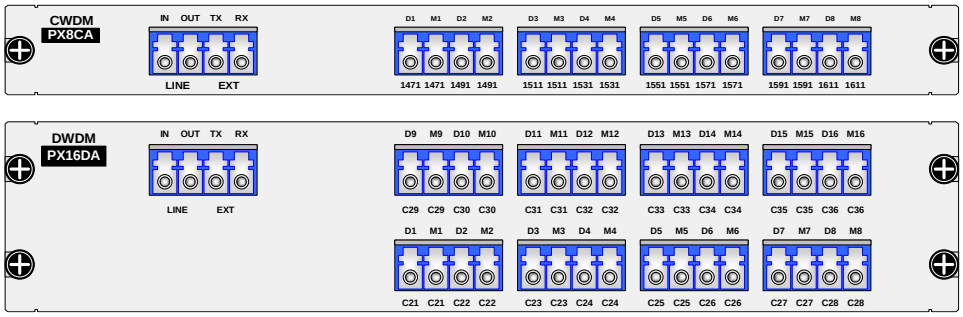
Solution Diagram of Passive Wavelength Division System

- Rapid deployment of the service without changing the original network structure, with both ends of the service equipment just like direct connection of optical fiber.
- Support single fiber bidirectional or dual fiber bidirectional applications, with maximized utilization of fiber cores and a high expanded capacity. One-core of optical fiber supports the expansion of up to 48 transmission channels.

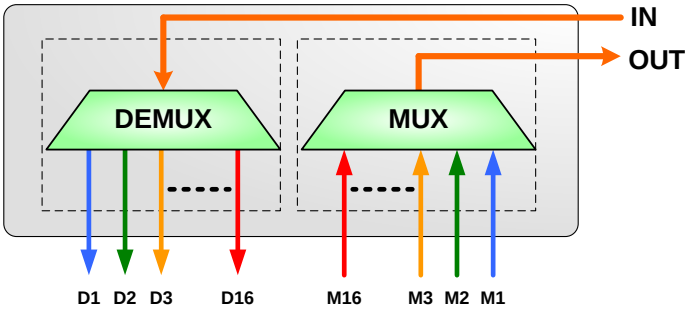
Dual fiber bidirectional passive wavelength division board

The dual fiber bidirection passive wavelength division board launched by Arioonet Communication Co. , Ltd. has two built in modules on the basis of one board: wavelength division multiplexer and demultiplexer. The single-board can achieve a expansion of bidirectional transmission of up to 16 wavelength division channels on a two-core optical fiber, which supports optional specifications of CWDM and DWDM.

Product diagram



Functional structure



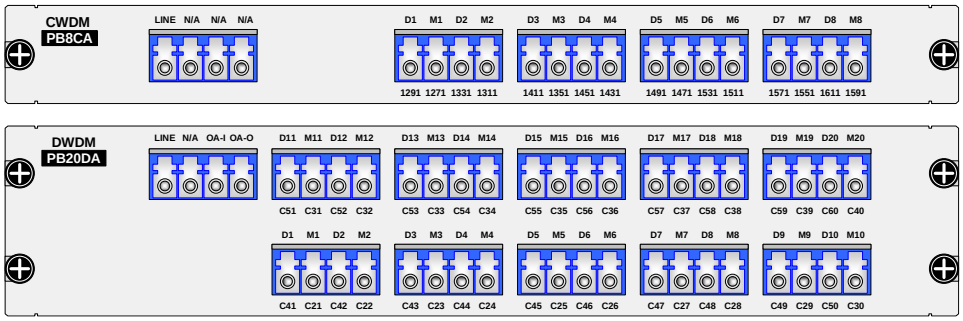
Product specification

Number of channels	4	8	16
Occupied slot number	1	1	2
Wavelength range	CWDM:1271nm to 1611nm DWDM:C Band, 100 GHZ or 50 GHZ		
Insertion loss	< 1.5 dB	< 2.5 dB	< 3.5 dB
Isolation ratio of adjacent channel	> 30dB	> 30dB	> 30dB
Isolation ratio of non-adjacent channel	> 40 dB	> 40 dB	> 40 dB
Return loss	> 45dB	> 45dB	> 45dB
Direction	> 50dB	> 50dB	> 50dB
Interface type	All interfaces are LC type		
Working temperature	-40～85℃		
Storage temperature	-40～85℃		

