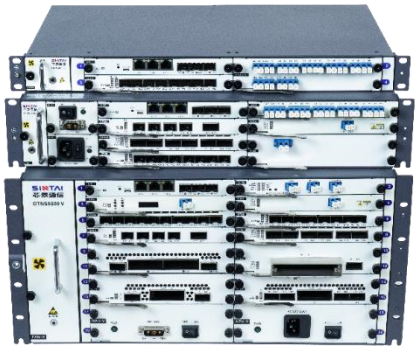
SINTAI

DCI / OTN / WDM

GUANGZHOU SINTAI COMMUNICATION CO., LTD

Professional Optical Communication Products Manufacturer

Optical Transport Solutions Provider



Product Catalog

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DCI/OTN SYSTEM

OTNS8600-DCI Platform

Your optical transmission expert
Original Manufacturer

OTNS8600-DCI8: 2U DCI Platform

The OTNS8600-DCI8 is an optoelectronic integrated WDM transmission platform designed for data center interconnection (DCI) by Guangzhou Sintai Communication Co., Ltd. features high integration (optoelectronic integration), large bandwidth (25.6Tbits/Fiber), simple deployment (free of complex tuning and testing), easy operation and maintenance (SNMP/NETCONF), security and reliability. It can meet the rapidly growing bandwidth demand among DCs, realize flexible deployment of equipment, create an open optical network architecture, and lead the DCI market into a new era of high-speed all-optical interconnection.

OTNS8600-DCI8

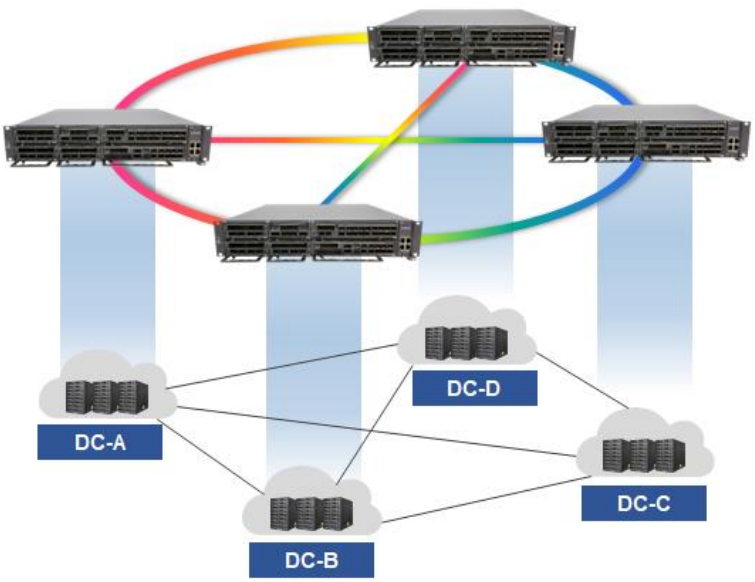
Product features

- Adopt optoelectronic integrated, pluggable modular design; components support hot-plugging, deploy and expand on demand.
- Cooling design of front-in and rear-out airflow, 2+1 FRU fan units and supports automatic speed adjustment.
- 19-inch / 600mm depth cabinet can be installed, adapted to the data center room, can be deployed with IT equipment in one cabinet.
- Transmission capacity of each fiber pair is up to 25.6 Tbit/s @ C+ band 400G*64λ and up to 6.4 Tbit/s per subrack.
- Single wave capacity up to 400G, towards 600G & 800G & 1.2T continuous evolution.
- The optical layer is highly integrated with OA, WSS, VOA, OSC, OTDR, OCM, and OLP to simplify internal fiber connections.
- Support 10GE, 25GE, 40GE, 100GE, 100GE FlexE(Unware) , 400GE, STM-64, 10GE_WAN, FC800, FC1600, FC3200, OTU2, OTU2e, OTU4 and other service access.
- Support 9-degree ROADM networking with Flexible Grid.
- Support comprehensive performance monitoring of service layer, OTN layer and optical layer with quality visibility.
- Provide a variety of multi-layer network-level and device-level protection schemes. Protection reversal time delay is less than 50ms, ensuring superior protection performance.
- Support SNMP, NETCONF/YANG standard open interfaces and GUI management platform based on B/S architecture.

Application scenario

Small Network: Single unit configured with high density optical layer+ electrical layer to form a point-to-point network.

Medium/Large Networks: Stacking of multiple layer devices + multi-degree ROADMs to form ring networks



Product specification

Parameters		Description
Chassis	Dimensions (H x W x D)	2U: 88 mm (H) x 446 mm (W) x 450 mm (D)
	Maximum capacity	6.4 Tbit/s
	Number of service card slots	8
	Applicable cabinets	19-inch cabinet 600mm or more depth
Line-side port	Rate	● 100G (PDM_QPSK) ● 200G (PDM_QPSK) / 200G (PDM_8QAM) / 200G (PDM_16QAM) ● 300G (PDM_8QAM) ● 400G (PDM_16QAM)
	Optical module	Pluggable QSFP28/ QSFP-DD/ CFP2, wavelength tunable
Client-side port	Service type	10GE, 25GE, 40GE, 100GE, 100GE FlexE(Unware), 400GE, STM-64, 10GE_WAN, FC800, FC1600, FC3200, OTU2, OTU2e, OTU4
	Optical module	Pluggable SFP+ / SFP28/ QSFP28/ QSFP-DD
Optical power management		ALS, AGC
Maximum number of wavelengths		Fixed grid: 96 waves @ 50 GHz
Channel spacing		Fixed grid: 50 GHz/75 GHz/100 GHz/150 GHz
Center frequency range		191.35 THz ~ 196.1 THz
Center wavelength range		1528.77 nm ~ 1566.73 nm
Protective function		● Optical Line Protection (OLP) ● Optical Multiplexing Segment Protection (OMSP) ● Optical Channel Protection (OChP) ● On-card 1+1 protection (only supported by P422 muxponder)
Network management		● Support main controller (SCU) 1+1 backup **(Optional)** ● CLI, Web LCT, SNMP, NETCONF, GUI management platform based on B/S architecture ● Support OSC-based DCN communication
Power supply	Back-up	Standard CRPS power supply 1+1 backup
	AC	● Rated voltage range: 100 V AC to 130 V AC (50/60Hz) / 200 V AC to 240 V AC (50/60Hz) ● Maximum voltage range: 90 V AC ~ 264 V AC (45Hz ~ 65Hz)
	HVDC	● Rated voltage range: 240 V HVDC ● Maximum voltage range: 192 V HVDC to 288 V HVDC
	DC	● Rated voltage range: -48 V DC/-60 V DC ● Maximum voltage range: -40 V DC to -72 V DC
Heat dissipation		Forward airflow and rear airflow, 2+1 Fan unit backup
Typical power consumption		<800W (standard)
Environment	Operating temperature	Short-term: -5℃～+45℃; Long-term: 0℃～40℃
	Storage temperature	-40℃～+70℃
	Humidity level	5% to 95% (non-condensing)

OTNS8600-DCI4: 1U DCI Platform

The OTNS8600-DCI4 is an optoelectronic integrated WDM transmission platform designed for data center interconnection (DCI) by Guangzhou Sintai Communication Co., Ltd., features high integration (optoelectronic integration), large bandwidth (25.6Tbits/Fiber), simple deployment (free of complex tuning and testing), easy operation and maintenance (SNMP/NETCONF), security and reliability. It can meet the rapidly growing bandwidth demand among DCs, realize flexible deployment of equipment, create an open optical network architecture, and lead the DCI market into a new era of high-speed all-optical interconnection.

OTNS8600-DCI4

Product features

- Adopt optoelectronic integrated, pluggable modular design; components support hot-plugging, deploy and expand on demand.
- Cooling design of front-in and rear-out airflow, 1+1 FRU fan unit and supports automatic speed adjustment.
- 19-inch standard rackmount, suitable for data center server room, can be deployed with IT equipment in the same cabinet.
- Transmission capacity of each fiber pair is up to 25.6 Tbit/s @ C+ band 400G*64λ and up to 1.6 Tbit/s per subrack.
- Single wave capacity up to 400G, towards 600G & 800G & 1.2T continuous evolution.
- The optical layer is highly integrated with OA, WSS, VOA, OSC, OTDR, OCM, and OLP to simplify internal fiber connections.
- Support 10GE, 25GE, 40GE, 100GE, 100GE FlexE(Unware) , 400GE, STM-64, 10GE_WAN, FC800, FC1600, FC3200, OTU2, OTU2e, OTU4 and other service access.
- Support 9-degree ROADM networking with Flexible Grid.
- Support comprehensive performance monitoring of service layer, OTN layer and optical layer with quality visibility.
- Provide a variety of multi-layer network-level and device-level protection schemes. Protection reversal delay is less than 50ms, ensuring superior protection performance.
- Support SNMP, NETCONF/YANG standard open interfaces and GUI management platform based on B/S architecture.

Product specification

Parameter		Description
Chassis	Dimensions (H x W x D)	1U: 44 mm (H) x 444 mm (W) x 490 mm (D)
	Maximum capacity	3.2 Tbit/s
	Number of service card slots	4
	Applicable cabinets	19-inch cabinet 800mm or more depth
Line-side port	Rate	● 100G (PDM_QPSK) ● 200G (PDM_QPSK) / 200G (PDM_8QAM) / 200G (PDM_16QAM) ● 300G (PDM_8QAM) ● 400G (PDM_16QAM)
	Optical module	Pluggable QSFP28/ QSFP-DD/ CFP2, wavelength tunable
Client-side port	Service type	10GE, 25GE, 40GE, 100GE, 100GE FlexE(Unware), 400GE, STM-64, 10GE_WAN, FC800, FC1600, FC3200, OTU2, OTU2e, OTU4
	Optical module	Pluggable SFP+/ SFP28/ QSFP28/ QSFP-DD
Optical power management		ALS, AGC
Maximum number of wavelengths		Fixed grid: 96 waves @ 50 GHz
Channel spacing		Fixed grid: 50 GHz/75 GHz/100 GHz/150 GHz
Center frequency range		191.35 THz ~ 196.1 THz
Center wavelength range		1528.77 nm ~ 1566.73 nm
Protective function		● Optical Line Protection (OLP) ● Optical Multiplexing Segment Protection (OMSP) ● Optical Channel Protection (OCHP) ● On-card 1+1 protection (only supported by P422 muxponder)
Network management		● Support hot-swapping of 1 main controller(SCU) ● CLI, Web LCT, SNMP, NETCONF and GUI management platform based on B/S architecture ● Support OSC-based DCN communication
Power supply	Back-up	Standard CRPS power supply 1+1 backup
	AC	● Rated voltage range: 100 V AC to 130 V AC (50/60Hz) / 200 V AC to 240 V AC (50/60Hz) ● Maximum voltage range: 90 V AC ~ 264 V AC (45Hz ~ 65Hz)
	HVDC	● Rated voltage range: 240 V HVDC ● Maximum voltage range: 192 V HVDC to 288 V HVDC
	DC	● Rated voltage range: -48 V DC/-60 V DC ● Maximum voltage range: -40 V DC to -72 V DC
Heat dissipation		Forward airflow and rear airflow, 1+1 Fan unit backup
Typical power consumption		<550W (standard)
Environment	Operating temperature	Short-term: -5℃～+45℃; Long-term: 0℃～40℃
	Storage temperature	-40℃～+70℃
	humidity level	5% to 95% (non-condensing)

SCU: System Control Unit

The system control unit (SCU) is also called main controller card introduced by Sintai Communication is responsible for providing the interface between the system and the network management system, cooperating with the network management system to manage the various single cards of the equipment, and realizing the mutual communication among the equipment to complete the processing of the corresponding overhead and optical monitoring channels.

Product features

- Support dual main controller card 1+1 redundancy, and supports automatic and manual reversal.
- Support hot-swapping of the main controller card, without any impact on the service.
- After the failure of the dual main controller cards, the device can continue to work normally, the new on-line main controller card can passively obtain all the configurations of all functional units, and does not affect the normal operation of the device.
- The original configuration will not be lost after the device is powered down, and the configuration will be restored automatically after it is powered up; when service cards, fans, etc. are unplugged and replaced with the same type of cards, the main controller will automatically send the original card configuration to the new cards.
- Provide main controller card operation status indicator and main and standby status indicator.
- Provide command line based CLI control, Web-based LCT control, GUI control platform based on B/S architecture, SNMP, NETCONF/YANG open API interface.
- Support remote online upgrade.
- Provide USB interface, support on-site software upgrade, log export and other functions.

Product specification

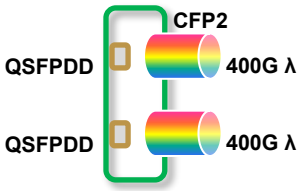
SCU		
Protective function		Support main controller 1+1 backup
Network management		● Support CLI command line management ● Support Web LCT management ● Support GUI management platform based on B/S architecture ● Support OSC-based DCN communication ● Open API interface supporting SNMP, NETCONF/YANG
Environment	**Operating temperature**	Short-term: -5℃～+45℃; Long-term: 0℃～40℃
	Storage temperature	-40℃～+70℃
	Humidity level	5% to

P626: 2*400G Muxponder(CFP2)

The 2*400G Muxponder service card (P626) from Sintai Communication supports mapping 2x400G signals received on the client-side into 2 OTUC4 signals and interconverting the OTUC4 signals with WDM wavelength optical signals compliant with ITU-T standards. The line-side adopts pluggable CFP2-DCO to realize ultra-long distance transmission based on coherent detection and other advanced technologies.

Product view

Function structure



2 x 400GE ↔ 2 x 400G
8 x 100GE (Breakout) ↔ 2 x 400G

Application scenario

- Suitable for metro and long-haul network transmission up to 600km
- Suitable for high-capacity DCI network transmission in enterprises, campuses, cloud computing, etc.
- 400G links for existing OTN/DWDM infrastructure

Product specification

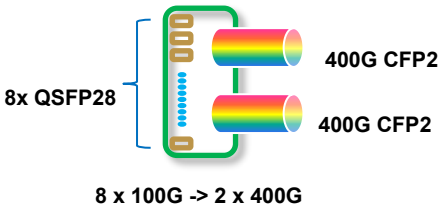
2*400G Muxponder (P626)	
Occupied slots	1 slot
Line-side	● 2 CFP2 optical ports: 400G CFP2-DCO modules, pluggable ● Support wavelength adjustable, range covering 191.35~196.1 THz ● Support adjustable light-emitting power ● Support single-fiber bidirectional transmission (optional)
Client-side	2 QSFPDD optical ports pluggable
OTN function	● Adopt ITU-T G709 recommended frame format and overhead handling ● ODUk (k=4, C4) layer: supports functions such as PM ● OTUk (k=C4) layer: supports the SM function
Supported service types	400GE, 100GE (Breakout)
Latency measurement	Support line-side online delay measurement based on ODU layer
Loopback	Support line-side and client-side loopbacks
LLDP	Receive-only (rxonly) mode
ALS	Support
Alarm delayed insertion	Support Local Fault alarm delayed insertion and delay time setting
Alarms and performance monitoring	● Support OTN performance monitoring and alarm monitoring function ● Support Ethernet RMON monitoring function ● Support optical module temperature, current, optical power monitoring, etc. ● Support for Telemetry

P624: 2*400G Muxponder(CFP2)

The 2*400G Muxponder service card (P624) from Sintai Communication supports mapping 8x100G signals received on the client-side into 2 OTUC4 signals and interconverting OTUC4 signals with ITU-T compliant WDM wavelength optical signals. The line-side adopts pluggable CFP2-DCO to realize ultra-long distance transmission based on coherent detection and other advanced technologies.

Product view

Function structure



Application scenario

- Suitable for metro and long-haul network transmission up to 600km
- Suitable for high-capacity DCI network transmission in enterprises, campuses, cloud computing, etc.
- 400G links for existing OTN/DWDM infrastructure

Product specification

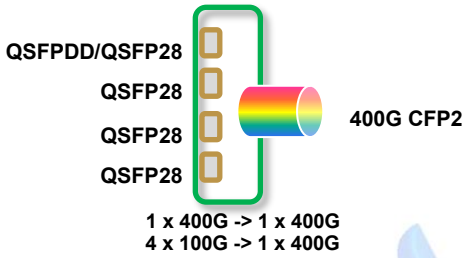
2*400G Muxponder (P624)	
Occupied slots	2 slots
Line-side	● 2 CFP2 optical ports: 400G CFP2-DCO modules, pluggable ● Support wavelength adjustable, range covering 191.35~196.1 THz ● Support adjustable light-emitting power ● Support dual fiber 100G/200/300G/400G, single-fiber 100G/200G/400G programmable ● Support single-fiber bidirectional transmission (optional)
Client-side	Support hot-swapping of 8 QSFP28 modules
OTN function	● Adopt ITU-T G709 recommended frame format and overhead handling ● ODUk (k=4, C4) layer: supports functions such as PM ● OTUk (k=4, C4) layer: supports SM functions
Supported service types	100GE, 100GE FlexE(Unware), OTU4
Latency measurement	Support line-side online delay measurement based on ODU layer
Loopback	Support line-side and client-side loopbacks
LLDP	Receive-only (rxonly) mode, 100GE service support
ALS	Client-side support when accessing non-OTN services
Alarm delayed insertion	Support Local Fault alarm delayed insertion and delay time setting
Alarms and performance monitoring	● Support OTN performance monitoring and alarm monitoring function ● Support Ethernet RMON monitoring function ● Support optical module temperature, current, optical power monitoring, etc. ● Support for Telemetry

P616: 400G Muxponder(CFP2)

The 400G Muxponder service card (P616) from Sintai Communication supports mapping 4x100G signals or 1x400G signal received on the client-side into one OTUC4 signal and interconverting the OTUC4 signal with ITU-T compliant WDM wavelength optical signals. The line-side adopts pluggable CFP2-DCO to realize ultra-long distance transmission based on coherent detection and other advanced technologies.

Product view

Function structure



Application scenario

- Suitable for metro and long-haul network transmission up to 600km
- Suitable for high-capacity DCI network transmission in enterprises, campuses, cloud computing, etc.
- 400G links for existing OTN/DWDM infrastructure

Product specification

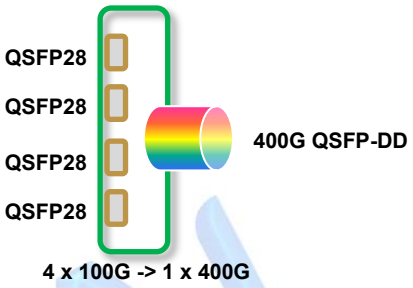
400G Muxponder (P616)	
Occupied slots	1 slot
Line-side	● 1 CFP2 optical port: 400G CFP2-DCO module, pluggable ● Support wavelength adjustable, range covering 191.35~196.1 THz ● Support adjustable light-emitting power ● Support dual fiber 100G/200/300G/400G, single-fiber 100G/200G/400G programmable ● Support single-fiber bidirectional transmission (optional)
Client-side	1 QSFPDD/QSFP28 compatible optical port and 3 QSFP28 optical ports pluggable
OTN function	● Adopt ITU-T G709 recommended frame format and overhead handling ● ODUk (k=4, C4) layer: supports functions such as PM ● OTUk (k=4, C4) layer: supports SM functions
Supported service types	100GE, 100GE FlexE(Unware), 400GE, OTU4
Latency measurement	Support line-side online delay measurement based on ODU layer
Loopback	Support line-side and client-side loopbacks
LLDP	Receive-only (rxonly) mode, 100GE and 400GE service support
ALS	Client-side support when accessing non-OTN services
Alarm delayed insertion	Support Local Fault alarm delayed insertion and delay time setting
Alarms and performance monitoring	● Support OTN performance monitoring and alarm monitoring function ● Support Ethernet RMON monitoring function ● Support optical module temperature, current, optical power monitoring, etc. ● Support for Telemetry

P614: 400G Muxponder(QSFP-DD)

The 400G Muxponder service card (P614) from Sintai Communication supports mapping 4x100G signals received on the client-side into one OTUC4 signal and interconverting the OTUC4 signal with ITU-T compliant WDM wavelength optical signals. The line-side adopts pluggable QSFP-DD DCO to realize ultra-long distance transmission based on advanced technologies such as coherent detection.