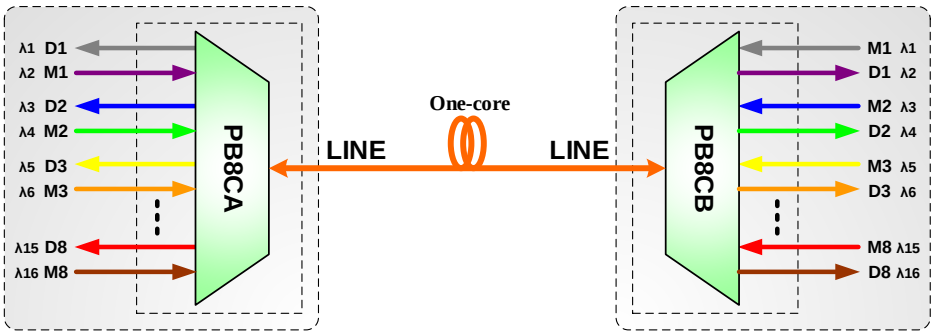
Single fiber bidirectional passive wavelength division board

The single fiber bidirectional passive wavelength division board launched by Arioonet Communication Co. , Ltd. is to utilize the feature that laser receiver is not sensitive to the wavelength characteristics and then to adopt the way of receiving and transmitting different overlapping wavelengths on one-core fiber to achieve the purpose of bidirectional service transmission. Two passive wavelength division boards need to be used in pairs; the single-board can expand the bidirectional transmission of up to 8 wavelength division channels (CWDM) or up to 20 wavelength division channels (DWDM) on the one-core optical fiber.

Product diagram



Functional structure



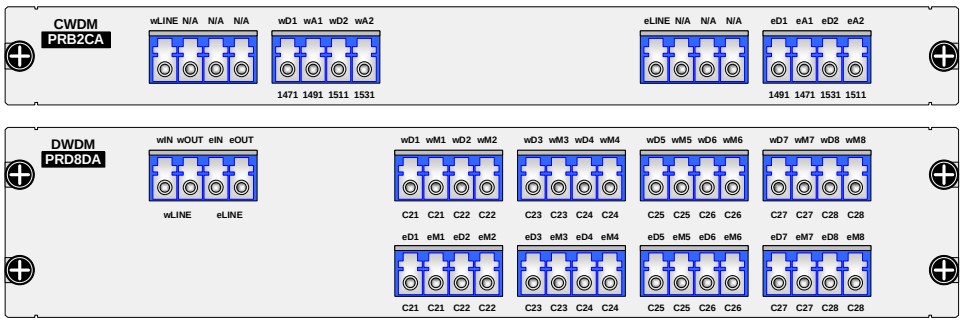
Product specification

Number of channels	4	8	20
Occupied slot number	1	1	2
Wavelength range	CWDM:1271nm to 1611nm DWDM:C Band, 100 GHZ or 50 GHZ		
Insertion loss	< 2.5 dB	< 3.5 dB	< 5.5 dB
Isolation ratio of adjacent channel	> 30 dB	> 30 dB	> 30 dB
Isolation ratio of non-adjacent channel	> 40 dB	> 40 dB	> 40 dB
Return loss	> 45 dB	> 45 dB	> 45 dB
Direction	> 50 dB	> 50 dB	> 50 dB
Interface type	All interfaces are LC type		
Working temperature	-40～85℃		
Storage temperature	-40～85℃		

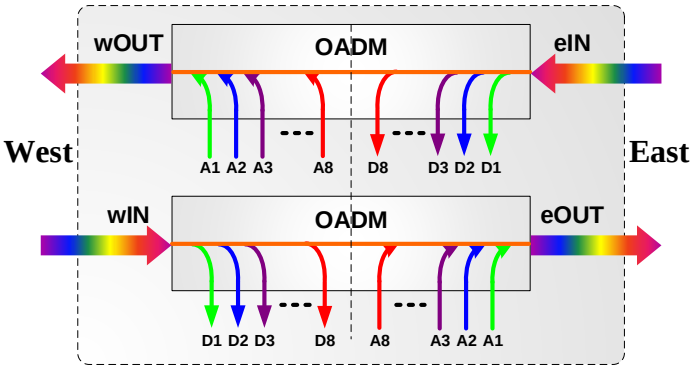
Add-drop multiplexing passive wavelength division board

The add-drop multiplexing passive wavelength division board launched by Arioonet Communication Co. , Ltd. are generally used in the intermediate nodes of chain or ring type network, which can selectively implement the local receiving and transmitting of some wavelength division channels uplink and downlink from the transmission optical, without affecting the transmission of other wavelength division channels; the single-board supports up to 8 division channels uplink and downlink on two transmission directions.