Product view

Function structure



Application scenario

- Suitable for metro and long-haul network transmission up to 450km
- Suitable for high-capacity DCI network transmission in enterprises, campuses, cloud computing, etc.
- 400G links for existing OTN/DWDM infrastructure

Product specification

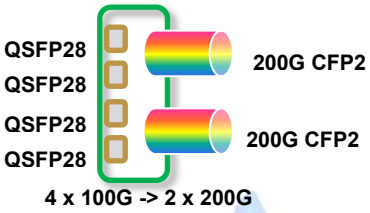
400G Muxponder (P614)	
Occupied slots	1 slot
Line-side	● 1 QSFP-DD optical port: 400G QSFP-DD DCO module, pluggable ● Support wavelength adjustable, range covering 191.35~196.1 THz ● Support 100G~400G programmable
Client-side	4 QSFP28 optical ports pluggable
OTN function	● Adopt ITU-T G709 recommended frame format and overhead handling ● ODUk (k=C4) layer: supports functions such as PM ● OTUk (k=C4) layer: supports the SM function
Supported service types	100GE, 100GE FlexE(Unware)
Loopback	Support line-side and client-side loopbacks
LLDP	Receive-only (rxonly) mode
ALS	Support
Alarm delayed insertion	Support Local Fault alarm delayed insertion and delay time setting
Alarms and performance monitoring	● Support OTN performance monitoring and alarm monitoring function ● Support Ethernet RMON monitoring function ● Support optical module temperature, current, optical power monitoring, etc. ● Support for Telemetry

P524: 2*200G Muxponder

The 200G Muxponder service card (P524) from Sintai Communication supports mapping 4x100G signals received on the client-side into 2 OTUC2 signals and interconverting the OTUC2 signals with WDM wavelength optical signals compliant with ITU-T standards. The line-side adopts pluggable CFP2-DCO to realize ultra-long distance transmission based on coherent detection and other advanced technologies.

Product view

Function structure



Application scenario

- Suitable for metro and long-haul network transmission up to 1000km
- Suitable for high-capacity DCI network transmission in enterprises, campuses, cloud computing, etc.
- 200G links for existing OTN/DWDM infrastructure

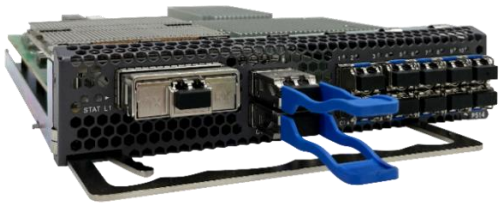
Product specification

2*200G Muxponder (P524)	
Occupied slots	1 slot
Line-side	● 2 CFP2 optical ports: 200G & 400G CFP2-DCO modules, pluggable ● Support wavelength adjustable, range covering 191.35~196.1 THz ● Support adjustable light-emitting power ● Support 100G/200G programmable ● Support single-fiber bidirectional transmission (optional)
Client-side	Support hot-swapping of 4 QSFP28 modules
OTN function	● Adopt ITU-T G709 recommended frame format and overhead handling ● ODUk (k=4, C2) layer: supports functions such as PM ● OTUk (k=4, C2) layer: supports SM functions
Supported service types	100GE, 100GE FlexE(Unware), OTU4
Latency measurement	Support line-side online delay measurement based on ODU layer
Loopback	Support line-side and client-side loopbacks
LLDP	Receive-only (rxonly) mode, 100GE service support
ALS	Client-side support when accessing non-OTN services
Alarm delayed insertion	Support Local Fault alarm delayed insertion and delay time setting
Alarms and performance monitoring	● Support OTN performance monitoring and alarm monitoring function ● Support Ethernet RMON monitoring function ● Support optical module temperature, current, optical power monitoring, etc. ● Support for Telemetry

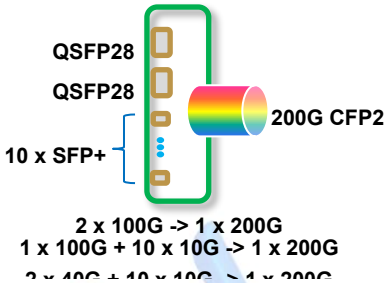
P514: 2*100G+10*10G Muxponder

The 200G Muxponder service card (P514) from Sintai Communication supports mapping multiple 10G, 40G or 100G service signals received on the client-side into one OTUC2 signal and interconverting the OTUC2 signal with ITU-T compliant WDM wavelength optical signals. The line-side adopts pluggable CFP2-DCO to realize ultra-long distance transmission based on coherent detection and other advanced technologies.

Product view



Function structure



Application scenario

- Suitable for metro and long-haul network transmission up to 1000km
- Suitable for high-capacity DCI network transmission in enterprises, campuses, cloud computing, etc.
- 200G links for existing OTN/DWDM infrastructure

Product specification

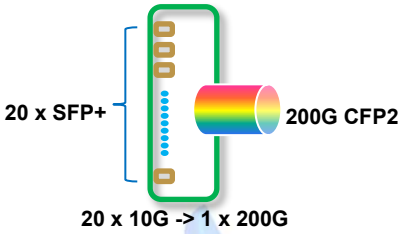
200G Muxponder (P514)	
Occupied slots	2 slots
Line-side	● 1 CFP2 optical port: 200G & 400G CFP2-DCO module, pluggable ● Support wavelength adjustable, range covering 191.35~196.1 THz ● Support adjustable light-emitting power ● Support single-fiber bidirectional transmission (optional)
Client-side	Support 2 QSFP28 and 10 SFP+/SFP28 modules hot-swappable
OTN function	● Adopt ITU-T G709 recommended frame format and overhead handling ● ODUk (k=2, 2e, 4, C2) layer: supports functions such as PM ● OTUk (k=2, 2e, 4, C2) layer: supports SM functions
Supported service types	10GE, 25GE, 40GE, 100GE, 100GE FlexE(Unware), STM-64, 10GE_WAN, FC800, FC1600, FC3200, OTU2, OTU2e, OTU4
Latency measurement	Support line-side online delay measurement based on ODU layer
Loopback	Support line-side and client-side loopbacks
LLDP	Receive-only (rxonly) mode, 10GE/40GE/100GE service support
ALS	Client-side support when accessing non-OTN services
Alarms and performance monitoring	● Support OTN performance monitoring and alarm monitoring function ● Support Ethernet RMON monitoring function ● Support optical module temperature, current, optical power monitoring, etc. ● Support for Telemetry

P512: 20*10G Muxponder

The 200G Muxponder service card (P512) from Sintai Communication supports mapping 20x10G signals received on the client-side to one OTUC2 signal or 10x10G signals to one OTU4 signal, and converting the mapped OTN signals to ITU-T compliant WDM wavelength optical signals. The line-side adopts pluggable CFP2-DCOs to realize ultra-long distance transmission based on coherent detection and other advanced technologies.

Product view

Function structure



Application scenario

- Suitable for metro and long-haul network transmission up to 1000km
- Suitable for high-capacity DCI network transmission in enterprises, campuses, cloud computing, etc.
- 200G links for existing OTN/DWDM infrastructure

Product specification

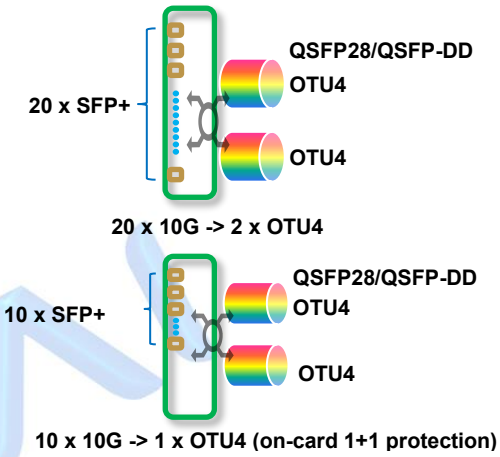
200G Muxponder (P512)	
Occupied slots	2 slots
Line-side	● 1 CFP2 optical port: 200G & 400G CFP2-DCO module, pluggable ● Support wavelength adjustable, range covering 191.35~196.1 THz ● Support adjustable light-emitting power ● Support 100G/200G programmable ● Support single-fiber bidirectional transmission (optional)
Client-side	Support hot-swapping of 20 SFP+ modules
OTN function	● Adopt ITU-T G709 recommended frame format and overhead handling ● ODUk (k=2, 2e, 4, C2) layer: support for PM and other functions ● OTUk (k=2, 2e, 4, C2) layer: supports SM functions
Supported service types	25GE, 10GE, STM-64, 10GE_WAN, FC800, FC1600, FC3200, OTU2, OTU2e
Latency measurement	Support line-side online delay measurement based on ODU layer
Loopback	Support line-side and client-side loopbacks
LLDP	Receive-only (rxonly) mode, 10GE service support
ALS	Client-side support when accessing non-OTN services
Alarms and performance monitoring	● Support OTN performance monitoring and alarm monitoring function ● Support Ethernet RMON monitoring function ● Support optical module temperature, current, optical power monitoring, etc. ● Support for Telemetry

P422: 100G Muxponder

The 100G Muxponder service card (P422) launched by Sintai Communication supports mapping 20x10G signals received on the client-side into two independent OTU4 signals or 10x10G signals into one OTU4 signal (on-card 1+1 protection), and the line-side supports QSFP28 gray optical modules or DCO coherent optical modules to realize the diversified transmission requirements for different distances and networks.

Product view

Function structure



Application scenario

- Suitable for metro and long-haul network transmission up to 1500km
- Suitable for high-capacity DCI network transmission in enterprises, campuses, cloud computing, etc.
- 100G links for existing OTN/DWDM infrastructure

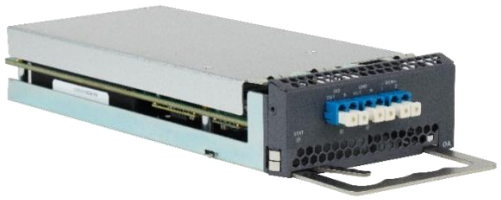
Product specification

100G Muxponder (P422)	
Occupied slots	2 slots
Line-side	● 2 QSFP28/QSFP-DD optical ports, support QSFP28 gray optical module or DCO optical module, pluggable ● Support wavelength adjustable, range covering 191.35~196.1 THz (DCO optical module)
Client-side	Support hot-swapping of 20 SFP+ modules
OTN function	● Adopt ITU-T G709 recommended frame format and overhead handling ● ODUk (k=2, 2e, 4) layer: support for PM and other functions ● OTUk (k=2, 2e, 4) layer: supports SM functions
Supported service types	10GE, STM-64, 10GE_WAN, FC800, FC1600, FC3200, OTU2, OTU2e
Loopback	Support line-side and client-side loopbacks
LLDP	Receive-only (rxonly) mode, 10GE service support
ALS	Client-side support when accessing non-OTN services
Protective function	Support on-card 1+1 protection (10*10G on client-side)
Alarms and performance monitoring	● Support OTN performance monitoring and alarm monitoring function ● Support Ethernet RMON monitoring function ● Support optical module temperature, current, optical power monitoring, etc. ● Support for Telemetry

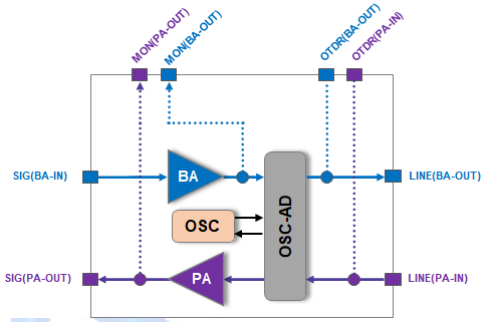
OA: Optical Amplifier Card(1-slot)

The main function of Optical Amplifier (OA) card launched by Sintai Communication is to compensate the power of signal light in the transmission link, and it can amplify the optical signals of up to 48 channels in C-band (channel spacing 100GHz) or 96 channels (channel spacing 50GHz) at the same time, and it has the features of gain flatness, adjustable gain and small noise index. At the same time, the card has built-in OSC optical monitoring channel to support OSC-based DCN communication, which is an indispensable part of DWDM system and future high-speed system, all-optical network long-distance transmission.

Product view



Function structure



Application scenario

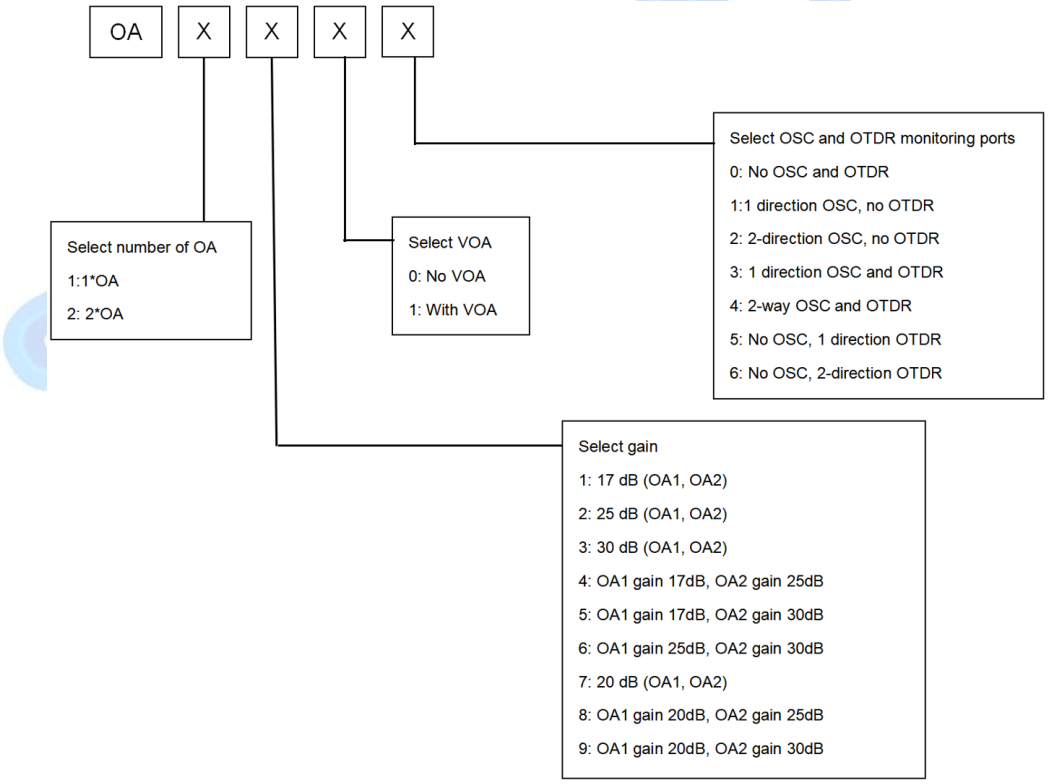
- For optical terminal stations (OTMs) for booster amplification of multiplexing signals and pre-amplification of demultiplexed signals
- Applicable to optical relay station (OLA), complete bidirectional transmission signal amplification, extend the transmission distance

Product specification

OA	
Occupied slots	1 slot
EDFA	● Optional built-in 1*EDFA (BA, PA, LA parameters optional) ● Optional built-in 2*EDFA (BA, PA, LA parameters optional)
OSC	● Option without OSC ● Optional built-in 1*OSC (OTM station) ● Optional built-in 2*OSC (OLA station) ● Working wavelength: 1510nm ● Operating rate: 1.25Gb/s
VOA	● Optional built-in VOA, quantity in line with EDFA ● Position: EDFA input front ● Intrinsic insertion loss: <1dB ● Adjustment range: 0 ~ 15dB ● Power down state is inherent insertion loss
MON monitoring port	Standard, optical power difference between MON and main optical channel 21~23dB
OTDR measurement port	● Optional, number of ports matches line interface ● OTDR signal wavelength: 1625nm

	● OTDR channel loss: <1dB		
EDFA Parameters			
Model	20G17	20G25	20G30
Wavelength range (nm)	1528 ~1568	1528 ~1568	1528 ~1568
Gain range (dB)	14 ~ 20	22 ~ 28	27 ~ 33
Maximum total output optical power (dBm)	≥20	≥20	≥20
Noise (dB)	<5.5 (nominal gain)	<5.5 (nominal gain)	<5.5 (nominal gain)
Gain flatness (dB)	<1.5	<1.5	<1.5
Polarization-related loss (dB)	< 0.5	< 0.5	< 0.5
Input optical power detection range (dBm)	-23 ~ 8	-31 ~ 0	-36 ~ -5
Output optical power detection range (dBm)	-6 ~ 20	-6 ~ 20	-6 ~ 20
Reflection coefficient (dB)	<-30	<-30	<-30
Gain stability (dB)	±0.5	±0.5	±0.5

OA model definition

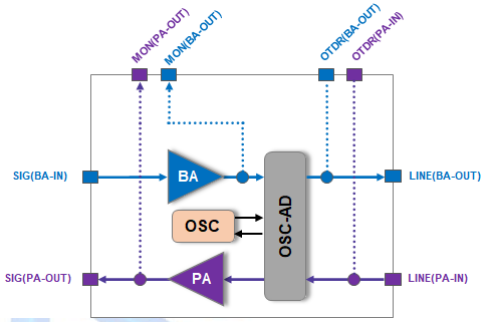


OTA: Optical Terminal Station Amplifier Card(2-slot)

The main function of Optical Terminal Station Amplifier (OTA) card launched by Sintai Communication is to compensate the power of signal light in the transmission link, and it can simultaneously amplify the optical signals of up to 48 channels in C-band (channel spacing 100GHz) or 96 channels (channel spacing 50GHz), with the features of flat gain, adjustable gain, small noise index, etc. At the same time, the card has a built-in OSC optical monitoring channel, which supports OSC-based DCN communication, and is an indispensable part of DWDM system and future high-speed system, all-optical network long-distance transmission.