Product diagram



Functional structure



Product specification

Number of channels	1	2	4	8
Occupied slot number	1	1	1	2
Wavelength range	CWDM:1271nm to 1611nm DWDM:C Band, 100 GHZ or 50 GHZ			
Insertion loss	< 1 dB	< 1.5 dB	< 2.5 dB	< 3.5 dB
Isolation ratio of adjacent channel	> 30 dB	> 30 dB	> 30 dB	> 30 dB
Isolation ratio of non-adjacent channel	> 40 dB	> 40 dB	> 40 dB	> 40 dB
Return loss	> 45 dB	> 45 dB	> 45 dB	> 45 dB
Direction	> 50 dB	> 50 dB	> 50 dB	> 50 dB
Interface type	All interfaces are LC type			
Working temperature	-40～85℃			
Storage temperature	-40～85℃			

1.25G SFP optical transceiver

Product features

- Adopt SFP hot plug packaging, with LC interface
- Support an overall rate of 1. 25G b/s, backward compatiblity
- Support optional specifications of double fiber, single fiber, CWDM, DWDM
- Suitable for networks such as Ethernet/, FC/, SDH/SONET/CPRI
- Single-mode optical fiber supports a transmission distance of up to 120km
- Built-in DDM (digital diagnostic monitoring function)
- Working temperature: 0°C ~ +70°C
- comply with RoHS standards

Product introduction

The 1.25G SFP optical communication module launched by Arioonet Communication, Co. , Ltd. has a wide range of products, supports a variety of scenes, including:dual fiber bidirectional transmission, single fiber bidirectional transmission, CWDM and DWDM; The module conforms to the MSA protocol, and it has the characteristics of low power consumption, small size, multi-rate and compatibility with network applications such as Ethernet/SDH/SONET/CPRI/FC, with the farthest transmission distance of up to 120 km; conforms to the RoHS standard and supports digital diagnostic capabilities.

Product information

Model	Description	Transmission distance (km)	Working wavelength (nm)	Transmitted optical power (dBm)	Receiving sensitivity (dBm)	Overload optical power (dBm)
ST-SMGS-85	SFP, multimode, 1.25G, dual fiber	2	850	-9~-3	≤-18	0
ST-SSGL-31	SFP, single-mode, 1.25G, dual fiber	10	1310	-9~-3	≤-22	-3
ST-SSGE-31	SFP, single-mode, 1.25G, dual fiber	40	1310	-5~0	≤-24	-1
ST-SSGZ-55	SFP, single-mode, 1.25G, dual fiber	80	1550	0~5	≤-24	-1
ST-SSGU-55	SFP, single-mode, 1.25G, dual fiber	120	1550	0~5	≤-31	-9
ST-SBGE-53	SFP, 1.25G, single fiber A.	40	1550T/1310R	-5~0	≤-23	-3

Model	Description	Transmission distance (km)	Working wavelength (nm)	Transmitted optical power (dBm)	Receiving sensitivity (dBm)	Overload optical power (dBm)
ST-SBGE-35	SFP, 1.25G, single fiber B.	40	1310T/1550R	-5~0	≤-23	-3
ST-SBGZ-54	SFP, 1.25G, single fiber A.	80	1550T/1490R	-2~3	≤-24	-3
ST-SBGZ-45	SFP, 1.25G, single fiber B.	80	1490T/1550R	-2~3	≤-24	-3
ST-SBGZ-54	SFP, 1.25G, single fiber A.	120	1550T/1490R	0~5	≤-31	-10
ST-SBGZ-45	SFP, 1.25G, single fiber B.	120	1490T/1550R	0~5	≤-31	-10
ST-SCGZ-CXX	SFP, CWDM, 1.25G	80	CWDM (1271~1611)	0~5	≤-24	-1
ST-SCGU-CXX	SFP, CWDM, 1.25G	120	CWDM (1271~1611)	0~5	≤-31	-9
ST-SDGZ-CXX	SFP, DWDM, 1.25G	80	DWDM (C15~C62)	0~5	≤-24	-1
ST-SDGU-CXX	SFP, DWDM, 1.25G	120	DWDM (C15~C62)	0~5	≤-31	-9

2.5G SFP optical transceiver

Product features

- adopt SFP hot plug packaging, with LC interface
- Support an overall rate of 2. 67Gb/s, backward compatibility
- Support optional specifications of double fiber, single fiber, CWDM, DWDM
- Suitable for networks such as Ethernet/, FC/, SDH/SONET/CPRI
- Single-mode optical fiber supports a transmission distance of up to 120km
- Built-in DDM (digital diagnostic monitoring function)
- Working temperature: 0°C ~ +70°C
- comply with RoHS standards

Product introduction

The 2.5G SFP optical communication module launched by Arioonet Communication, Co. , Ltd. has a wide range of products, supports a variety of scenes, including:dual fiber bidirectional transmission, single fiber bidirectional transmission, CWDM and DWDM; The module conforms to the MSA protocol, and it has the characteristics of low power consumption, small size, multi-rate and compatibility with network applications such as Ethernet/SDH/SONET/CPRI/FC, with the farthest transmission distance of up to 120 km; conforms to the RoHS standard and supports digital diagnostic capabilities.

Product information

Model	Description	Transmission distance (km)	Working wavelength (nm)	Transmitted optical power (dBm)	Receiving sensitivity (dBm)	Overload optical power (dBm)
ST-SMSS-85	SFP, multimode, 2.5G, dual fiber	0.3	850	-10~-3	≤-18	-3
ST-SSSL-31	SFP, single-mode, 2.5G, dual fiber	20	1310	-5~0	≤-18	0
ST-SSSE-31	SFP, single-mode, 2.5G, dual fiber	40	1310	-2~3	≤-18	0
ST-SSSZ-55	SFP, single-mode, 2.5G, dual fiber	80	1550	0~5	≤-28	-9
ST-SSSU-55	SFP, single-mode, 2.5G, dual fiber	120	1550	0~5	≤-30	-10
ST-SBSE-53	SFP, 2.5G, single fiber A.	40	1550T/1490R	-2~3	≤-19	0
ST-SBSE-35	SFP, 2.5G, single fiber B.	40	1490T/1550R	-2~3	≤-19	0

Model	Description	Transmission distance (km)	Working wavelength (nm)	Transmitted optical power (dBm)	Receiving sensitivity (dBm)	Overload optical power (dBm)
ST-SBSZ-54	SFP, 2.5G, single fiber A.	80	1550T/1490R	0~5	≤-28	-9
ST-SBSZ-45	SFP, 2.5G, single fiber B.	80	1490T/1550R	0~5	≤-28	-9
ST-SCSE-CXX	SFP, CWDM, 2.5G	40	CWDM (1271~1611)	-2~3	≤-18	0
ST-SCSZ-CXX	SFP, CWDM, 2.5G	80	CWDM (1271~1611)	0~5	≤-28	-9
ST-SDSZ-CXX	SFP, DWDM, 2.5G	80	DWDM (C15~C62)	0~5	≤-28	-10
ST-SDSU-CXX	SFP, DWDM, 2.5G	120	DWDM (C15~C62)	0~5	≤-30	-10

10G SFP+ optical transceiver

Product features

- adopt SFP hot plug packaging, with LC interface
- Support an overall rate of 1. 06Gb/s~11. 3Gb/, backward compatibility
- Support optional specifications of double fiber, single fiber, CWDM, DWDM
- Suitable for networks such as Ethernet/, FC/, SDH/SONET/CPRI
- Single-mode optical fiber supports a transmission distance of up to 80km
- Built-in DDM (digital diagnostic monitoring function)
- Working temperature: 0°C ~ +70°C
- comply with RoHS standards

Product introduction

The 10G SFP+ optical communication module launched by Guangzhou Arioonet Communication technology limited company is specifically designed for 10G Ethernet and 1G/2G/4G/8G/10G Fiber Channel applications, and it is compatible with STM-16/64, CPRI 2~8, OTU1/2 and other network applications. The module conforms to the MSA protocol and supports adaptive rate of 1.06Gbps~11.3Gbps, with the longest transmission distance of up to 80 km, meeting the RoHS standard and supporting digital diagnostic capabilities. The product range is wide, supporting optional modules of dual fiber bidirection, single fiber bidirection, CWDM and DWDM.