Product view

Function structure



Application scenario

- For optical terminal stations (OTMs) for booster amplification of multiplexing signals and pre-amplification of demultiplexing signals

Product specification

Model Number	OTA25	
Occupied slots	2 slots	
Type of EDFA	BA	PA
Wavelength range	1528nm~1568nm	1528nm~1568nm
Operating mode	AGC or APC can be set	AGC or APC can be set
Gain range	8 ~ 18dB settable	15 ~ 25dB settable
Maximum total output optical power	≥21dBm	≥21dBm
Coefficient of noise	≤12.5dB (Gain=8dB) ≤9.1dB (Gain=12dB) ≤6.5dB (Gain=16~18dB)	≤8.1dB (Gain=15dB) ≤7.3dB (Gain=16dB) ≤6.6dB (Gain=17dB) ≤6.4dB (Gain=19dB) ≤5.8dB (Gain=20~22dB) ≤5.5dB (Gain=23~25dB)
Gain flatness	<1.5dB	<1.5dB
Gain slope	-3 ~ 0dB	-3 ~ 0dB
Polarization-related losses	< 0.5dB	< 0.5dB
Input optical power detection range	-18 ~ 13dB	-28 ~ 6dB
Output optical power detection range	-2 ~ 22dB	-2 ~ 22dB
Reflectance	<-30dB	<-30dB
Gain stability	±0.5dB	±0.5dB
VOA Location	-	Input front
VOA Intrinsic insertion loss	-	<1dB
VOA Adjustment range	-	0 ~ 15dB
MON Port	Spectral ratio 0.5% (21~23dB)	Spectral ratio 0.5% (21~23dB)
OTDR Monitoring channels	1625nm	1625nm

OTDR Monitoring channel loss	<1dB	<1dB
OSC Operating wavelength	1510nm	
OSC Operating rate	1.25Gb/s	
Surety	Support Automatic Power Reduction (APR) technology	

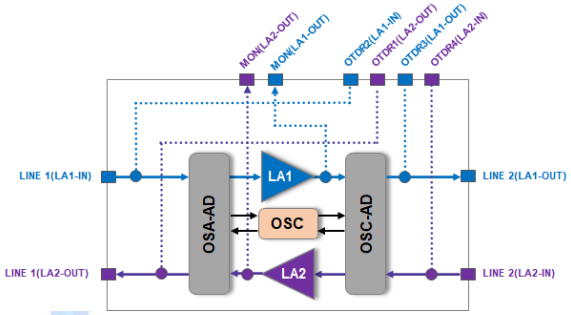
Model Number	**OTA35**	
Occupied slots	2 slots	
Type of EDFA	BA	PA
Wavelength range	1528 nm~1568nm	1528 nm~1568nm
Operating mode	AGC or APC can be set	AGC or APC can be set
Gain range	8 ~ 18dB settable	22 ~ 35dB settable
Maximum total output optical power	≥21 dBm	≥21 dBm
Coefficient of noise	≤12.5dB (Gain=8dB) ≤9.1dB (Gain=12dB) ≤6.5dB (Gain=16~18dB)	≤8dB (Gain=22dB) ≤7dB (Gain=24dB) ≤6.1dB (Gain=25dB) ≤5.9dB (Gain=27dB) ≤5.5dB (Gain=28~35dB)
Gain flatness	<1.5dB	<1.5dB
Gain slope	-3 ~ 0dB	-3 ~ 0dB
Polarization-related losses	< 0.5dB	< 0.5dB
Input optical power detection range	-18 ~ 13dB	-35 ~ 0dB
Output optical power detection range	-2 ~ 22dB	-2 ~ 22dB
Reflectance	<-30dB	<-30dB
Gain stability	±0.5dB	±0.5dB
VOA Location	-	Input front
VOA Intrinsic insertion loss	-	<1dB
VOA Adjustment range	-	0 ~ 15dB
MON Port	Spectral ratio 0.5% (21~23dB)	Spectral ratio 0.5% (21~23dB)
OTDR Monitoring channels	1625nm	1625nm
OTDR Monitoring channel loss	<1dB	<1dB
OSC Operating wavelength	1510nm	
OSC Operating rate	1.25Gb/s	
Surety	Support Automatic Power Reduction (APR) technology	

OLA: Optical Line Station Amplifier Card(2-slot)

The main function of Optical Line Station Amplifier (OLA) card launched by Sintai Communication is mainly used for line intermediate optical amplifier station, periodic compensation of each section of fiber loss, extend the transmission distance, can simultaneously amplify the C-band up to 48 channels (channel spacing 100GHz) or 96 channels (channel spacing 50GHz) of the optical signal. It has the features of flat gain, adjustable gain, small noise index, etc. At the same time, the card has built-in OSC optical monitoring channel, which supports DCN communication based on OSC, and it is an indispensable part of DWDM system and the future high-speed system and all-optical network for long-distance transmission.

Product view

Function structure



Application scenario

- Applicable to optical relay station (OLA), complete bidirectional transmission signal amplification, extend the transmission distance

Product specification

Model Number	OLA25	
Occupied slots	2 slots	
Type of EDFA	LA1	LA2
Wavelength range	1528nm~1568nm	1528nm~1568nm
Operating mode	AGC or APC can be set	AGC or APC can be set
Gain range	15 ~ 25dB settable	15 ~ 25dB settable
Maximum total output optical power	≥21dBm	≥21dBm
Coefficient of noise	≤8.1dB (Gain=15dB) ≤7.3dB (Gain=16dB) ≤6.6dB (Gain=17dB) ≤6.4dB (Gain=19dB) ≤5.8dB (Gain=20~22dB) ≤5.5dB (Gain=23~25dB)	≤8.1dB (Gain=15dB) ≤7.3dB (Gain=16dB) ≤6.6dB (Gain=17dB) ≤6.4dB (Gain=19dB) ≤5.8dB (Gain=20~22dB) ≤5.5dB (Gain=23~25dB)
Gain flatness	<1.5dB	<1.5dB
Gain slope	-3 ~ 0dB	-3 ~ 0dB
Polarization-related losses	< 0.5dB	< 0.5dB
Input optical power detection range	-28 ~ 6dB	-28 ~ 6dB
Output optical power detection range	-2 ~ 22dB	-2 ~ 22dB
Reflectance	<-30dB	<-30dB
Gain stability	±0.5dB	±0.5dB
VOA Location	Input front	Input front
VOA Intrinsic insertion loss	<1dB	<1dB
VOA Adjustment range	0 ~ 15dB	0 ~ 15dB

MON Port	Spectral ratio 0.5% (21~23dB)	Spectral ratio 0.5% (21~23dB)
OTDR Monitoring channels	1625nm	
OTDR Monitoring channel loss	<1dB	
OSC Operating wavelength	1510nm	
OSC Operating rate	1.25Gb/s	
Surety	Supports Automatic Power Reduction (APR) technology	

Model Number	**OLA35A**	
Occupied slots	2 slots	
Type of EDFA	LA1	LA2
Wavelength range	1528nm~1568nm	1528nm~1568nm
Operating mode	AGC or APC can be set	AGC or APC can be set
Gain range	22 ~ 35dB settable	22 ~ 35dB settable
Maximum total output optical power	≥21dBm	≥21dBm
Coefficient of noise	≤8dB (Gain=22dB) ≤7dB (Gain=24dB) ≤6.1dB (Gain=25dB) ≤5.9dB (Gain=27dB) ≤5.5dB (Gain=28~35dB)	≤8dB (Gain=22dB) ≤7dB (Gain=24dB) ≤6.1dB (Gain=25dB) ≤5.9dB (Gain=27dB) ≤5.5dB (Gain=28~35dB)
Gain flatness	<1.5dB	<1.5dB
Gain slope	-3 ~ 0dB	-3 ~ 0dB
Polarization-related losses	< 0.5dB	< 0.5dB
Input optical power detection range	-35 ~ 0dB	-35 ~ 0dB
Output optical power detection range	-2 ~ 22dB	-2 ~ 22dB
Reflectance	<-30dB	<-30dB
Gain stability	±0.5dB	±0.5dB
VOA Location	Input front	Input front
VOA Intrinsic insertion loss	<1dB	<1dB
VOA Adjustment range	0 ~ 15dB	0 ~ 15dB
MON Port	Spectral ratio 0.5% (21~23dB)	Spectral ratio 0.5% (21~23dB)
OTDR Monitoring channels	1625nm	
OTDR Monitoring channel loss	<1dB	
OSC Operating wavelength	1510nm	
OSC Operating rate	1.25Gb/s	
Surety	Supports Automatic Power Reduction (APR) technology	

Model Number	**OLA35B**	
Occupied slots	2 slots	
Type of EDFA	LA1	LA2
Wavelength range	1528nm~1568nm	1528 nm~1568nm
Operating mode	AGC or APC can be set	AGC or APC can be set
Gain range	15 ~ 25dB settable	22 ~ 35dB settable
Maximum total output optical power	≥21dBm	≥21 dBm
Coefficient of noise	≤8.1dB (Gain=15dB) ≤7.3dB (Gain=16dB) ≤6.6dB (Gain=17dB) ≤6.4dB (Gain=19dB) ≤5.8dB (Gain=20~22dB) ≤5.5dB (Gain=23~25dB)	≤8dB (Gain=22dB) ≤7dB (Gain=24dB) ≤6.1dB (Gain=25dB) ≤5.9dB (Gain=27dB) ≤5.5dB (Gain=28~35dB)
Gain flatness	<1.5dB	<1.5dB

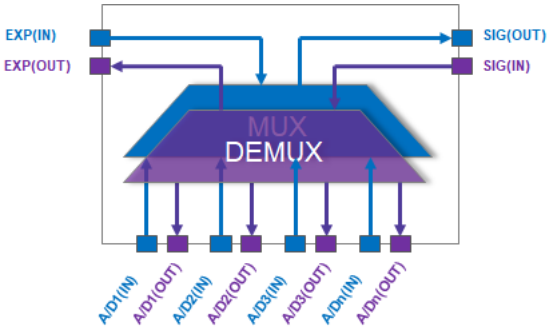
Gain slope	-3 ~ 0dB	-3 ~ 0dB
Polarization-related losses	< 0.5dB	< 0.5dB
Input optical power detection range	-28 ~ 6dB	-35 ~ 0dB
Output optical power detection range	-2 ~ 22dB	-2 ~ 22dB
Reflectance	<-30dB	<-30dB
Gain stability	±0.5dB	±0.5dB
VOA Location	Input front	Input front
VOA Intrinsic insertion loss	<1dB	<1dB
VOA Adjustment range	0 ~ 15dB	0 ~ 15dB
MON Port	Spectral ratio 0.5% (21~23dB)	Spectral ratio 0.5% (21~23dB)
OTDR Monitoring channels	1625nm	
OTDR Monitoring channel loss	<1dB	
OSC Operating wavelength	1510nm	
OSC Operating rate	1.25Gb/s	
Surety	Supports Automatic Power Reduction (APR) technology	

TFF/SBM: Fixed MuxDemux/OADM Card

The Fixed MuxDemux/ OADM(Optical Add Drop Multiplexer) card (TFF/SBM) launched by Sintai Communication which is designed for multi-wavelength DWDM network applications, which can multiplex different wavelengths of light onto a single fiber or separate multiple optical channels multiplexed on the same fiber by wavelength. It is based on thin-film filter technology, working in 100GHz channel spacing ITU grid, DWDM wavelength range of 1528nm to 1568nm, ITU channel wavelength can be selected; has a series of advantages such as low insertion loss, high channel isolation.

Product view

Function structure



Application scenario

- For multiplexing and demultiplexing of up to 8 channels of DWDM optical signals

Product specification

TFF/SBM		
Occupied slots	1 slot	
Model	4 channels	8 channels
Function	Support multiplexing and demultiplexing of 4 DWDM optical signals	Support multiplexing and demultiplexing of 8 DWDM optical signals
Number of channels	4λ@100GHz (191.4THz~196.1THz, single card model as in Table 1 below)	8λ@100GHz(192.1THz~196.0THz, single card model as in Table 2 below)
Channel insertion loss	≤2 dB	≤3 dB
3dB Spectral width	>75 GHz	>75 GHz
Adjacent channel isolation	>25 dB	>25 dB
Non-adjacent channel isolation	>35 dB	>35 dB
Power monitoring	Support optical power monitoring of SIG ports	
Indicator light	Support combined port (SIG) optical power status indicators	
Extended function	Support extended cascading, with EXP ports for cascading	

Table 1: Dual-fiber Fixed 4-channel MuxDemux/OADM Card Models

Card Model	Ports	Center Frequency (THz)
TFF5659	A56/D56~A59/D59	195.60 to 195.90
TFF5255	A52/D52~A55/D55	195.20 to 195.50
TFF4750	A47/D47~A50/D50	194.70 to 195.00
TFF4346	A43/D43~A46/D46	194.30 to 194.60
TFF3841	A38/D38~A41/D41	193.80 to 194.10
TFF3437	A34/D34~A37/D37	193.40 to 193.70
TFF2932	A29/D29~A32/D32	192.90 to 193.20
TFF2528	A25/D25~A28/D28	192.50~192.80
TFF2023	A20/D20~A23/D23	192.00~192.30
TFF1619	A16/D16~A19/D19	191.60 to 191.90

Table 2: Dual-fiber Fixed 8-channel MuxDemux/OADM Card Models

Card Model	Ports	Center Frequency (THz)
TFF5360	A53/D53~A60/D60	195.30 to 196.00
TFF4552	A45/D45~A52/D52	194.50 to 195.20
TFF3744	A37/D37~A44/D44	193.70 to 194.40
TFF2936	A29/D29~A36/D36	192.90 to 193.60
TFF2128	A21/D21~A28/D28	192.10~192.80

Table 3: Single-fiber Fixed 4-Channel MuxDemux/OADM Card Models

Card Model	Ports	Center Frequency (THz)	Note
SBM2242	A22/D39, A23/D40, A24/D41, A25/D42	Add: 192.20~192.50	Use in pairs
SBM4222	A39/D22, A40/D23, A41/D24, A42/D25	Add: 193.90 to 194.20	
SBM2646	A26/D43, A27/D44, A28/D45, A29/D46	Add: 192.60~192.90	Use in pairs
SBM4626	A43/D26, A44/D27, A45/D28, A46/D29	Add: 194.30 to 194.60	

Note: Single-fiber OADM cards need to be paired with customized single-fiber bi-directional OA cards to complete the network, please consult your sales manager for details.

Table 4: Single-fiber Fixed 8-Channel MuxDemux/OADM Card Models

Card Model	Ports	Center Frequency (THz)	Note
SBM2246	A22/D39, A23/D40, A24/D41, A25/D42	Add: 192.20~192.90	Use in pairs
SBM4622	A39/D22, A40/D23, A41/D24, A42/D25	Add: 193.90 to 194.60	

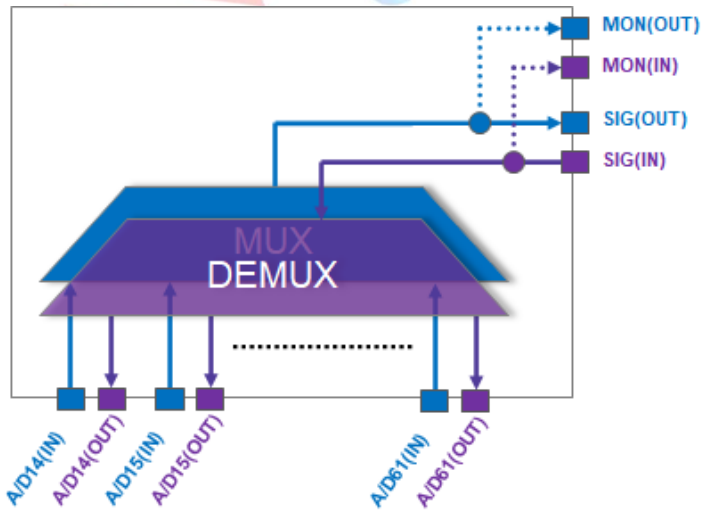
Note: Single-fiber OADM cards need to be paired with customized single-fiber bi-directional OA cards to complete the network, please consult your sales manager for details.

MUX48: 48CH Passive MuxDemux Rack

The 48-channel Passive MuxDemux (MUX48) rack launched by Sintai Communication is mainly used in DWDM wavelength division system to complete the function of multiplexing or demultiplexing 48 optical wavelengths in the C-band range, which can multiplex different wavelengths of light into a single optical fiber or separate multiple optical channels multiplexed in the same optical fiber according to wavelengths. It is based on waveguide grating technology on silicon substrate and adopts unique heatless package design, which can realize accurate channel coupling, low insertion loss, high channel isolation and high stability, and is suitable for 48-wave high-capacity DWDM system.

Product view

Function structure



Application scenario

- For multiplexing and demultiplexing 48-channel DWDM optical signals in the C-band

Product specification

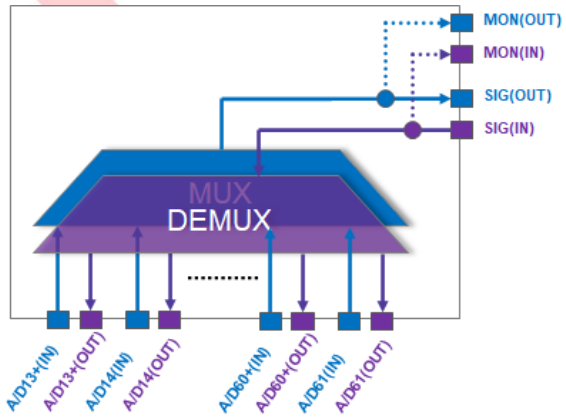
MUX48	
Function	Support multiplexing and demultiplexing of 48 DWDM optical signals in C-band
Dimensions (H x W x D)	1U: 44 mm (H) x 442 mm (W) x 220 mm (D)
Spectral type	Flat-top
ITU Passband frequency	±12.5 GHz
Channel spacing	0.8 nm(100 GHz)
Number of optical channels	48
Wavelength accuracy	≤0.04 nm
Channel insertion loss	≤5.5 dB
Insertion loss uniformity	≤1.5 dB
1dB Bandwidth	≥0.38 nm
3dB Bandwidth	≥0.56 nm
20dB Bandwidth	≤1.2 nm
Adjacent channel isolation	≥25 dB
Non-adjacent channel isolation	≥30 dB
Total crosstalk	≥22 dB
Return loss	≥40 dB
Polarization-related losses	≤0.5 dB
Polarization mode dispersion	≤0.5 ps
Dispersion	±20 ps
Operating temperature	-5 ~ +65 °C
Storage temperature	-40 ~ +85 °C
MON Port spectral ratio	21 dB (spectral ratio 1%)
Management	Provide RJ-45 management interface to connect with the rear interface card of OTNS8600-DCI8 device, read the SN/Model/PN information of the device through the network management system, and at the same time report the status of ONLINE/OFFLINE, with the ability of dumb resource management.

MUX96: 96CH Passive MuxDemux Rack

The 96-channel Passive MuxDemux (MUX96) rack launched by Sintai Communication is mainly used in DWDM wavelength division system to complete the function of multiplexing or demultiplexing 96 optical wavelengths in the C-band range, which can multiplex different wavelengths of light into a single optical fiber or separate multiple optical channels multiplexed in the same optical fiber according to wavelengths. It is based on waveguide grating technology on silicon substrate and adopts unique heatless package design, which can realize accurate channel coupling, low insertion loss, high channel isolation and high stability, and is suitable for 96-wave high-capacity DWDM system.

Product view

Function structure



Application scenario

- For multiplexing and demultiplexing 96 DWDM optical signals in C-band

Product specification

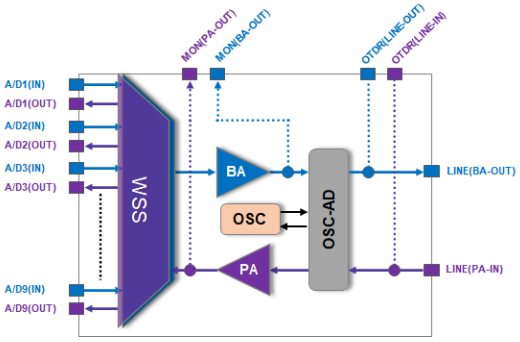
MUX96	
Function	Support multiplexing and demultiplexing of 96 DWDM optical signals
Dimensions (H x W x D)	2U: 88 mm (H) × 442 mm (W) × 220 mm (D)
Spectral type	flat-top
ITU Passband frequency	±6.25 GHz
Channel spacing	0.4 nm (50 GHz)
Number of optical channels	96
Wavelength accuracy	≤0.04 nm
Channel insertion loss	≤6.5 dB
Insertion loss uniformity	≤1.5 dB
1dB Bandwidth	≥0.18 nm
3dB Bandwidth	≥0.28 nm
20dB Bandwidth	≤0.7 nm
Adjacent channel isolation	≥25 dB
Non-adjacent channel isolation	≥25 dB
Total crosstalk	≥20 dB
Return loss	≥40 dB
Polarization-related losses	≤0.5 dB
Polarization mode dispersion	≤1.0 ps
Dispersion	±35 ps
Operating temperature	-5 ~ +65 °C
Storage temperature	-40 ~ +85 °C
MON Port spectral ratio	21 dB (spectral ratio 1%)
Management	Provide RJ-45 management interface to connect with the rear interface card of OTNS8600-DCI8 device, read the SN/Model/PN information of the device through the network management system, and at the same time report the status of ONLINE/OFFLINE, with the ability of dumb resource management

WSS: 9-Degree ROADM Card

The 9-Degree Optical Wavelength Selection Card (WSS) launched by Sintai Communication supports the integration of key functions WSS, BA, PA and OSC into a single card, with a built-in dual 1x9 WSS components with 9 ports for wavelength multiplexing and demultiplexing, supporting 96 channels (50GHz wavelength spacing) in the frequency range of 191.35THz ~ 196.10THz in the C-band of the DWDM network; and supports Flexible-Grid function, which realizes flexible adjustment of channel bandwidth and improves the spectrum utilization of the whole network.