Product information

Model	Description	Transmission distance (km)	Working wavelength (nm)	Transmitted optical power (dBm)	Receiving sensitivity (dBm)	Overload optical power (dBm)
ST-SMXS-85	SFP+, multimode, 10G, dual fiber	0.3	850	-6.5~-1	≤-11.1	-1
ST-SSXL-31	SFP+, single-mode, 10G, dual fiber	10	1310	-6~+0.5	≤-14	0.5
ST-SSXE-55	SFP+, single-mode, 10G, dual fiber	40	1550	-1~+4	≤-16	0.5
ST-SSXZ-55	SFP+, single-mode, 10G, dual fiber	80	1550	0~+4	≤-24	-7
ST-SBXL-23	SFP+, 10G, single fiber A.	10	1270T/1330R	-6~+0.5	≤-14	0.5
ST-SBXL-32	SFP+, 10G, single fiber B.	10	1330T/1270R	-6~+0.5	≤-14	0.5

Model	Description	Transmission distance (km)	Working wavelength (nm)	Transmitted optical power (dBm)	Receiving sensitivity (dBm)	Overload optical power (dBm)
ST-SBXE-23	SFP+, 10G, single fiber A.	40	1270T/1330R	0~+5	≤-15	0.5
ST-SBXE-32	SFP+, 10G, single fiber B.	40	1330T/1270R	0~+5	≤-15	0.5
ST-SCXE-CXX	SFP+, CWDM, 10G	40	CWDM (1271~1611)	-1~+3	≤-16	-1
ST-SCXZ-CXX	SFP+, CWDM, 10G	80	CWDM (1271~16110)	0~+4	≤-24	-7
ST-SDXE-CXX	SFP+, DWDM, 10G	40	DWDM (C15~C62)	-1~+3	≤-16	-1
ST-SDXZ-CXX	SFP+, DWDM, 10G	80	DWDM (C15~C62)	0~+4	≤-24	-7

10G XFP optical transceiver

Product features

- adopt XFP hot plug packaging, with LC interface
- Support overall rate of 8. 5Gb/s~11. 3Gb/s, with backward compatibility
- Support optional specifications of double fiber, single fiber, CWDM, DWDM
- Suitable for networks such as 10G Ethernet,10G SONET/SDH,8G/10G FC,10G CPRI, OTU2
- Single-mode optical fiber supports a transmission distance of up to 80km
- Built-in DDM (digital diagnostic monitoring function)
- Working temperature: 0°C ~ +70°C
- comply with RoHS standards

Product introduction

The 10G XFP optical communication module launched by Arioonet Communication Co. , Ltd. is specifically designed for 10G Ethernet and 8G/10G Fiber Channel applications, and it is compatible with OC-192, STM-64, CPRI 7~8, OTU2 and other network applications. The module conforms to the MSA protocol and supports adaptive rate of 8.5Gbps~11.3Gbps, with the longest transmission distance of up to 80 km, meeting the RoHS standard and supporting digital diagnostic capabilities. Product range is wide, supporting optional modules of dual fiber bidirection, single fiber bidirection, CWDM and DWDM.