Product view

Function structure



Application scenario

- For OADM station optical wavelength dynamics up, down and through
- For multi-degree optical wavelength dynamic penetration and scheduling at ROADM stations

Product specification

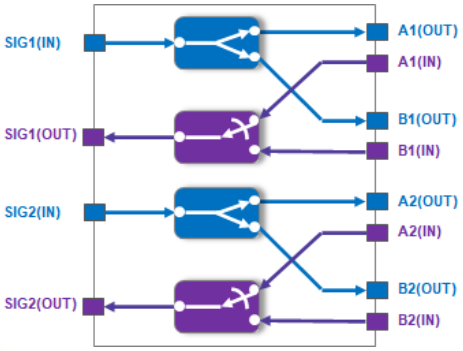
WSS	
Function	Support 9-port wavelength-selective multiplexing and demultiplexing, realizing dynamic penetration and scheduling of wavelengths; and support booster amplification and pre-amplification of line-side combining signals
Occupied slots	2 slots
Degree of integration	Built-in Twin 1x9 WSS, BA, PA, OSC, VOA, passive filters, etc.
Surety	Support Automatic Power Reduction (APR) technology
Monitoring port	Reserved OCM and OTDR monitoring ports for line-side transmit and receive directions, can be connected to external OCM and OTDR cards
Channel range	191.35 THz~196.1 THz, supports Flexible Grid, spectral width N*3.125 GHz adjustable
Maximum number of channels	96 channels (50 GHz interval)
Power regulation	Supports power adjustment for each channel, attenuation range 0 ~ 15 dB per wavelength, attenuation setting step 0.1 dB
Port isolation	>25 dB
Extinction ratio	≥25 dB
Polarization-related losses	≤1.5
Attenuation accuracy per wavelength	≤1 dB
Reconstruction time	≤3 s
Variable gain	BA supports 15 ~ 25 dB gain range adjustable; PA support 15 ~ 25 dB or 25 ~ 35 dB gain range adjustable (optional according to application scenarios)
Output optical power	Maximum total output optical power ≥21 dBm
Coefficient of noise	BA ≤ 5.5 dB (Gain=23~25 dB), 15 ~ 25 dB gain range adjustable module PA ≤ 5.5 dB (Gain=23~25 dB), 15 ~ 25 dB gain range adjustable module PA ≤ 5.5 dB (Gain=28~35 dB), 25 ~ 35 dB gain range adjustable module
Line-side VOA location	PA input preamplifier (BA without VOA)
VOA Intrinsic insertion loss	<1 dB
VOA Adjustment range	0 ~ 15 dB
OSC Operating wavelength	1510 nm
OSC Operating rate	1.25 Gb/s
OTDR Channel wavelength	1625 nm
OTDR Channel loss	<1 dB

OLP: Optical Line Protection Card

The main function of Optical Line Protection (OLP) card launched by Sintai Communication is to assist wavelength division system to complete the optical line 1+1 protection, optical wavelength 1+1 protection and other optical layer protection solutions, which can real-time monitoring of the main and standby routes of optical signal status, once the optical signal interruption or performance degradation occurs, it can be automatically in the main and standby routes for the security of the inversion, to ensure that the system optical signal is quickly recovered; OLP technology is to complete the route switching operation in the optical layer, the optical layer protection has the incomparable advantages of the upper layer of service protection, and it is the best solution to provide users with non-blocking communication.

Product view

Function structure



Application scenario

- For Optical Line 1+1 Protection (OLP)
- For Optical Multiplexing Segment 1+1 Protection (OMSP)
- For Optical Channel 1+1 Protection (OCHP)

Product specification

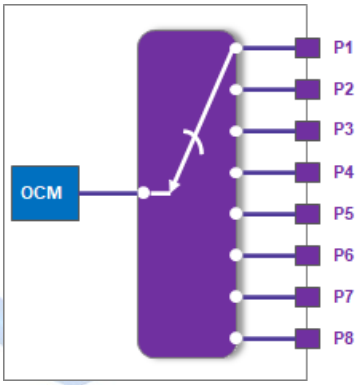
OLP	
Function	Support 1+1 protection for optical signals, dual transmitter-receiver selection, single-ended inversion
Occupied slots	1 slot
Degree of integration	Support 1 or 2 groups of optical protection modules **(optional according to application scenarios)**
Operating wavelength range	1528 nm ~ 1568 nm
Insertion loss	Transmitter ≤ 4 dB, Receiver ≤ 1.5 dB
Cutoff time	<5 ms (pure optical switching time)
Input optical power	-25 dBm ~ +21 dBm
Optical power detection accuracy	±0.5 dBm (@> -25 dBm or more)
Polarization-related losses	≤0.1 dB
Degree of isolation	>50 dB
Return loss	>45 dB
Switching times	＞(10)^7
Inversion condition	Relative power difference and absolute power values
Inversion	Support locking, forced reversal, manual reversal, and automatic reversal methods
Dependability	Power-down/power-up tethering, hot-plugging, and main controller's failure don't affect protection reversal

OCM8: Optical Channel Monitoring Card

The main function of Optical Channel Monitoring (OCM) card launched by Sintai Communication is to analyze the transmission signal performance of the combined signal spectrum, channel optical power and wavelength in the wavelength range of 1528nm-1567nm of the DWDM system, which has the features of high stability, high sensitivity, accuracy, high dynamic range and short scanning time, etc. It is an indispensable part in the optical performance monitoring of DWDM system.

Product view

Function structure



Application scenario

- Ideal for end-to-end monitoring of optical performance throughout the entire process.

Product specification

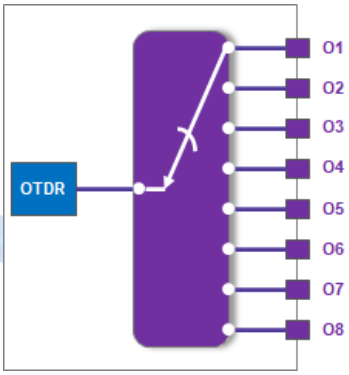
OCM8	
Function	Support testing of the center wavelength, optical power and other parameters of each channel of a combined wave optical signal
Occupied slots	1 slot
Ports	Provide 8 test interfaces (selected by optical switch), can be accessed 8 cores combined optical signal test
Operating wavelength range	1528.57 nm ~1567.34 nm (191.27 THz ~ 196.15 THz)
Channel spacing	50/100 GHz with Flexible Grid support
Center wavelength detection	±0.1 nm
Center wavelength resolution	0.02 nm
Channel power monitoring range	-40 ~ -10 dBm
Absolute power accuracy	≤1 dB
Power relative accuracy	±0.8 dB
Optical power resolution	0.1 dB
Return loss	≥40 dB
Scanning time	≤1 s
Number of scans	＞(10)^9

OTD8: Optical Time Domain Reflectometer Card

The Optical Time Domain Reflectometer (OTDR) card launched by Sintai Communication supports the monitoring of 8-core fiber optic links, which is used to launch the probe light and perform power analysis on the probe signal reflected back from the optical reflector for fiber optic line fault location and performance statistics. With outstanding features such as high dynamic range and high level resolution, it is an essential core device in optical transmission systems.

Product view

Function structure



Application scenario

- Ideal for rapid diagnosis and centralized management of fiber optic faults

Product specification

	OTD8
Function	Support the testing of distance, attenuation, total loss and other parameters of fiber links
Occupied slots	1 slot
Ports	Provide 8 test interfaces (selected by optical switch), can access 8-core fiber optic link test
Operating wavelength	1625 nm
Dynamic range	≥30 dB
Pulse width range	0.02 ~ 20 us
Maximum detection distance	≥80 km
Loss test accuracy	±0.5 dB
Distance test accuracy	<20 m
Event blind spot	<10 m
Attenuation blind spot	<20 m

WDM SYSTEM

OTNS8600-WDM Platform

Your optical transmission expert
Original Manufacturer

OTNS8600 I / II / V: WDM Chassis

Along with the rapid development of the Internet, the pressure on bandwidth caused by the blowout growth of data traffic makes it urgent to introduce 100G systems in transmission networks, therefore, Guangzhou Sintai Communication Co., Ltd. has launched a new generation of high-capacity, long-distance 400G wavelength-division transmission equipment OTNS8600 series products. The product applies advanced transmission technology, supports single channel transmission rate from 100Mbps to 400Gbps, and is oriented to 800Gbps and 1.2Tbps expansion, providing wide bandwidth, large capacity, fully transparent transmission function, which can achieve smooth upgrade of capacity, providing a stable platform for multi-service operation and future network upgrade and expansion, widely used in operators, broadcasting, IDC, finance, government, cloud network, big data and other industries.

OTNS8600 IB | 1RU

OTNS8600 IF | 1RU

OTNS8600 II | 2RU

OTNS8600 V | 5RU

Product Features

- **Extra large transmission capacity**

  Supports 64×400G ultra-large capacity transmission, i.e. the maximum transmission capacity of a single optical fibre can be up to 25.6Tb/s. Meanwhile, it supports 80/96×10G/200G hybrid transmission and smooth upgrading from 40-wave to 80-wave and 48-wave to 96-wave, which ensures low investment at the initial stage of network construction and smooth expansion in the later stage to meet the growing bandwidth demand in the future.

- **Superior ultra 100G transmission performance**

  Adopts coherent detection and high-order modulation technology, supports SD-FEC, excellent B2B OSNR tolerance index, uses the industry's advanced DSP processing technology, dispersion-free compensation, and supports more than 2,000km of unelectrified relay transmission, which saves investment and greatly facilitates operation and maintenance.

- **Flexible and comprehensive service access capabilities**

  Supports 100M-100G any service access: CPRI1~10, eCPRI, FE/GE/10GE/25GE/40GE/100GE, FC 1G~32G, STM-N, OTU1/2/3/4 and other service access, all-service transparent transmission, reduce the circuit-crossing transmission delay.

- **Reliable, carrier-grade protection**

  Supporting a variety of network protection schemes, such as optical layer 1+1 channel protection and optical line side 1+1 protection, providing multiple protection for important equipment units and optical fibre lines, supports AC 220V/110V, DC -48V power supply, 1+1 power protection.

- **Superior architecture, easy to maintain**

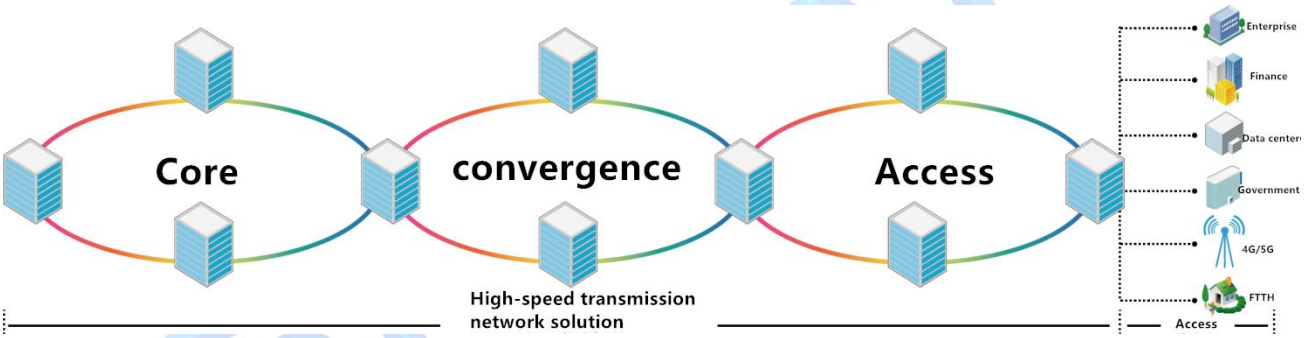
  Adopting 1U, 2U, 5U standard 19-inch rack design, completely configuration-free installation, plug-and-play equipment, unified network management platform, providing perfect network and equipment performance monitoring capabilities.

Product Specification

Parameter	Description			
Product model	OTNS8600 IB	OTNS8600 IF	OTNS8600 II	OTNS8600 V
Equipment size (HxWxD, mm)	1U: (rear power supply) 44 × 442 × 280	1U: (front power supply) 44 × 442 × 220	2U: (front power supply) 88 × 442 × 220	5U: (front power supply) 220 × 442 × 220
Service slots	4 slots	4 slots	8 slots	16 slots
Power consumption	120W (max)	50W (max)	160W (max)	450W (max)
Maximum number of channels	CWDM: 18 waves, DWDM: 96 waves (50 GHz)			
Maximum single-channel rate	400Gbit/s			
Line rate	1.25Gbit/s, 2.5Gbit/s, 10Gbit/s, 25Gbit/s, 40Gbit/s, 100Gbit/s, 200Gbit/s, 400Gbit/s			
Supported service types	● STM-1/4/16/64/256, OC-3/12/48/192/768 ● OTU-1/2/3/4 ● FE/GE/10GE/25GE/40GE/100GE ● FC 1G/2G/4G/8G/16G/32G ● EPON, GPON, CPRI 1/2/3/6/7/10, eCPRI			
Clock characteristics	Support IEEE 1588V2 pass-through			
Network topology	Point-to-point, chain, mesh, ring			
Network level protection	Optical channel 1+1 protection, optical multiplex section 1+1 protection, optical line 1+1 protection			
Device-level protection	Power supply 1+1 backup			
Network management	● SNMP ● Visual Web interface			

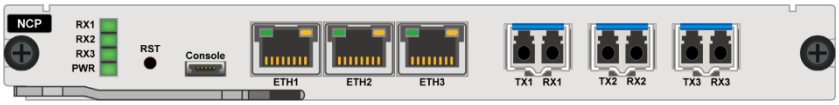
	● OTNS8600 network management system(NMS)
Installation	19" Standard rack mount
Operating temperature range	-5℃～50℃
Operating humidity range	5 to 95% non-condensing
Storage temperature range	-40℃～85℃
Heat dissipation	Fan cooling
Power supply method	AC: 90 ~ 260V or DC: -36 ~ -72 V

Network Positioning



NCP: Network Management Card

NCP is a network management module specially designed for OTNS8600 series products by Guangzhou Sintai Communication Co., Ltd. Its main function is to provide an interface between the equipment and network management system, and to complete the management of each card of the network element, all kinds of maintenance and management signal transmission with the OTNS8600 network management system of OTNS8600 series, so as to realize real-time monitoring, maintenance and management of the equipment elements and the whole synchronous equipment network.



Product Features

- Adopts high-speed ARM processor, it provides powerful data processing capability, collects the status information, alarm events and performance parameter of each single-card functional module, transforms, processes and stores them, and at the same time passes the control and management information to other functional blocks of the equipment.
- Provide 1 Console interface to support emulation terminal operation.
- Provide 3 RJ45 Ethernet interfaces, support IP-based graphical SNMP network management.
- Provide 3 SFP optical module interfaces to support the in-band management of the device, realize the processing of 3 optical monitoring channels, and complete the processing of receiving and transmitting optical signals of the optical monitoring channels at each site.
- Supports hot-plugging and does not affect the work of the current service module even after failure.

Product Specification

Parameter	Description
Local management serial port	1 Micro-USB Local Management Serial Port
Remote management Ethernet port	3 RJ45 Ethernet interfaces, interface rate 10/100/1000M adaptive
OSC optical supervisory port	3 Pluggable optical SFP ports with LC type interfaces
Network management	Support SNMP, Web, NMS centralized network management
Exchange function	Support IP communication function between devices, realizing integrated management of multiple devices
Protective function	Hot-swapping or failure of network management cards does not affect existing services
Maintenance function	Support local or remote online software upgrades
Reset function	Support hardware reset of the local NCP card by operating the keypad
Initialization function	Support operation of keys to initialize local NCP card hardware
Operating temperature	-10℃~+60℃
Operating humidity	5%~95%
Number of slots occupied	Supports the full range of OTNS8600 chassis, occupying 1 slot
Maximum power consumption	5W

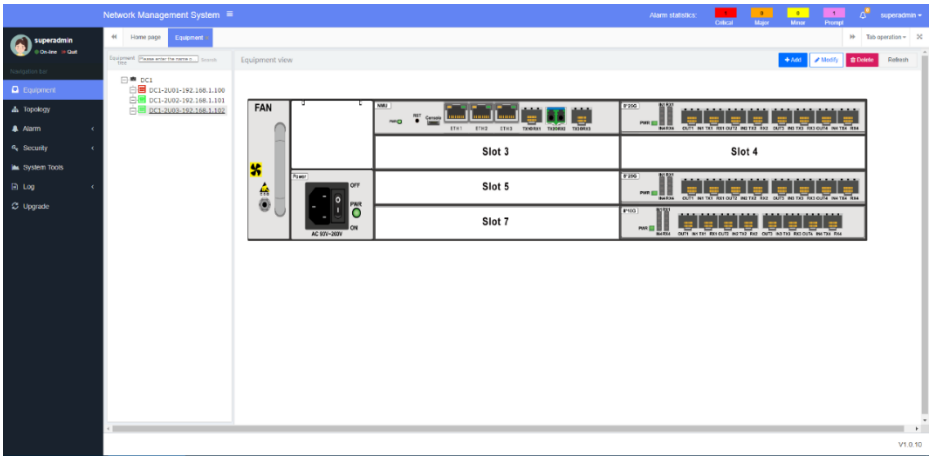
NMS: OTNS8600 Network Management System

The OTNS8600 Network Management System(NMS) launched by Guangzhou Sintai Communication Co., Ltd. is based on the B/S architecture research and development, and supports the unified management of the entire line of communication network products of Sintai Communication, realizing the management functions of the whole network system in terms of failure, performance, configuration, security, etc.; through the use of the network management system, it can improve the quality of the network service, reduce the cost of maintenance, and provide a guarantee for the rational use of the network resources. It also provides standard external interfaces for use by upper-level network management, providing a complete solution for network management of the transmission network.

Product Features

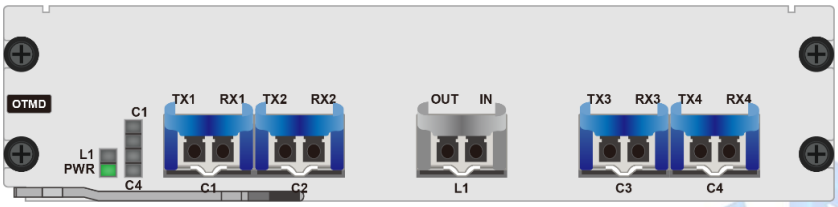
- **Topology Management:** Display the status of managed network elements and their connections in a topology diagram, and understand the network organization and monitor the operation status of the whole network in real time by browsing the topology view.
- **Alarm Management:** Provide network-wide alarm monitoring, remote alarm notification and other ways to notify the maintenance personnel at the first time to ensure the real-time effectiveness of troubleshooting.
- **Performance Management:** Monitor the key performance indicators of the network through the visualized operation interface, and provide statistics on the collected performance data to facilitate users to manage the network performance.
- **Log Management:** Record information about operating network management and important events occurring in the system. By regularly querying, counting and saving the log information, it helps network administrators to discover illegal login, illegal operation or conduct fault analysis in time.
- **Security Management:** Security control of the network management system itself is achieved through user management, operation authorization (decentralized and sub-domain) management and user login management.
- **Upgrade Management:** Used for upgrading/downgrading network element software.
- **System Management:** Used to backup and restore the network management system for quick recovery when the network management system is upgraded or migrated.

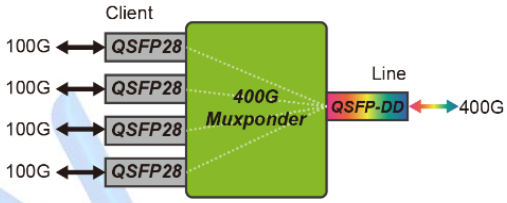
Network Management Interface



OTMD: 400G Muxponder(QSFP-DD)

The 400G Muxponder Service Card launched by Sintai Communication Co., Ltd. supports 4x100G↔400G electrical layer multiplexing/demultiplexing and converts to one 400G rate WDM standard wavelength optical signal, so as to facilitate WDM multiplexing of different wavelengths by the combiner unit, and at the same time realizes the inverse process of the above process. The line side adopts pluggable QSFP-DD DCO, which realizes ultra-long distance transmission based on coherent detection and other advanced technologies, and supports 100G/200G/400G rate configurability.



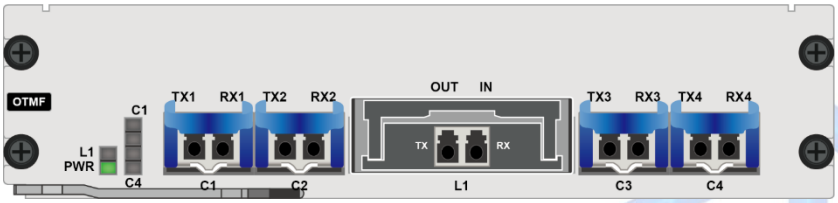


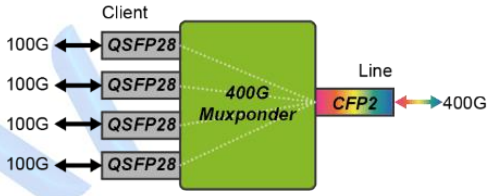
Product Specification

Parameter	Description
Product model	OTMD
Line side	● 1 QSFP-DD optical port: using 400G QSFP-DD DCO module, pluggable ● Support wavelength adjustable, range covering 191.35~196.1 THz ● Support adjustable light-emitting power (-10dBm~-20dBm) ● Support 100G/200G/400G programmable
Client side	4 QSFP28 optical ports pluggable
Supported service types	100GE, 100GE_RS-FEC
Loopback	Support line-side and client-side loopbacks
LLDP	100GE, 100GE_RS-FEC service support
ALS	Support automatic laser turn-off and turn-on based on optical signal inputs
Alarm delayed insertion	Support Local Fault alarm delayed insertion and delay time setting
Performance monitoring	● Support optical signal-to-noise ratio, pre-correction BER, non-correctable BER blocks and other performance monitoring ● Support optical module temperature, current, voltage, optical power and other performance monitoring ● Support Ethernet layer performance monitoring
Number of slots occupied	Support the full range of OTNS8600 chassis, occupying 2 slots
Maximum power consumption	60W (with optical module)

OTMF: 400G Muxponder(CFP2)

The 400G Muxponder Service Card launched by Guangzhou Sintai Communication Co., Ltd. supports 4x100G↔400G electrical layer multiplexing/demultiplexing and converts it into one 400G rate WDM standard wavelength optical signal, so as to facilitate the combining unit to carry out wavelength-division multiplexing of different wavelengths of optical signals, and at the same time, realise the inverse process of the above mentioned process. The line side adopts pluggable CFP2 DCO to achieve ultra-long distance transmission based on coherent detection and other advanced technologies, and supports 100G/200G/400G rate configurability.



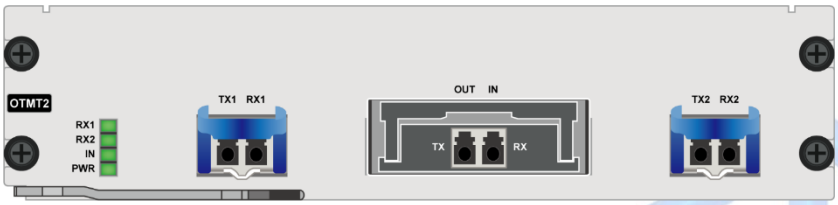


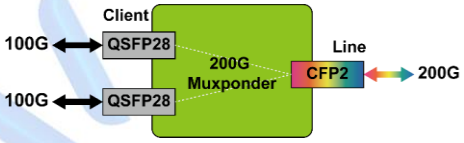
Product Specification

Parameter	Description
Line side	● 1 CFP2 optical port: using 400G CFP2-DCO module, pluggable ● Support wavelength adjustable, range covering 191.35~196.1 THz ● Support adjustable light-emitting power ● Support 100G/200G/400G programmable ● Support single-fibre bidirectional transmission (optional)
Client side	4 QSFP28 optical ports pluggable
Supported service types	100GE, 100GE_RS-FEC, OTU4
Latency measurement	Support line-side online delay measurement based on ODU layer
Loopback	Support line-side and client-side loopbacks
LLDP	100GE, 100GE_RS-FEC service support
ALS	Support automatic switching off and on of the laser according to the optical signal input
Alarm delayed insertion	Support Local Fault alarm delayed insertion and delay time setting
Performance monitoring	● Support optical signal-to-noise ratio, pre-correction BER, non-correctable BER block, dispersion compensation, differential group delay and other performance monitoring ● Support optical module temperature, current, voltage, optical power and other performance monitoring ● Support OTU layer and Ethernet layer performance monitoring
Number of slots occupied	2 slots
Maximum power consumption	60W (with optical module)

OTMT2: 200G Muxponder(CFP2)

The 200G Muxponder Service Card launched by Guangzhou Sintai Communication Co., Ltd. supports 2x100G↔200G electrical layer multiplexing/demultiplexing and converts it to one 200G rate WDM standard wavelength optical signal, so as to facilitate the WDM multiplexing of different wavelengths by the combining unit, and at the same time, realise the inverse process of the above mentioned process. The line side adopts pluggable CFP2 DCO to achieve ultra-long distance transmission based on coherent detection and other advanced technologies, and supports 100G/200G rate configurability.



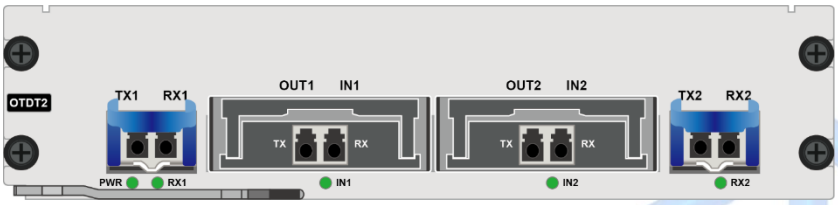


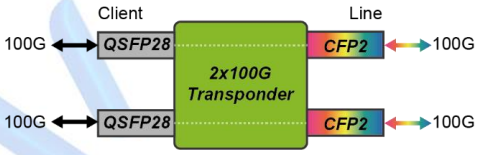
Product Specification

Parameter	Description
Line side	● 1 CFP2 optical port: using 200G/400G CFP2-DCO module, pluggable ● Support wavelength adjustable, range covering 191.35~196.1 THz ● Support adjustable light-emitting power ● Support 100G/200G programmable ● Support single-fibre bidirectional transmission (optional)
Client side	2 QSFP28 optical ports pluggable
Supported service types	100GE, 100GE_RS-FEC, OTU4
Loopback	Support line-side and client-side loopbacks
ALS	Support automatic switching off and on of the laser according to the optical signal input
Alarm delayed insertion	Support Local Fault alarm delayed insertion and delay time setting
Performance monitoring	● Support optical signal-to-noise ratio, pre-correction BER, non-correctable BER block, dispersion compensation, differential group delay and other performance monitoring ● Support optical module temperature, current, voltage, optical power and other performance monitoring ● Supports OTU layer and Ethernet layer performance monitoring
Number of slots occupied	2 slots
Maximum power consumption	36W (with optical module)

OTDT2: 2*100G Transponder (CFP2)

The 2*100G Transponder Service Card launched by Guangzhou Sintai Communication Co., Ltd. supports two 100G service accesses and converts them into two 100G rate WDM standard wavelength optical signals, so as to facilitate the WDM multiplexing of different wavelength optical signals by the combining unit, and at the same time, realise the inverse process of the above mentioned process. The line side adopts pluggable CFP2 DCO to achieve ultra-long distance transmission based on coherent detection and other advanced technologies.



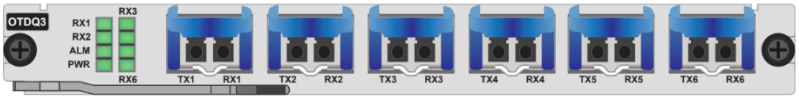


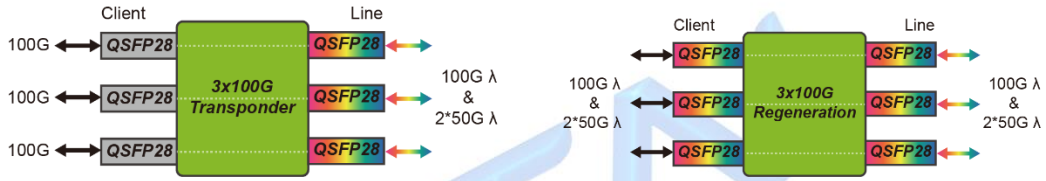
Product Specification

Parameter	Description
Line side	● 2 CFP2 optical ports: using 100G/200G CFP2-DCO modules, pluggable ● Support wavelength adjustable, range covering 191.35~196.1 THz ● Support adjustable light-emitting power (optional) ● Support single-fibre bidirectional transmission (optional)
Client side	2 QSFP28 optical ports pluggable
Supported service types	● 100GE, 100GE_RS-FEC ● OTU4 (optional)
Loopback	Support line-side and client-side loopbacks
ALS	Supports automatic switching off and on of the laser according to the optical signal input
Performance monitoring	● Support optical signal-to-noise ratio, pre-correction BER, non-correctable BER block, dispersion compensation, differential group delay and other performance monitoring ● Support optical module temperature, current, voltage, optical power and other performance monitoring ● Supports OTU layer and Ethernet layer performance monitoring
Number of slots occupied	2 slots
Maximum power consumption	65W (with optical module)

OTDQ3: 100G Transponder(QSFP28)

The 100G Transponder Service Card launched by Guangzhou Sintai Communication Co., Ltd. supports three 100G service accesses and converts them into three 100G-rate or six 50G-rate WDM-standard wavelength optical signals, so as to facilitate WDM multiplexing of different wavelengths of optical signals by combining units, and at the same time, realise the inverse process of the above mentioned process. It is suitable for intra-city WDM short-haul transmission solutions.



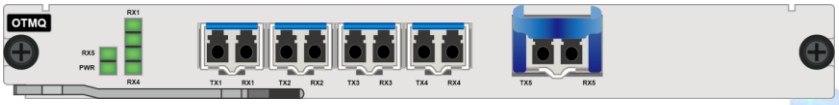


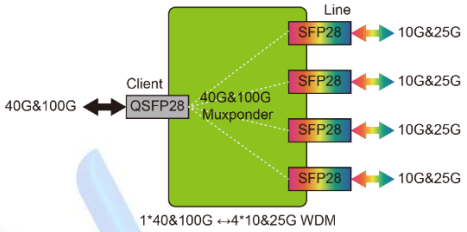
Product Specification

Parameter	Description
Line mode	Support 3 *100G service wavelength conversion
Relay mode	Support 3*100G service relay regeneration
Connector	● 6, QSFP28-based pluggable ● Line-side support for 100G QSFP28 DCO optical modules and 100G QSFP28 PAM4 DWDM optical modules ● Line-side support for wavelength tunability covering 191.35~196.1 THz (100G QSFP28 DCO support)
Supported service types	● 100GE, 100GE_RS-FEC ● OTU4 (100G QSFP28 DCO support)
Loopback	Supported when using 100G QSFP28 DCOs
ALS	Support automatic switching off and on of the laser according to the optical signal input
Performance monitoring	● Support performance monitoring of optical SNR, pre-correction BER, uncorrectable BER blocks, etc. (supported by 100G QSFP28 DCO) ● Support performance monitoring such as pre-correction BER and post-correction BER (100G QSFP28 PAM4 DWDM support) ● Support optical module temperature, current, voltage, optical power and other performance monitoring
Number of slots occupied	1 slot
Maximum power consumption	● 60W (line mode: using 100G QSFP28 DCO) ● 30W (line mode: using 100G QSFP28 PAM4 DWDM)

OTMQ: 40G & 100G Muxponder(In-coherent)

The 40G&100G Muxponder Service Card launched by Guangzhou Sintai Communication Co., Ltd. supports one 40G&100G service access and converts it into four WDM standard wavelength optical signals at 10G&25G rates, so as to facilitate the WDM multiplexing of different wavelengths of optical signals by the combining unit, and at the same time, realise the inverse process of the above mentioned process. It is suitable for 40G/100G reverse multiplexing intra-city WDM short-haul transmission solution.



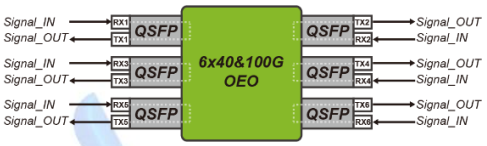


Product Specification

Parameter	Description
Line side	● 4*SFP+ / SFP28 optical ports: using 10G SFP+ or 25G SFP28 (WDM optical modules with CDR), pluggable ● Support CWDM 18-wave, DWDM 96-wave @50GHz
Client side	1*QSFP+ / QSFP28 optical port pluggable
Supported service types	● 40GE, OTU3 (40G support) ● 100GE, 100GE_RS-FEC, OTU4 (100G support)
ALS	Support automatic switching off and on of the laser according to the optical signal input
Performance monitoring	Support optical module temperature, current, voltage, optical power and other performance monitoring
Number of slots occupied	1 slot
Maximum power consumption	13W (with optical module)

OTSQ6: 40G & 100G OEO Card

The 40G & 100G OEO Card launched by Guangzhou Sintai Communication Co., Ltd. is designed with the industry's highest-performance and most flexible Clock and Data Recovery (CDR) family of chips, which perfectly realise regenerative amplification and signal clean-up and shaping of 40G & 100G optical signals, and are widely used in carriers, private networks, and information technology fields.

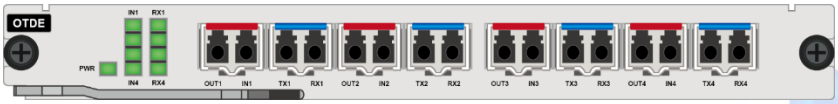


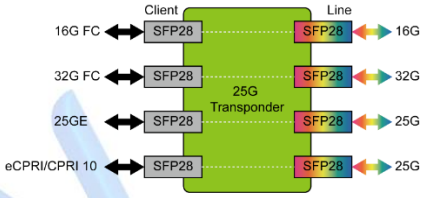
Product Specification

Parameter	Description
Application scenario	● Support 6 unidirectional 40G signals, relay regeneration and signal amplification ● Support 6 unidirectional 100G signals, relay regeneration and signal amplification
Connector	6, based on QSFP+ or QSFP28 pluggable
Support service rate	● 40Gbps ● 100Gbps
ALS	Support automatic switching off and on of the laser according to the optical signal input
Performance monitoring	Support optical module temperature, current, voltage, optical power and other performance monitoring
Number of slots occupied	1 slot
Maximum power consumption	26W (including optical modules)

OTDE: 4*25G Transponder

The 4*25G Transponder Service Card launched by Guangzhou Sintai Communication Co., Ltd. supports four 10G~32G rate service accesses and converts them into four WDM standard wavelength optical signals so that the combining unit can carry out wavelength-division multiplexing for different wavelengths optical signals, and at the same time realise the inverse process of the above mentioned process. It is suitable for eCPRI wireless pre-transmission, 10G/25G Ethernet and 8G/16G/32G FC service access WDM transmission solutions.



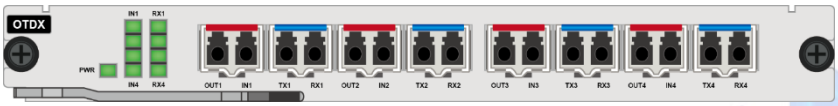


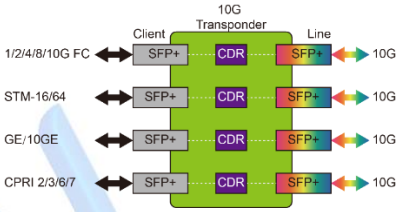
Product Specification

Parameter	Description
Line mode	Support 4*10~32G rate service wavelength conversion (WDM optical modules with CDR)
Relay mode	Support 4*10~32G rate service relay regeneration (WDM optical modules with CDR)
Connector	● 8, based on SFP28 pluggable ● Line-side support for CWDM 18-wave, DWDM 96-wave @50GHz
Supported service types	● 10GE, 25GE ● 8G/16G/32G FC ● eCPRI, CPRI 10
ALS	Support automatic switching off and on of the laser according to the optical signal input
Performance monitoring	Support optical module temperature, current, voltage, optical power and other performance monitoring
Number of slots occupied	1 slot
Maximum power consumption	16W (with optical module)

ODTX: 4*10G Transponder

The 10G OTU service card launched by Guangzhou Sintai Communication Co., Ltd. supports 4 types of service access at 1.25G~11.3G rates, and performs 3R regeneration (Re-Amplification, Re-Shaping, Re-Timing) on the access signal, and then converts it into 4 WDM standard wavelength optical signals, so that the multiplexing unit can perform wavelength division multiplexing on optical signals of different wavelengths, and realize the reverse process of the above process at the same time. It is suitable for wavelength division transmission solutions for service access at any rate below 1.25G~11.3G.



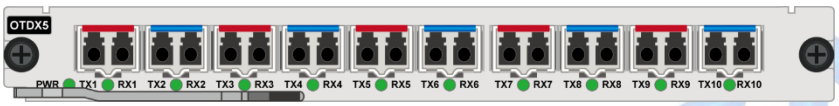


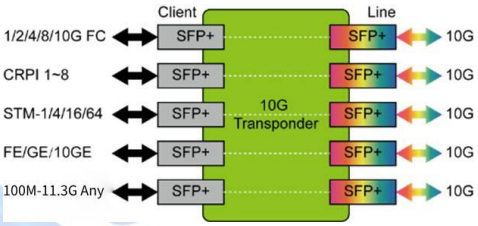
Product Specification

Parameter	Description
Line mode	Supports access to 4*1.25G~11.3G bidirectional service wavelength conversions Supports access to 8*1.25G~11.3G unidirectional service wavelength conversions (interface configuration loopback)
Relay mode	Supports 4*1.25G~11.3G bidirectional service relays Supports 8*1.25G~11.3G unidirectional service relays (interface configuration loopback)
3R Function	Re-Amplification, Re-Shaping, Re-Timing
Connector	● 8, SFP+-based pluggable ● Line-side support for CWDM 18-wave, DWDM 96-wave @50GHz
Supported service types	● GE, 10GE ● 1/2/4/8/10G FC ● STM-16/64 ● CPRI-2/3/6/7
Loopback	Support line-side and client-side loopbacks
ALS	Support automatic switching off and on of the laser according to the optical signal input
Performance monitoring	Support optical module temperature, current, voltage, optical power and other performance monitoring
Number of slots occupied	1 slot
Maximum power consumption	16W (with optical module)

OTDX5: 5*10G Transponder

The 5x10G Transponder Service Card launched by Guangzhou Sintai Communication Co., Ltd. supports five any type of service access at 100M~11.3G rates and converts them into five WDM standard wavelength optical signals, so as to facilitate the combining unit to carry out wavelength division multiplexing for different wavelengths optical signals, and at the same time, realise the inverse process of the above mentioned process. It is suitable for 100M~11.3G rate any type of service access WDM transmission scheme.