Product information

Model	Description	Transmission distance (km)	Working wavelength (nm)	Transmitted optical power (dBm)	Receiving sensitivity (dBm)	Overload optical power (dBm)
ST-XMXS-85	XFP, multimode, 10G, dual fiber	0.3	850	-6.5~-1	≤-11.1	-1
ST-XSXL-31	XFP, single-mode, 10G, dual fiber	10	1310	-6~+0.5	≤-14	0.5
ST-XSXE-55	XFP, single-mode, 10G, dual fiber	40	1550	-1~+4	≤-16	0.5
ST-XSXZ-55	XFP, single-mode, 10G, dual fiber	80	1550	0~+4	≤-23	-7
ST-XBXL-23	XFP, 10G, single fiber A.	10	1270T/1330R	-6~+0.5	≤-14	0.5
ST-XBXL-32	XFP, 10G, single fiber B.	10	1330T/1270R	-6~+0.5	≤-14	0.5
ST-XBXE-23	XFP, 10G, single fiber A.	40	1270T/1330R	0~+5	≤-15	0.5
ST-XBXE-32	XFP, 10G, single fiber B.	40	1330T/1270R	0~+5	≤-15	0.5
ST-XCXE-CXX	XFP, CWDM, 10G	40	CWDM	-1~+3	≤-16	-1

Model	Description	Transmission distance (km)	Working wavelength (nm)	Transmitted optical power (dBm)	Receiving sensitivity (dBm)	Overload optical power (dBm)
			(1271~1611)			
ST-XCXZ-CXX	XFP, CWDM, 10G	80	CWDM (1271~1611)	0~+4	≤-24	-7
ST-XDXE-CXX	XFP, DWDM, 10G	40	DWDM (C15~C62)	-1~+3	≤-16	-1
ST-XDXZ-CXX	XFP, DWDM, 10G	80	DWDM (C15~C62)	0~+4	≤-24	-7

40G QSFP+ optical transceiver

Product features

- adopt QSFP+ hot plug packaging, with LC interface for
- single-mode, MPO/MTP interface for multimode
- 4 x 10Gb/s laser is adopted
- Support an overall rate of8 Gb/s~44. 6 Gb/s
- Support network applications such as 40G Ethernet and OTU3
- Single-mode optical fiber supports a transmission distance of up to 40km
- Built-in DDM (digital diagnostic monitoring function)
- Working temperature: 0°C ~ +70°C
- comply with RoHS standards

Product introduction

The 40G QSFP+ optical communication module launched by Arioonet Communication Co. , Ltd. is specifically designed for 40G Ethernet and 40G OTN applications. The module conforms to the QSFP+ MSA standard and IEEE 802.3ba standard ad supports a maximum rate of 44.6 Gb/s, with digital diagnostic capabilities. The product contains two kinds modules:single-mode module and multimode module. The transmitting end of the multimode module adopts the 4X10Gb/s 850nm VCSEL laser array, the receiving end uses 4xPIN optical detector array, and the transmission distance is 300 meters when OM3 multimode fiber is used and the transmission distance is 400 meters OM4 multimode fiber is used; the single-mode module is equipped with MUX/DEMUX devices, and it uses wavelength division multiplexing technology to multiplex the 4x10Gb/s CWDM channel on a single optical fiber, with the longest transmission distance of up to 40km. It's widely used in environments such as large data centers, campus networks, metro networks, etc.

Product information

Model	ST-QMQS-85	ST-QSQL-31	ST-QSQE-31
Operating wavelength (nm)	850	1271, 1291, 1311, 1331	1271, 1291, 1311, 1331
Operating rate (Gb/s)	4x10.5	4x11.2	4x11.2
Optical power range of single channel transmitting (dBm)	-7.5~0	-2.3~+2.3	-2.7~+4.5
Optical power range of single channel receiving (dBm)	-9.9~+2.4	-13.7~+2.3	-21.2~-4.5
Power range of total transmission (dBm)	Null	≤+8.3	≤+10.5
Power range of total receipt(dBm)	Null	-7.7~+8.3	-15.2~+1.5
Transmission distance (km)	0.3（OM3） 0.4（OM4）	10(SMF)	40 (SMF)
Extinction ratio (dB)	3	4.5	5.5
Working temperature range (°C)	0~+70	0~+70	0~+70

100G QSFP28 optical transceiver

Product features

- adopt QSFP28 hot plug packaging, with LC interface for
- Single-mode, MPO/MTP interface for multimode
- 4 x 25Gb/s laser is adopted
- Support an overall rate of 103. 1Gb/s
- Support network applications such as 100G Ethernet and OTU3
- Single-mode optical fiber supports a transmission distance of up to 10km
- Built-in DDM (digital diagnostic monitoring function)
- Working temperature: 0°C ~ +70°C
- Comply with RoHS standards