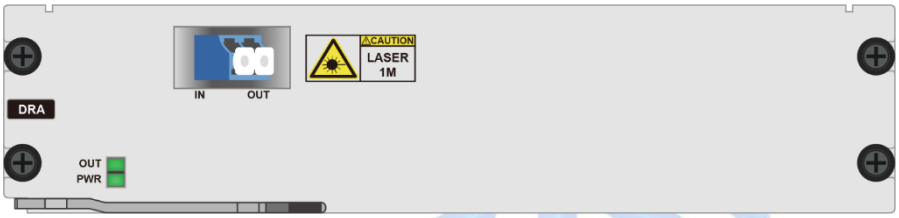


Product Specification

Parameter	Description
Line mode	Support 5*100M~11.3G rate service wavelength conversion (WDM optical modules with CDR)
Relay mode	Support 5*100M~11.3G rate service relay regeneration (WDM optical modules with CDR)
Connector	● 10, SFP-based pluggable ● Line-side support for CWDM 18-wave, DWDM 96-wave @50GHz
Supported service types	● FE, GE, 10GE ● 1/2/4/8/10G FC ● STM-1/4/16/64 ● OTU1/OTU2/OTU2e ● CPRI-1~8
ALS	Supports automatic switching off and on of the laser according to the optical signal input
Performance monitoring	Support optical module temperature, current, voltage, optical power and other performance monitoring
Number of slots occupied	1 slot
Maximum power consumption	20W (with optical module)

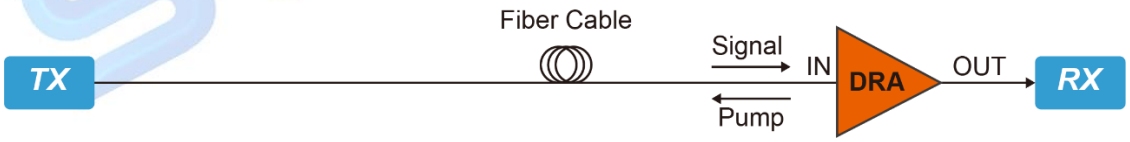
DRA: Raman Optical Amplifier Card

The DRA (Distributed Raman Amplifier) Raman Optical Amplifier Card launched by Guangzhou Sintai Communication Co., Ltd. utilizes the Raman scattering effect in the quartz fiber to provide gain to the optical signal. Adopting 14xxnm wavelength laser as Raman pumping, it provides gain to C-band signal light, which can effectively compensate for the attenuation of optical signal in fiber long-distance transmission to extend the power budget of optical link and significantly improve OSNR, suitable for long-distance optical transmission system.

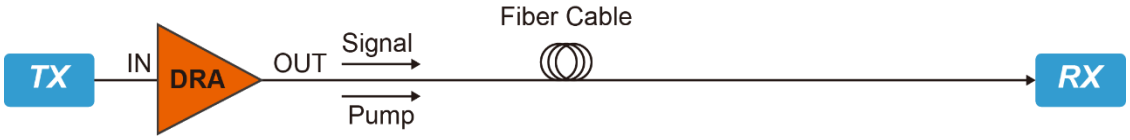


Functional structure

a. PRE-DRA



b. BOOST-DRA



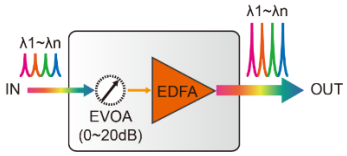
Product specifications

Model	PRE-DRA				
Parameter	Minimum	Normal Value	Maximum	Unit	Remark
Working wavelength	1528		1565	nm	
Input optical power	-36		-10	dBm	
Effective gain	12	14	15	dB	@G.652 optical fiber > 40km, attenuation coefficient 0.20dB/km
Gain flatness			2.2	dB	@Gain=14
Pump wavelength		1423~1465		nm	
Total pump output power	700			mw	@Each pump can be set to 500mw, 2 pumps in total
Noise figure			0	dB	
Input optical power threshold	-38			dBm	Configurable
Number of slots occupied	2 slots				

Model	BOOST-DRA				
Parameter	Minimum	Normal Value	Maximum	Unit	Remark
Working Wavelength	1528		1565	nm	
Input optical power	0		14	dBm	
Effective gain @Input optical power = 14dBm		10		dB	@G.652 optical fiber > 40km attenuation coefficient 0.20dB/km
Gain fatness			2.2	dB	@Gain=14
Pump wavelength		1423~1465		nm	
Total pump output power	700			mw	@Each pump can be set to 500mw Total 2 pumps
Noise figure			0	dB	
Input optical power threshold	0			dBm	Configurable
Number of slots occupied	2 slots				

EDFA: Optical Amplifier Card

The main function of EDFA (Erbium Doped Fiber Amplifier) Optical Amplifier Card launched by Guangzhou Sintai Communication Co., Ltd. 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 in C-band (100 GHz channel spacing) or 96 channels (50 GHz channel spacing) at the same time, and it has the features of flat gain, gain adjustable, small noise index and other characteristics, it is an indispensable part of DWDM system and future high-speed system and all-optical network.

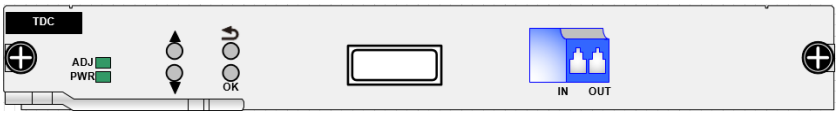


Product Specification

Parameter	Description			Remark
Operating wavelength range	Conventional: 1529nm~1561nm for 40-wave (100GHz) or 80-wave (50GHz) DWDM systems Extended: 1528nm~1568nm for 48-wave (100GHz) or 96-wave (50GHz) DWDM system			
Type of EDFA	20G17	20G25	20G30	Parameter can be customised
Minimum input optical power	-26dBm	-34dBm	-39dBm	
Saturated output optical power	+20dBm	+20dBm	+20dBm	
Rated gain	17dB (±3 adjustable)	25dB (±3 adjustable)	30dB (±3 adjustable)	
Gain flatness	≤1.5dB			
Coefficient of noise	≤5.5 dB			
Dual amplification	Support built-in dual pumping for secondary signal amplification			Optional configuration
Expertise	Support gain lock, gain adjustable, transient control technology, output optical power automatic shutdown			
VOA Features	Built-in VOA, network management adjustable attenuation dynamic range 0~20dB			Optional configuration
Network management	Support real-time monitoring of EDFA operating status, including: optical power, pumping, temperature, etc.			
Number of slots occupied	1 slot			
Optical interface	LC/UPC			
Maximum power consumption	15W			

TDC: Adjustable Dispersion Compensation Card

The TDC (tunable dispersion compensation) Adjustable Dispersion Compensation Card launched by Guangzhou Sintai Communication Co., Ltd. is mainly applied to dispersion compensation of high-speed transmission system, which can accurately manage the residual dispersion after the segmented fixed optical compensation, and provide a flexible and accurate adjustable dispersion compensation solution, which is independently and transparently to the optical transmission signal, the product is independent and transparent to the optical transmission signal, safe and reliable, so as to ensure the normal communication of the communication system, applicable to high speed rate, long distance wavelength division transmission system.



Product Features

- Adjustable: provides highly accurate, dynamically adjustable dispersion compensation over a wide range of dispersion values.
- Low Latency: has a latency of less than 25ns, making it ideal for time-sensitive networks.
- Multi-channel: has full C-band coverage for use on 100 GHz DWDM networks.
- Large dispersion compensation range, supporting ±1400ps/nm.
- The optical path is transparent and does not alter the optical signal.
- Simple structure and easy maintenance.

Product Specification

Parameter	Description
Operating wavelength range	C-band: 1528.38nm~1567.95nm
Channel spacing	100GHz
Dispersion compensation range	±1400ps/nm
Absolute dispersion accuracy	±25ps/nm (≤700ps/nm); ±45ps/nm (≤1400ps/nm)
Introduce loss	<5.5dB
Polarisation-related losses	<0.2dB
Polarisation mode dispersion	<1ps
Maximum input optical power	+27dBm
Module warm-up time	<180s
Dispersion setting resolution	10ps/nm
Dispersion response time	<20s
Keys and display functions	Support local key operation dispersion compensation range setting, with the display can intuitively show the current status
Network management	Support TDC dispersion compensation range remote setting and other functions
Number of slots occupied	1 slot
Optical interface	LC/UPC

DCM: Fixed Dispersion Compensation

The DCM Dispersion Compensation launched by Guangzhou Sintai Communication Co., Ltd. is a pure passive device, which is capable of wide-band dispersion slope compensation for standard single-mode optical fiber (G.652) in the C-band. It is used to repair optical signals deformed due to dispersion and compensate for damaged signals in the optical transmission system to enhance the performance of the optical transmission system, thus realizing high-speed, large-capacity, and long-distance communication. The DCMs have a dispersion range of -10 to -2100ps/nm at 1550nm wavelength, and can be supplied with special requirements for center wavelength and dispersion.

Plug-in

Rackmount

Product Features

- G.652 fiber C-band 100% slope compensation (standard value)
- Low insertion loss
- Low polarization mode dispersion
- Wide band dispersion compensation for DWDM systems
- Different compensation distances can be customized according to customer requirements
- Different packages and interface types can be customized according to customer requirements
- Complies with Telcordia GR-2854-CORE standards
- RoHS-6 compliant (lead-free)

Application Areas

- SDH High Speed Optical Transmission System
- DWDM Optical Transmission System
- G.652 standard single-mode fiber optic long-haul and metro communication systems

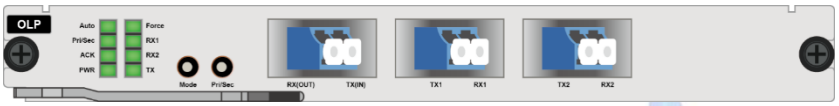
Product Specification

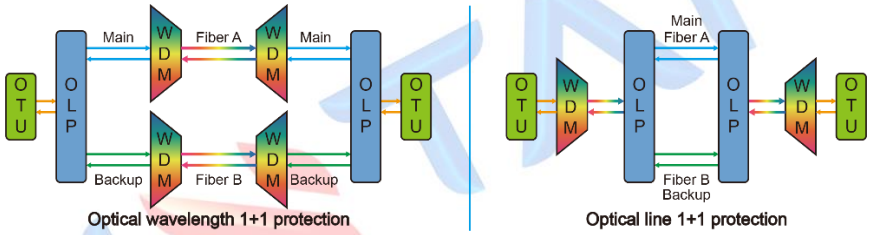
Parameter	Description					
Equivalent G.652 compensation lengths	20Km	40Km	60Km	80Km	100Km	120Km
1545nm Wavelength dispersion (ps/nm)	-340±20	-670±30	-1000±40	-1340±50	-1670±60	-2040±60
Relative dispersion slope at 1545 nm (nm)$^{-1}$	0.004±20%					
Insertion loss (dB)	≤3.5	≤5.0	≤6.8	≤8.7	≤10.7	≤12.9
Polarization mode dispersion (ps)	≤0.5	≤0.8	≤1.0	≤1.2	≤1.3	≤1.4
Polarization dependent loss (ps)	≤0.1	≤0.1	≤0.1	≤0.1	≤0.1	≤0.1
Light reflection (dB)	-27					
Maximum allowable input power (dBm)	+23					
Temperature range	-5°C~70°C					
Storage temperature range	-40°C~85°C					
Environmental/reliability testing	Compliant with Telcordia GR-2854 and GR1221 standards					
Optical interface type	LC/PC or customized					
Package type	Plug-in rack: 1U, (D)220mm×(W)442mm×(H)44mm					

Parameter	Description					
Equivalent G.652 compensation	15Km	25Km	30Km	70Km	85Km	100Km
1545nm Wavelength dispersion (ps/nm)	-255±7.5	-420±12	-500±15	-1170±35	-1425±42.5	-1670±60
Relative dispersion slope at 1545 nm (nm)$^{-1}$	0.004±20%					
Insertion loss (dB)	≤2.9	≤3.5	≤3.85	≤6.9	≤8.5	≤10.7
Polarization mode dispersion (ps)	≤0.3	≤0.3	≤0.4	≤0.6	≤0.7	≤1.3
Polarization dependent loss (ps)	≤0.1	≤0.1	≤0.1	≤0.1	≤0.1	≤0.1
Light reflection (dB)	-27					
Maximum allowable input power (dBm)	+23					
Temperature range	-5°C~70°C					
Storage temperature range	-40°C~85°C					
Environmental/reliability testing	Compliant with Telcordia GR-2854 and GR1221 standards					
Optical interface type	LC/PC or customized					
Package type	Plug-in rack: 1U, (D)220mm×(W)442mm×(H)44mm					

OLP: Optical Protection Card

The main function of OLP Optical Protection Card launched by Guangzhou Sintai Communication Co., Ltd. is to assist wavelength division system to complete the optical line 1+1 protection, optical wavelength 1+1 protection and other optical layer protection solutions, which can real-time monitoring of the main and standby routing optical signal status, once the optical signal interruption or performance degradation occurs, it can be automatically in the main and standby routing for the security of inverted, to ensure that the system optical signal is quickly restored; OLP technology is to complete the route switching operation in the optical layer, the optical layer protection has the incomparable advantages of the upper layer of service protection, and it is the best solution to provide users with non-blocking communication.





Product Specification

Parameter		Description
Operating wavelength range		1260nm~1650nm
Switching mechanism		Dual-transmit selective reception, single-end switching
Physical switching time		<20ms
Introduce loss	**transmitter**	<3.8dB
	receiving end	<1.2dB
Monitoring optical power range		-30 dBm ~+20dBm
Application scenario		● 1+1 Protection for optical lines ● Optical wavelength 1+1 protection
Network management		Support real-time monitoring of OLP optical power, active switching scheduling, performance management, routing management, etc.
Number of slots occupied		1 slot
Optical interface		LC/UPC
Maximum power consumption		5W

X*CA: CWDM Mux/Demux

The CWDM Multiplexer/Demultiplexer from Guangzhou Sintai Communication Co., Ltd. is designed for cost-effective multi-wavelength CWDM network applications. It is based on thin-film filter (TFF) technology and operates on the ITU grid with 20nm channel spacing, with CWDM wavelengths ranging from 1270nm to 1610nm, and supports up to 18 channels for multiplexing/demultiplexing of optical signals. It has a series of advantages, such as multiple package structures, low insertion loss, and high channel isolation.

Product Features

- Low insertion loss (IL)
- High channel isolation
- High stability and reliability
- Offers 1 to 18 channels in a compact design
- Conforms to ITU-T G.694.2
- Conforms to Telcordia GR-1209-CORE-2001 standards
- Conforms to Telcordia GR-1221-CORE-1999 standards
- RoHS-6 compliant (lead-free)

Steel Tube Type

ABS Box

LGX Box

Rackmount

Application Areas

- CWDM system
- CATV system

Product Specification

Parameter	CWDM MUX/DEMUX					
Number of optical channels	1	2	4	8	16	18
Operating wavelength range (nm)	1260~1620					
Channel center wavelength(nm)	ITU-T Grid					
Channel spacing (nm)	20					
Channel insertion loss (dB)	≤0.8	≤1.2	≤1.8	≤2.6	≤4.5	≤5.0
Channel bandwidth (nm)	ITU ± 6.5					
Flatness (dB)	≤0.5					
Adjacent channel isolation (dB)	≥30					
Non-adjacent channel isolation (dB)	≥40					
Return loss (dB)	≥45					
Directionality (dB)	≥45					
Polarization-related loss (dB)	≤0.2					
Polarization mode dispersion (ps)	≤0.2					
Withstanding optical power(dB)	≤500					
Operating temperature (°C)	0~+70					
Storage temperature (°C)	-40 ~+85					
Package type	Steel tube type, ABS box type, LGX standard box type, 1U standard 19-inch rack type available					

RX*CA: CWDM OADM

The CWDM OADM(optical add-drop multiplexer) from Guangzhou Sintai Communication Co., Ltd. is designed for cost-effective multi-wavelength CWDM network applications. It is based on thin-film filter (TFF) technology and operates on ITU grids with 20nm channel spacing, CWDM wavelengths ranging from 1270nm to 1610nm, and ITU channel wavelengths are optional; it has a wide range of advantages such as multiple packages, low insertion loss, high channel isolation, etc., it is widely used in CWDM systems for wavelength uplink and downlink multiplexing.

Product Features

- Low insertion loss (IL)
- High channel isolation
- High stability and reliability
- Wide operating wavelength range
- Conforms to ITU-T G.694.2
- Conforms to Telcordia GR-1209-CORE-2001 standards
- Conforms to Telcordia GR-1221-CORE-1999 standards
- RoHS-6 compliant (lead-free)

ABS Box

LGX Box

rackmount

Application Areas

- CWDM system uplink/downlink multiplexing

Product Specification

Parameter	CWDM OADM				
Number of optical channels	1	2	4	8	16
Operating wavelength range (nm)	1260~1620				
Channel center wavelength(nm)	ITU-T Grid				
Channel spacing (nm)	20				
Channel insertion loss (dB)	≤0.8	≤1.2	≤1.8	≤2.6	≤4.5
Input/Output channel insertion loss (dB)	≤0.8	≤1.2	≤2.0	≤3.2	≤5.3
Channel bandwidth (nm)	ITU ± 6.5				
Flatness (dB)	≤0.5				
Adjacent channel isolation (dB)	≥30				
Non-adjacent channel isolation (dB)	≥40				
Return loss (dB)	≥45				
Directionality (dB)	≥45				
Polarization-related loss (dB)	≤0.2				
Polarization mode dispersion (ps)	≤0.2				
Withstanding optical power(dB)	≤500				
Operating temperature (°C)	0~+70				
Storage temperature (°C)	-40 ~+85				
Package type	ABS box, LGX standard box, 1U standard 19" rackmount available				

X*DA: DWDM Mux/Demux

The DWDM Multiplexer/Demultiplexer from Guangzhou Sintai Communication Co., Ltd. is designed for multi-wavelength DWDM network applications. It is based on thin-film filter (TFF) technology and operates on ITU grids with 100GHz channel spacing, DWDM wavelengths ranging from 1525nm to 1565nm, with ITU channel wavelengths optional; it has a wide range of advantages such as multiple package structures, low insertion loss, high channel isolation and so on.

Product Features

- Low insertion loss (IL)
- High channel isolation
- High stability and reliability
- Wide operating wavelength range
- Provides 1 to 32 channels in a compact design
- Conforms to ITU-T G.694.1
- Conforms to Telcordia GR-1209-CORE-2001 standards
- Conforms to Telcordia GR-1221-CORE-1999 standards
- RoHS-6 compliant (lead-free)

Steel Tube Type

ABS Box

LGX Box

Rackmount

Application Areas

- DWDM system

Product Specification

Parameter	DWDM MUX/DEMUX				
Number of optical channels	1	2	4	8	16
Operating wavelength range (nm)	1525~1565				
Channel center wavelength(nm)	ITU-T Grid				
Channel spacing (nm)	0.8nm (100GHz)				
Channel insertion loss (dB)	≤0.8	≤1.2	≤1.8	≤2.6	≤4.5
Channel bandwidth (nm)	ITU ± 0.11				
Flatness (dB)	≤0.5				
Adjacent channel isolation (dB)	≥30				
Non-adjacent channel isolation (dB)	≥40				
Return loss (dB)	≥45				
Directionality (dB)	≥45				
Polarization-related loss (dB)	≤0.2				
Polarization mode dispersion (ps)	≤0.2				
Withstanding optical power(dB)	≤500				
Operating temperature (°C)	0~+70				
Storage temperature (°C)	-40 ~+85				
Package type	Steel tube type, ABS box type, LGX standard box type, 1U standard 19" rack type available				

RX*DA: DWDM OADM

The DWDM OADM (optical add-drop multiplexer) launched by Guangzhou Sintai Communication Co., Ltd. is designed for multi-wavelength DWDM network applications, which is based on thin-film filter (TFF) technology, working in the 100GHz channel spacing of the ITU grid, the DWDM wavelength range of 1525nm to 1565nm, the ITU channel wavelength can be selected; a wide range of packaging structure, low insertion loss, high channel isolation and a series of advantages, it is widely used in DWDM systems for wavelength uplink and downlink multiplexing.

Product Features

- Low insertion loss (IL)
- High channel isolation
- High stability and reliability
- Wide operating wavelength range
- Conforms to ITU-T G.694.1
- Conforms to Telcordia GR-1209-CORE-2001 standards
- Conforms to Telcordia GR-1221-CORE-1999 standards
- RoHS-6 compliant (lead-free)

ABS Box

LGX Box

Rackmount

Application Areas

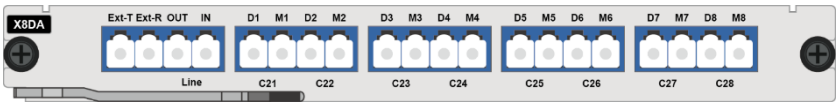
- DWDM system uplink/downlink multiplexing

Product Specification

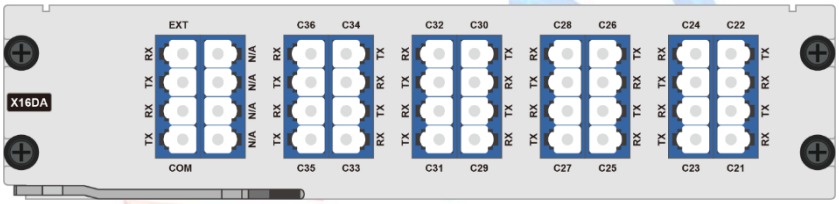
Parameter	DWDM OADM				
Number of optical channels	1	2	4	8	16
Operating wavelength range (nm)	1525~1565				
Channel center wavelength(nm)	ITU-T Grid				
Channel spacing (nm)	0.8nm (100GHz)				
Channel insertion loss (dB)	≤0.8	≤1.2	≤1.8	≤2.6	≤4.5
Input/Output channel insertion loss (dB)	≤0.8	≤1.2	≤2.0	≤3.2	≤5.3
Channel bandwidth (nm)	ITU ± 0.11				
Flatness (dB)	≤0.5				
Adjacent channel isolation (dB)	≥30				
Non-adjacent channel isolation (dB)	≥40				
Return loss (dB)	≥45				
Directionality (dB)	≥45				
Polarization-related loss (dB)	≤0.2				
Polarization mode dispersion (ps)	≤0.2				
Withstanding optical power(dB)	≤500				
Operating temperature (°C)	0~+70				
Storage temperature (°C)	-40 ~+85				
Package type	ABS box, LGX standard box, 1U standard 19" rackmount available				

MDU: 1~18CH MuxDemux Card

The MDU WDM card is mainly used in CWDM or DWDM WDM system to complete the multiplexing and demultiplexing function of 1~18 optical wavelengths. It can multiplex light of different wavelengths onto one optical fibre or separate multiple optical channels multiplexed on the same optical fibre by wavelength, adopts advanced optical thin film filtering technology, which has a series of advantages such as low insertion loss, excellent channel consistency, high reliability, etc, the number of channels can be customised according to customer requirements.



8-channel Mux/Demux



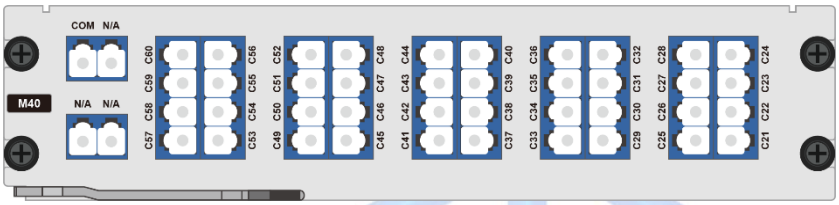
16-channel Mux/Demux

Product Specification

Parameter	Description				
Number of optical channels	2	4	8	16	18
Channel insertion loss	≤1.2dB	≤1.8dB	≤2.6dB	≤4.5dB	≤5.0dB
Number of slots occupied	1 slot			2 slots	
Operating wavelength range	● CWDM: 1271nm~1611nm ● DWDM: C Band (100 GHz)				
Channel centre wavelength	ITU-T Grid				
Number of fibres on line side	Support line-side single-fibre or dual-fibre application scenarios				
Flatness	≤0.5dB				
Adjacent channel isolation	≥30dB				
Non-adjacent channel isolation	≥40dB				
Return loss	≥45dB				
Directionality (molecular biology)	≥45dB				
Optical interface	LC/UPC				
Power monitoring	Supports combined signal power monitoring (optional)				
Maximum power consumption	3W				

MDU: 40CH MuxDemux Card

The AWG MuxDemux Card launched by Guangzhou Sintai Communication Co., Ltd. is mainly used in DWDM system to complete the function of multiplexing or demultiplexing of 40 optical wavelengths in C-band range, which can multiplex different wavelengths of light into a single optical fibre or separate multiple optical channels multiplexed in the same optical fibre according to the wavelengths. It is based on waveguide grating technology on silicon substrate and adopts unique heatless package design, which can achieve accurate channel coupling, low insertion loss, high channel isolation and high stability, and is suitable for 40-wave or 80-wave high-capacity DWDM system.



Product Specification

Parameter	Description
Number of optical channels	40 Channels, supports C-band even wave (C_EVEN), odd wave (C_ODD)
Channel spacing	0.8nm (100GHz)
ITU passband	±12.5 GHz
Centre frequency deviation	±2.5 GHz
Channel insertion loss	≤5.5dB
-1dB Bandwidth	≥0.4nm
-3dB Bandwidth	≥0.6nm
Adjacent channel isolation	≥15dB
Non-adjacent channel isolation	≥30dB
Insertion loss uniformity	≤1.5dB
Return loss	≥40dB
Number of slots occupied	2 slots
Optical interface	LC/UPC
Extended parameter	Support 40 channels of C-band even (C_EVEN) and 40 channels of odd (C_ODD) waveforms expanded to 80 channels using comb filters (Interleaver)
Power monitoring	Support combined signal power monitoring (optional)
Maximum power consumption	3W

MDU: 40/48/80/96CH MuxDemux Rack

AAWG Heatless Array Waveguide Gratings from Guangzhou Sintai Communication Co., Ltd. are based on waveguide grating technology on silicon substrate with a unique heatless package design that does not require power, software or temperature control to achieve accurate channel coupling with a series of advantages such as low insertion loss, high channel isolation and high stability, Gaussian and flat-top types are available.

Product Features

- Low insertion loss (IL)
- High isolation
- High stability and reliability
- 40/48/80/96 Channels available
- Conforms to ITU-T G.694.1
- Conforms to Telcordia GR-1209-CORE-2001 standards
- Conforms to Telcordia GR-1221-CORE-1999 standards
- RoHS-6 compliant (lead-free)

ABS Box

Rackmount

Application Areas

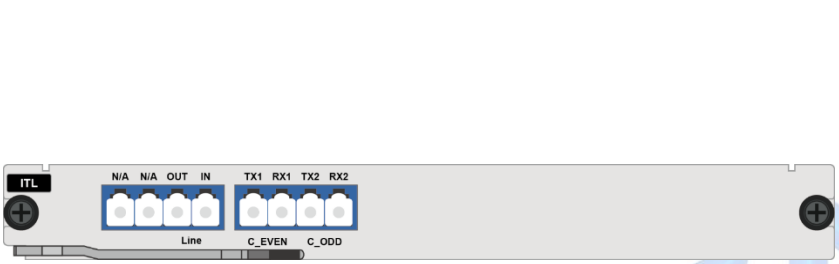
- DWDM system

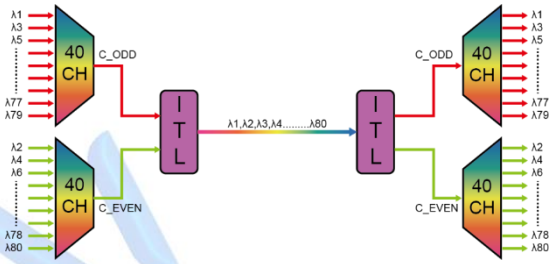
Product Specification

Parameter	AAWG DWDM MUX/DEMUX		
Channel spacing	50GHz	100GHz	
Passband type	Flat top	Flat top	Gaussian
Number of optical channels	80/96	40/48	
Wavelength accuracy (nm)	±0.04		
-1dB Bandwidth (nm)	≥0.18	≥0.4	≥0.2
-3dB Bandwidth (nm)	≥0.28	≥0.6	≥0.4
Channel insertion loss (dB)	≤6.5	≤5.5	≤4.5
Adjacent channel isolation (dB)	≥25	≥15	
Non-adjacent channel isolation (dB)	≥25	≥30	
Insertion loss uniformity (dB)	≤1.5		
Return loss (dB)	≥40		
Polarization-related loss (dB)	≤0.5		
Polarization mode dispersion (ps)	≤1.0	≤0.5	
Operating temperature (°C)	-5~+65		
Storage temperature (°C)	-40 ~+85		
Package type	ABS box type, 1U standard 19" rack type available		

ITL: Comb Filter (Interleaver)

The ITL (Interleaver) Comb Filter introduced by Guangzhou Sintai Communication Co., Ltd. is a new type of multiplexing/demultiplexing device, which adopts a cross-filtering scheme to enable the synthesis of two 40/48-wave (100GHz) optical signals into one 80/96-wave (50GHz) optical signal, and at the same time, realises the inverse process of the above mentioned process. The comb filter is completely passive, requires no temperature control, has excellent environmental stability, and meets Telcordia GR-1221-CORE requirements.





Product Specification

Parameter	Description
Operating wavelength range	C-band: 1528nm~1568nm
Channel spacing	Mux: Input 100GHz/Output 50GHz, Demux: Input 50GHz/Output 100GHz
Channel centre wavelength	ITU-T Grid
Insertion loss	≤2.0dB
Bandwidth@0.5dB	≥14GHz
Bandwidth @ 20dB	≤38GHz
Adjacent channel isolation	≥22dB
Flatness	≤0.5dB
Return loss	≥40dB
Dispersion	±75ps/nm
Polarisation mode dispersion	≤0.5ps
Number of slots occupied	1 slot
Optical interface	LC/UPC

R/B: C-band Red/Blue Band Filters

The 1x2 Dense Wavelength Division Multiplexing (DWDM) Red/Blue Band Filter from Guangzhou Sintai Communication Co., Ltd. is a passive micro-optical device created based on environmentally stable thin film filtering technology. It is mainly used for separating or combining C-band red wavelength signals and blue wavelength signals in dense wavelength division multiplexing (DWDM) systems and high power amplification systems. It is characterized by a wide passband, low insertion loss, high return loss, excellent environmental stability, and high power handling capability.

Product Features

- Low insertion loss and polarization mode dispersion (PMD)
- Wide operating wavelength range
- High channel isolation
- Low temperature loss
- Epoxy-free optical path
- Telcordia compliant

Application Areas

- Red and blue band isolator
- Dense wavelength division multiplexing system (DWDM)
- Optical amplifier

Product Specification

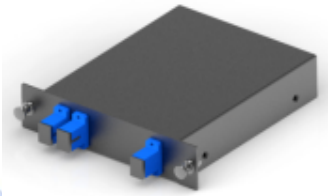
Parameter		DWDM Red and Blue Band Filters
Operating wavelength range (nm)		1520.0 ~ 1562.3
Passband	**Wavelength (nm)**	1529.35 (λ1) ~ 1541.55 (1548.31 ~ 1560.81 (λ2))
	Insertion loss (dB)	≤1.0
	Isolation (dB)	≥25
Reflecting zone	**Wavelength (nm)**	1548.31 (λ2) ~ 1560.81 (1529.35~1541.55 (λ1))
	Insertion loss (dB)	≤1.0
	Isolation (dB)	≥15
Return loss (dB)		≥50
Directionality (dB)		≥50
Polarization-related loss (dB)		≤0.1
Polarization mode dispersion (ps)		≤0.1
Thermal stability (dB/°C)		≤0.005
Withstanding optical power(dB)		≤500
Operating temperature (°C)		0~+70
Storage temperature (°C)		-40 ~+85
Package type		Steel tube type, ABS box type, LGX standard box type, OTNS8600 plug-in type available

WDM1r Multiplexer

WDM1r multiplexer launched by Guangzhou Sintai Communication Co., Ltd. is mainly used for XG-PON network smooth evolution, it can multiplex GPON and XG-PON two different service wavelengths in the same ODN network at the same time for transmission, to realize the coexistence of GPON and XG-PON in the original PON network coverage, to provide high-speed access to some high-bandwidth customers; with a variety of advantages such as It has a series of advantages such as multiple encapsulation structures, low insertion loss, high channel isolation, etc. It is widely used in PON network upgrading and broadband multiplexing.

Product Features

- GPON and XG-PON multiplexing on 1-core fiber
- Low insertion loss
- High channel isolation
- High stability and reliability



Application Areas

- XG-PON network upgrade
- Wavelength division multiplexing network

Product Specification

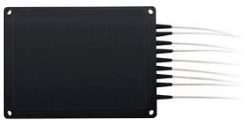
Parameter	Description
GPON operating wavelength range (nm)	1290~1330 & 1480~1500
XG-PON operating wavelength range (nm)	1260~1280 & 1575~1580
GPON channel isolation (dB)	>30
XG-PON channel isolation (dB)	>30
GPON channel insertion loss (dB)	<0.8
XG-PON channel insertion loss (dB)	<1.2
Insertion loss thermal stability (dB/ºC)	≤0.007
Wavelength thermal stability (nm/ ºC)	≤0.002
Polarization-related loss (dB)	≤0.2
Polarization mode dispersion (ps)	≤0.1
Directionality (dB)	≥50
Return loss (dB)	≥50
Maximum input power (mW)	≤500
Operating temperature (°C)	-40 ~ 85
Storage temperature (°C)	-40 ~85
Operating humidity non-condensing (RH)	≤85%
Storage temperature (°C)	-40 ~+85
Package type	ABS box type, LGX standard box type
Optical interface	SC/UPC

FBT Optical Splitter

Guangzhou Sintai Communication Co., Ltd. launched the FBT Optical Splitter products using unique materials and manufacturing process, can be achieved in the optical fibre transmission of optical signals in the special structure of the coupling zone coupling, optical power redistribution. It supports flexible configuration according to different splitting ratios, operating wavelength ranges, connector types and packaging forms, which is convenient for various product designs and project plans, and is widely used in cable TV transmission and other optical communication systems to duplicate optical signals.

Product Features

- Low insertion loss and polarisation dependent loss
- High stability and reliability
- Wide range of operating wavelengths
- Wide operating temperature range
- Conforms to Telcordia GR-1209-CORE-2001 standard
- Conforms to Telcordia GR-1221-CORE-1999 standard
- RoHS-6 compliant (lead-free)



ABS Box

Plug-in

Rackmount

Application Areas

- Cable network
- Optical network monitoring

Product Specification

Parameter		Single Mode FBT Splitters	Multimode FBT Splitters
Operating wavelength range (nm)		1260~1620	850
Various spectral ratios Insertion Loss (dB)	50:50	50% ≤ 3.50	50%≤4.10
	60:40	60%≤2.70 ; 40%≤4.70	60%≤3.20 ; 40%≤5.20
	70:30	70%≤1.90 ; 30%≤6.00	70%≤2.50 ; 30%≤6.50
	80:20	80%≤1.20 ; 20%≤7.90	80%≤1.80 ; 20%≤9.00
	90:10	90%≤0.80; 10%≤11.60	90%≤1.40 ; 10%≤12.00
	70:15:15	70%≤1.90 ; 15%≤9.50	70%≤2.50 ; 15%≤10.50
	80:10:10	80%≤1.20 ; 10%≤11.60	80%≤1.80 ; 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
Polarisation dependent loss (dB)		≤0.15	
Return loss (dB)		≥55	
Directionality (dB)		≥55	
Operating temperature (°C)		-40 ~ +85	
Storage temperature (°C)		-40 ~ +85	
Fibre optic interface type		LC/PC or customised	
Package type		ABS Box: (D)120mm x (W)80mm x (H)18mm Plug-in rack: 1U, (D)220mm×(W)442mm×(H)44mm Rackmount: 1U, (D)220mm×(W)442mm×(H)44mm	

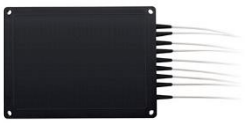
Note: The above specifications do not include fibre optic connector loss, and the test temperature is indoor room temperature.

PLC Optical Splitter

Based on planar optical waveguide technology, the PLC Optical Splitter products from Guangzhou Sintai Communication Co., Ltd. can achieve 1xN or 2xN splitting ratio optical signal power distribution with a series of advantages such as multiple package structures, low insertion loss, high return loss, and excellent flatness and uniformity in the wavelength range of 1260nm to 1650nm, as well as operating temperatures from -40°C to +85°C, and integration levels can be customised according to requirements.

Product Features

- Low insertion loss and polarisation dependent loss
- High stability and reliability
- high channel count
- Wide range of operating wavelengths
- Wide operating temperature range
- Conforms to Telcordia GR-1209-CORE-2001 standard
- Conforms to Telcordia GR-1221-CORE-1999 standard
- RoHS-6 compliant (lead-free)



ABS Box

Plug-in

Rackmount

Application Areas

- PON network
- cable network
- Optical network monitoring

Product Specification

Parameter	1:N PLC Splitters						2:N PLC Splitters					
Port configuration	1x2	1x4	1x8	1x16	1x32	1x64	2x2	2x4	2x8	2x16	2x32	2x64
Maximum insertion loss (dB)	4.0	7.2	10.4	13.6	16.8	20.5	4.5	7.6	11.1	14.3	17.6	21.3
Uniformity (dB)	<0.6	<0.7	<0.8	<1.2	<1.5	<2.5	<1.0	<1.2	<1.5	<1.8	<2.0	<2.5
Polarisation dependent loss (dB)	<0.2	<0.2	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.4	<0.4	<0.4	<0.4
Wavelength dependent loss (dB)	<0.3	<0.3	<0.3	<0.5	<0.8	<0.8	<0.4	<0.4	<0.6	<0.6	<0.8	<1.0
Temperature dependent loss (dB)	<0.5											
Return loss (dB)	>55											
Directionality (dB)	>55											
Operating	1260-1650											

wavelength range (nm)	
Operating temperature (°C)	-40~+85
Storage temperature (°C)	-40 ~+85
Fibre optic interface type	LC/PC or customised
Package type	ABS Box: (D)120mm x (W)80mm x (H)18mm Plug-in rack: 1U, (D)220mm×(W)442mm×(H)44mm Rackmount: 1U, (D)220mm×(W)442mm×(H)44mm

Note: The above specifications don't include fibre optic connector loss, and the test temperature is indoor room temperature.

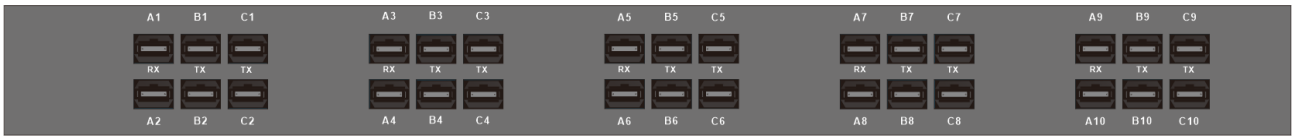
40G & 100G Multimode MPO Interface Optical Splitter

The 40G&100G Multimode MPO Interface Optical Splitter launched by Guangzhou Sintai Communication Co., Ltd. is mainly used in optical communication network for multimode MPO interface optical link signal replication, this product is a passive product, adopting the standard 19-inch rack-mounted package, providing 30 multimode MPO/UPC interfaces, including 10 input interfaces (MPO 4-core receive), 20 output interfaces (MPO 4-core transmit), supporting maximum access to 10 40G/100G multimode MPO interface optical link 1 split 2 equal split output. It provides 30 multimode MPO/UPC interfaces, including 10 input interfaces (MPO 4-cell receive) and 20 output interfaces (MPO 4-cell transmit), and supports access to a maximum of 10 40G/100G multimode MPO interfaces for 1-2 equalisation of optical link output.