Product introduction

The 100G QSFP28 optical communication module launched by Arioonet Communication Co. , Ltd. contains the 100GBASE-SR4 and 100GBASE-LR4 series and supports a maximum rate of 103.1Gb/s. This series of products use LC or MPO optical port and they are compatible with IEEE802.3ba standard and SFF-8636 standard; with characteristics of low power consumption, small volume and high speed, it is advantageous to the data center to increase capacity, improve port density and reduce power consumption. It's mainly used in environment such as internal network of 100G data center, data center interconnection and metro area network. The transmitting end of the 100G QSFP28 SR4 module adopts the 4X25Gb/s 850nm VCSEL laser array, the receiving end uses 4xPIN optical detector array, and the transmission distance is 100 meters when OM4 multimode fiber is used; the 100G QSFP28 LR4 module is composed of 4 EML lasers and PIN receivers, and it uses the wavelength division multiplexing technology to multiplex 4-channel different wavelengths on a single fiber for the transmission, with the longest transmission distance of 10km.

Product information

Model	ST-QMCS-85	ST-QSCL-31
Operating wavelength (nm)	850	1295.56, 1300.05 1304.58, 1309.14
Operating rate (Gb/s)	4x25.78	4x25.78
Optical power range of single channel transmitting (dBm)	-8.4~+2.4	-1.3~+4.5
Optical power range of single channel receiving (dBm)	-10.3~+2.4	-8.6~+4.5
Power range of total transmission (dBm)	Null	≤+10.5
Power range of total receipt(dBm)	Null	-2.6~+5.5
Transmission distance (km)	0.1 (OM4)	10 (SMF)
Extinction ratio (dB)	2	4
Working temperature range (°C)	0~+70	0~+70

100G CFP optical transceiver

Product features

- adopt CFP hot plug packaging, with LC interface for
- single-mode, MPO/MTP interface for multimode
- Multimode uses 10 x 11. 2Gb/s laser
- Single-mode uses 4 x 28Gb/s laser
- Support an overall rate of 103. 1Gb/s and 112Gb/s,
- Support network applications such as 100G Ethernet and OTU4
- Single-mode optical fiber supports a transmission distance of up to 10~30km
- Built-in DDM (digital diagnostic monitoring function)
- Working temperature: 0°C ~ +70°C
- comply with RoHS standards

Product introduction

The 100G CFP optical communication module launched by Arioonet Communication Co. , Ltd. contains the 100GBASE-SR10, 100GBASE-LR4 and 4x28G DWDM series and supports a overall rate of 103.1Gb/s and 112Gb/s. This series of products use LC or MPO optical port and they are compatible with IEEE802.3ba and CFP MSA standard; with characteristics of low power consumption, small volume and high speed, and they are also compatible with Ethernet and OTU4 applications. The transmitting end of the 100G CFP SR10 module adopts the 10X10Gb/s 850nm VCSEL laser array, the receiving end uses 10xPIN optical detector array, and the transmission distance is 400 meters when OM4 multimode fiber is used; the 100G CFP LR4 module is composed of 4X28G EML lasers and PIN receivers, and it uses the wavelength division multiplexing technology to multiplex 4-channel different wavelengths on a single fiber for the transmission, with the longest transmission distance of 10km.100G CFP DWDM module supports optional 100GHz 40 wave at C band, with the longest transmission distance of up to 30km.

Product information

Model	ST-CMCS-85	ST-CSCL-31	ST-CDCE-XX
Operating wavelength (nm)	850	1295.56, 1300.05 1304.58, 1309.14	C-band 100GHz
Operating rate (Gb/s)	10X 11.2	4x28	4x28
Optical power range of single channel transmitting (dBm)	-7.6~+2.4	-4.3~+4.5	-2.0~+4.0
Optical power range of single channel receiving (dBm)	-9.9~+1	-10.6~+4.5	-10.0~+4.0
Power range of total transmission (dBm)	Null	≤+10.5	Null
Power range of total receipt(dBm)	Null	-4.6~+5.5	Null
Transmission distance (km)	0.4 (OM4)	10 (SMF)	30 SMF)
Extinction ratio (dB)	3	4	8
Working temperature range (°C)	0~+70	0~+70	0~+70

100G CFP2 optical transceiver

Product features

- adopt CFP2 hot plug packaging, with LC interface for
- Single-mode, MPO/MTP interface for multimode
- Multimode uses 10 x 11. 2Gb/s laser
- Single-mode uses 4 x 28Gb/s laser
- Support an overall rate of 103. 1Gb/s and 112Gb/s,
- Support network applications such as 100G Ethernet and OTU4
- Single-mode optical fiber supports a transmission distance of up to 10km
- Built-in DDM (digital diagnostic monitoring function)
- Working temperature: 0°C ~ +70°C
- Comply with RoHS standards

Product introduction

The 100G CFP2optical communication module launched by Arioonet Communication Co. , Ltd. is designed for the high density of 100G Ethernet and optical transport network (OTN) applications and, and it contains the 100GBASE-SR10 and 100GBASE-LR4 and supports a overall rate of 103.1Gb/s and 112Gb/s, and it's compatible with IEEE802.3ba and CFP MSA standard. The transmitting end of the 100G CFP2 SR10 module adopts the 10X10Gb/s 850nm VCSEL laser array, the receiving end uses 10xPIN optical detector array, and the transmission distance is 400 meters when OM4 multimode fiber is used, and it can interconnect with the optical solution of 40GBASE-SR4 and 10GBASE-SR; the 100G CFP LR4 module is composed of 4X28G EML lasers and PIN receivers, and it uses the wavelength division multiplexing technology to multiplex 4-channel different wavelengths on a single fiber for the transmission, with the longest transmission distance of 10km.

Product information

Model	ST-TMCS-85	ST-TSCL-31
Operating wavelength (nm)	850	1295.56, 1300.05 1304.58, 1309.14
Operating rate (Gb/s)	10X 11.2	4x28
Optical power range of single channel transmitting (dBm)	-7.6~+2.4	-4.3~+4.5
Optical power range of single channel receiving (dBm)	-9.9~+1	-10.6~+4.5
Power range of total transmission (dBm)	Null	≤+10.5
Power range of total receipt(dBm)	Null	-4.6~+5.5
Transmission distance (km)	0.4 (OM4)	10 (SMF)
Extinction ratio (dB)	3	4
Working temperature range (°C)	0~+70	0~+70

100G CFP4 optical transceiver

Product features

- adopt CFP2 hot plug packaging, with LC interface for single-mode, MPO/MTP interface for multimode
- 4 x 28Gb/s laser is adopted
- Support an overall rate of 103. 1Gb/s and 112Gb/s,
- Support network applications such as 100G Ethernet and OTU4
- Single-mode optical fiber supports a transmission distance of up to 10km
- Built-in DDM (digital diagnostic monitoring function)
- Working temperature: 0°C ~ +70°C
- comply with RoHS standards

Product introduction

The 100G CFP4 optical communication module launched by Arioonet Communication Co. , Ltd. is designed for the high density of 100G Ethernet and optical transport network (OTN) applicationsand, and it contains the 100GBASE-SR4 and 100GBASE-LR4 and supports a overall rate of 103.1Gb/s and 112Gb/s, and it's compatible with IEEE802.3ba and CFP MSA standard. The transmitting end of the 100G CFP4 SR4 module adopts the 4X28Gb/s 850nm VCSEL laser array, the receiving end uses 10xPIN optical detector array, and the transmission distance is 100 meters when OM4 multimode fiber is used; the 100G CFP4 LR4 module is composed of 4X28G EML lasers and PIN receivers, and it uses the wavelength division multiplexing technology to multiplex 4-channel different wavelengths on a single fiber for the transmission, with the longest transmission distance of 10km.

Product information

Model	ST-FMCS-85	ST-FSCL-31
Operating wavelength (nm)	850	1295.56, 1300.05 1304.58 , 1309.14
Operating rate (Gb/s)	4x28	4x28
Optical power range of single channel transmitting (dBm)	-8.4~+2.4	-4.3~+4.5
Optical power range of single channel receiving (dBm)	-10.3~+2.4	-10.6~+4.5
Power range of total transmission (dBm)	Null	≤+10.5
Power range of total receipt(dBm)	Null	-4.6~+5.5
Transmission distance (km)	0.1 (OM4)	10(SMF)
Extinction ratio (dB)	2	4
Working temperature range (°C)	0~+70	0~+70

thanks