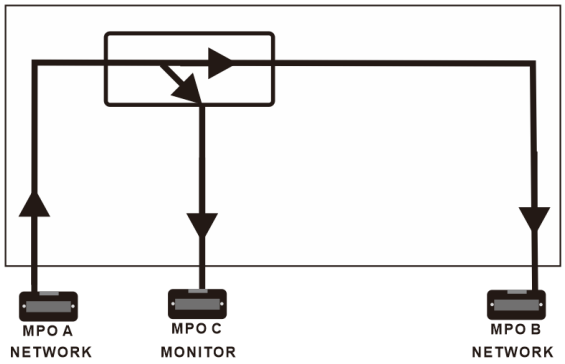
Product Features

- Low insertion loss without affecting data traffic packets
- No power supply, no IP address, no MAC address, 100% passive products, safe and reliable performance
- Installation and operation are simple and can be done independently by non-professionals
- 30 MPO ports, supports 10 40G/10GG 1 in 2, low cost, high integration

Panel View



Application Block Diagram

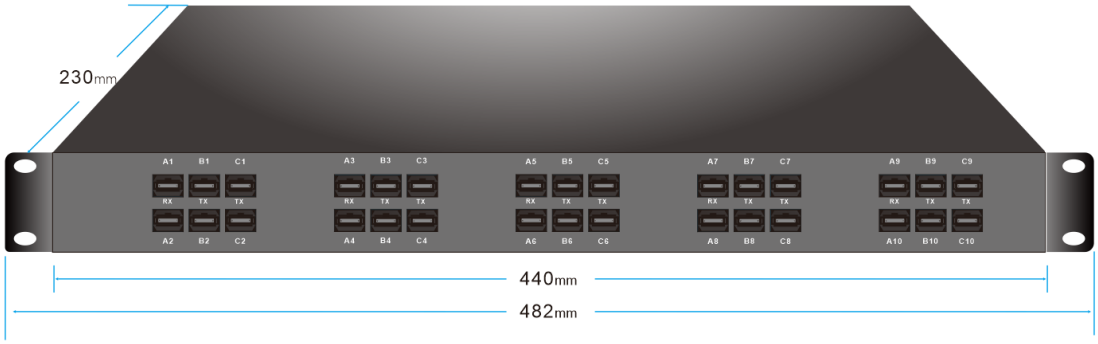


Product Specification

Model Number	OPC1800-M1210-MPO4
Supported link rates	40G/100G
Operating wavelength (nm)	850nm
Spectral ratio	50/50
Port configuration	30 MPO ports (supports 10-way 1 in 2)
Main link insertion loss (dB)	≤5.0
Replication link insertion loss (dB)	≤5.0
Uniformity (dB)	≤0.8

Return loss (dB)	≥55
Polarisation dependent loss (dB)	≤0.15
Directionality (dB)	≥55
Fibre type	Multimode OM3
Terminal (electrical engineering)	MPO/UPC
Device size (mm)	1U Rack 440*230*44
Operating temperature (°C)	-40 ~ +85

Product Size



WDM SYSTEM

OTNS8600-OLS Device

Your optical transmission expert
Original Manufacturer

OTNS8600-OLS Open Line System

The OTNS8600-OLS is an open line DWDM platform designed for data center interconnection. It provides everything needed for DWDM optical layer solutions, integrating multiplexers/demultiplexers, optical amplifiers, dispersion compensation, optical protection, and optical monitoring channels in a 1RU device, equipped with integrated monitoring and diagnostic functions, and a high level of automation, providing unparalleled plug-and-play simplicity and ensuring flexible and scalable transmission with optimal transmission performance. The OTNS8600- OLS supports a maximum of 48 channels, is open and transparent to all signal formats, and is suitable for long-distance, large-bandwidth application scenarios.

Features

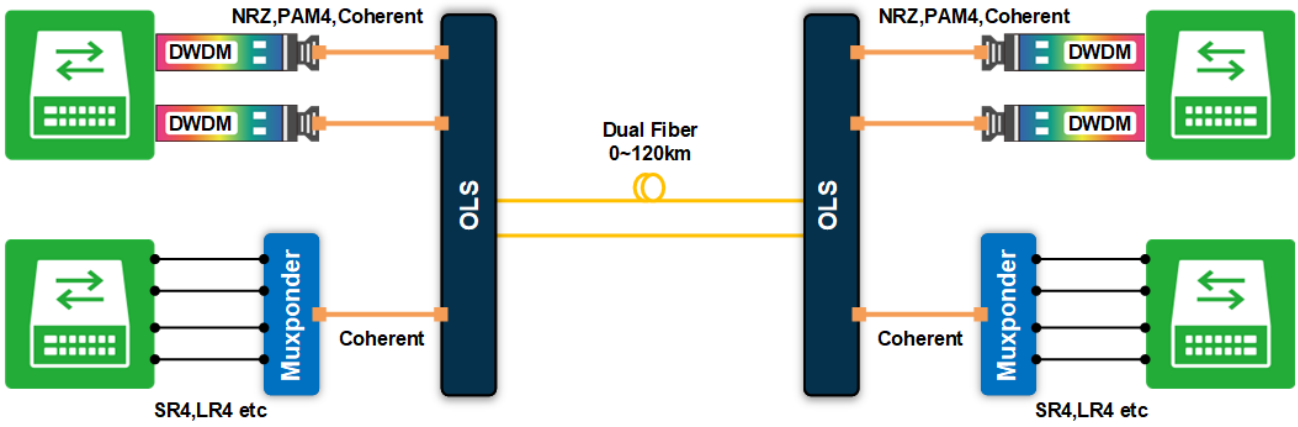
- Adopts a simple 1RU 19-inch box-type design.
- Provides 48 DWDM open channels in C band.
- Access any DWDM signal format: NRZ (1-32G), PAM4 (40G/100G), Coherent (QPSK/8QAM/16QAM).
- 100G PAM4 signal format can transmit up to 80km, and other signal formats can transmit longer distances.
- Automatic and zero-touch configuration, similar to a passive multiplexer.
- Automatic fiber distance measurement and dispersion compensation.
- Comprehensive working status indicator lights on the client and line sides.
- In-band optical supervisory channel (OSC), the peer device can be managed as long as the optical fiber is connected.
- Web GUI, B /S and other management methods, provides an open SNMP interface.
- Front panel LCD screen for visual operation and maintenance.
- Dual power supply configuration, using Load Share mode 1+1 hot backup, AC, DC and high-voltage DC power supply optional.

Product specifications

Function		OLS104808	OLS404808	OLS404812
Access DWDM signal format	NRZ(1~32G)	√	x	x
	PAM4 (40G/100G)	√	x	x
	Coherent 100G_ QPSK	√	√	√
	Coherent 200G_ 16QAM	√	√	√
	Coherent 200G_ 8QAM	x	√	√
	Coherent 200G_ QPSK	x	√	√
	Coherent 300G_ 8QAM	x	√	√
	Coherent 400G_16QAM	x	√	√
C-band DWDM 48 channels (191.40 ~196.10THz @100GHz spacing)		√	√	√
Client-DWDM channel automatic power equalization (APE)		√	√	√
Client-DWDM channel input/output optical power monitoring and indicator		√	√	√
Line side-main channel automatic power control (ALC)		√	√	√
Line side-main channel optical power monitoring and indicator light		√	√	√
In-band Optical Supervisory Channel (OSC)		√	√	√
Automatic fiber distance measurement		√	√	√
Automatic dispersion compensation		√	x	x
Line side 1+1 protection		x	√	x
Transmission distance		80km	80km	120km
Link budget		22dB	18dB(CFEC) 20dB(OFEC)	23.5dB(CFEC) 25.5dB(OFEC)
Optical interface		All ports are LC connector type		
Management interface		● 2*10/100/1000M adaptive RJ45 network ports ● 1*USB Type - C Local debugging serial port		
Management		● Support Web GUI and B /S centralized management ● Provide open SNMP interface		
Power supply		Power supply 1+1 backup, hot-swappable		
		● AC: 100 ~ 130 V AC (50/60 Hz) 200 ~ 240 V AC (50/60 Hz) Maximum voltage range: 90 ~ 264V AC (47 ~ 63 Hz) ● High Voltage DC: 192 ~ 288 VHVDC ● DC: -40 ~ -72 VDC		
Power consumption		＜150W		
Fan		Fan 1+1 backup, hot-swappable, front-to-back airflow		
Device size		1U: 44 mm (height) × 440 mm (width) × 600 mm (depth)		
Operating temperature		-5 ℃ ～55 ℃ (typical)		
Humidity		5~85% no condensation		

Application Scenario

The OTNS8600-OLS solution is based on IP over DWDM (IPoDWDM) technology, which enables efficient transmission of IP traffic over fiber optic networks through pluggable fiber technology. The solution simplifies the network architecture, each IPoDWDM service requires only one colored optical module that plugs directly into the port of the network equipment, replacing multiple network elements required for traditional IP to DWDM conversion. This architecture reduces the number of network elements, lowers costs, simplifies the deployment process, and achieves sustainable growth in data demand while improving network performance. The OTNS8600-OLS can also carry third-party services such as Transponder and Muxponder.



WDM SYSTEM

OTNS8600-P DCI Integrated Device

Your optical transmission expert
Original Manufacturer

DCI Integrated Device: OTNS8600P 400G

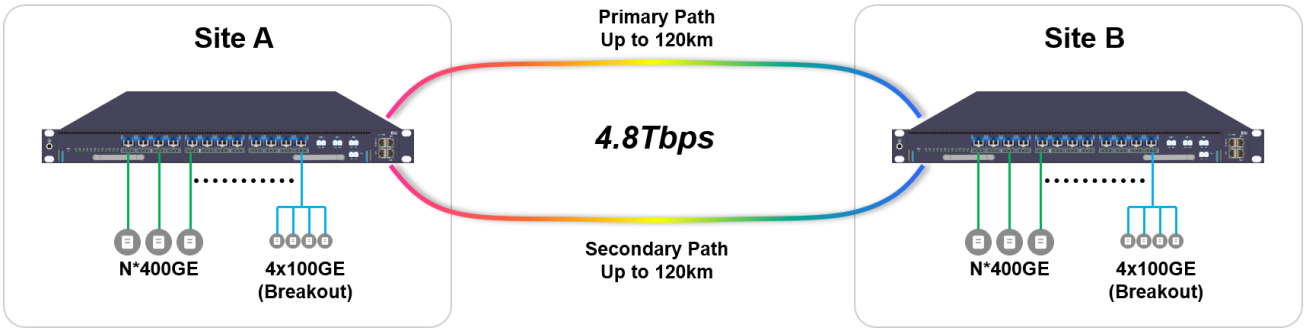
The OTNS8600P DCI integrated device developed by Sintai Communication for data center interconnection (DCI) scenarios has the outstanding characteristics of large capacity, small size, low energy consumption, and cost-effective performance. The device is only 1RU and supports a maximum transmission capacity of 4.8Tbps (12*400G). Through device cascading, it can be smoothly expanded to a transmission capacity of 19.2Tbps per fiber. The device adopts high-density optoelectronic integration technology to avoid complex fiber jump connections. It is a switch-like one-connection and easy to form an end-to-end complete wavelength division transmission solution, bringing ultra-large transmission capacity, perfect matching of the installation conditions of the data center room, and a very simple management mode, bringing the ultimate user experience to the DCI bearer network in the metropolitan area.

OTNS8600P 400G

Features

- Adopts 1U rack-mount modular design, all components are pluggable, including service card, system control unit(SCU), power supply card, fan card, optical module, etc. The failure of SCU card will not affect the business.
- One unit of the device provides 12*400G QSFP-DD client-side interfaces. Each 400G interface can support 4x100G through breakout mode.
- The capacity is customized on demand, with a minimum configuration of one 400G interface. Optical modules can be added to the redundant interfaces to achieve a maximum transmission capacity of 4.8T for a single device.
- It provides expansion interfaces and supports device stacking, which can effectively expand the transmission capacity to 19.2T per fiber.
- Supports 100GE and 400GE service access, service upgrades, and equipment replacement-free, protecting investment.
- Supports 0~120km transmission distance, and the link budget can reach 30dB**(without line protection).**
- Supports 1+1 line protection on the optical cable side **(optional)**, automatically selects transmission routes, and improves network reliability.
- Supports in-band optical supervisory channel (OSC), remote device management can be achieved as long as the optical path is connected.
- There is no complicated optical-electrical cross-connection, services are transmitted transparently, and service ports are completely physically isolated, which improves network security.
- Supports Web and B/S network management and provides open SNMP interface.
- Supports line-side optical power monitoring, WDM-side bit error rate and OSNR monitoring, and client-side Ethernet performance monitoring.
- Front-to-back air outlet design, 1+1 fan unit configuration, hot-swappable.
- AC/DC power supply, dual server power supply configuration, hot-swappable, and 1+1 hot backup using Load Share mode.

Application scenario



Product specifications

Function		Description
Device size	Dimensions (H x W x	1U: 44 mm × 442 mm × 490 mm
	Maximum capacity	4. 8Tbit/s (400G*12CH)
	Applicable cabinet	19- inch cabinet 800mm or more depth
Client-side port		12*400G QSFP-DD optical ports are pluggable
Supported service types		400GE, 100GE (supported via breakout mode)
Loopback		Support WDM side and client-side loopback
LLDP		Receive only (rxonly) mode
Performance monitoring		● Line-side optical power performance monitoring ● WDM side OSNR, FEC, CD and other performance monitoring ● Client-side Ethernet layer performance monitoring
Line side		2 Dual-fiber LC interfaces (Line side interface 2 is invalid when there is no optical line 1+1 protection)
Transmission distance		Adapt to 0~120km transmission distance
Extension interface		1 Dual-fiber LC interface, supporting device cascading expansion to dual-fiber transmission 19.2Tbps
Network-level protection		Support 1+1 protection for optical lines **(Optional configuration)**
Network management		● Support hot swap of main control card ● Support single-device Web network management ● Support centralized network management system based on B /S architecture ● Support DCN communication based on OSC ● Provide open SNMP interface
Power supply	Backup	Standard CRPS power supply 1 +1 backup
	AC	● Rated voltage range: 100V AC ~ 130V AC (50/60Hz) 200V AC ~ 240V AC (50/60Hz) ● Maximum voltage range: 90 V AC ~ 264 V AC (45Hz ~65Hz)
	High Voltage DC	● Rated voltage range: 2 - 40 V HVDC

		● Maximum voltage range: 192 V HVDC to 288 V HVDC
	DC	● Rated voltage range: -48 V DC / -60 V DC ● Maximum voltage range: -40 V DC to -72 V DC
Power consumption		< 550W (full configuration)
Heat dissipation		Front airflow and rear airflow, 1+ 1 fan card backup
Environment	**Operating**	Short term: -5 ℃～+ 45 ℃/ Long term: 0 ℃～ 40 ℃
	Storage temperature	-40 ℃～+ 70 ℃
	Humidity	5%～ 95 % (no condensation)

DCI Integrated Device: OTNS8600P 100G

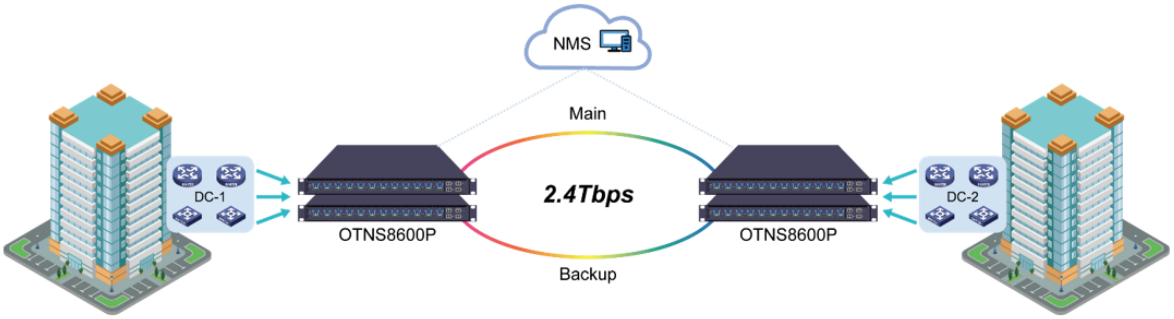
The OTNS8600P DCI integrated device developed by Sintai Communication for data center interconnection (DCI) scenarios has the outstanding features of high capacity, small size, low energy consumption, and high cost-effective. The device is only 1RU and supports a maximum transmission capacity of 1.2Tbps (12*100G), which can be smoothly expanded to a transmission capacity of 2.4Tbps for 1 fiber through equipment stacking. The equipment adopts high-density optoelectronic integration technology, avoiding complex patch-fiber connection, and switch-like connection, easily forming end-to-end complete wavelength division transmission scheme, which brings large transmission capacity, perfectly matches the installation conditions of the data center room, and simple management mode, and brings the ultimate user experience to the DCI bearer network in the city area.

OTNS8600P 100G

Product features

- Adopts 1U height box-type design and can be stacked, which can effectively save space and realize flexible migration.
- Max. transmission capacity of 1.2Tbps (12*100G) in 1U device, which can be effectively expanded to 1 fiber 2.4Tbps through equipment stacking.
- Supports mixed transmission of multiple services, including 40GE, 100GE and other service types, and the service interfaces and quantities can be flexibly customized by customers.
- Without complex optical and electrical crossover, transparent transmission of services, and complete physical isolation of service ports to enhance network security.
- Simple to network, keep change the original network topology, no complex optical layer design, only need to choose the equipment model according to the attenuation or fiber distance.
- Supports 1+1 line protection on the fiber cable, automatically selects transmission routes and improves network reliability.
- Supports in-band monitoring channel, and the optical path can be connected to realize SNMP management of the whole network.
- Delivered in a box by site, power up without matching, plug and play; free fiber skipping, without manual intervention.
- Forward and backward wind design, adapt to the server rack requirements of the data center room, can be deployed with the server rack.
- Dual AC/DC server power supply configuration, hot-swappable, 1+1 hot backup by Load Share method.

Application scenarios



Product specifications

Parameter	Description	Remark
Equipment size	1U: 44 mm (H)×442 mm (W)×600 mm (D)	
Maximum transmission capacity per unit	1RU 1.2Tbps（12*100G）	
Maximum transmission capacity per fiber	2*1RU device stacking scaling to 2.4Tbps	
Maximum transmission rate per port	100Gbit/s	
Service port type	40G/100G QSFP Optical Port	Customized to customer
Maximum number of ports per unit	12*QSFP optical ports	Customized to customer
Supported service types	40GE/100GE	Determined by service port
Network level protection	Supports line-side 1+1 protection	
Device level protection	● Power supply 1+1 hot backup ● 4 sets of fan hot backup	
Installation method	19" Server Cabinet	
Power supply method	● AC: 90 ~ 260V, DC: -36 ~ -72 V, High Voltage DC optional ● 2 hot-swappable server power supply modules	
Management	● Visual Web Interface ● OTNS8600 Network Management System	
Heat dissipation	Front airflow, rear airflow, 4 hot-swappable fan	
Power consumption	<400W（full match)）	
Operating temperature range	-5℃～50℃(typical)	
Operating humidity range	5~95% (no condensation)	
Storage temperature range	-40℃～85℃	
MTBF	＞100,000 hours	

DCI Integrated Device: OTNS8600P 10G

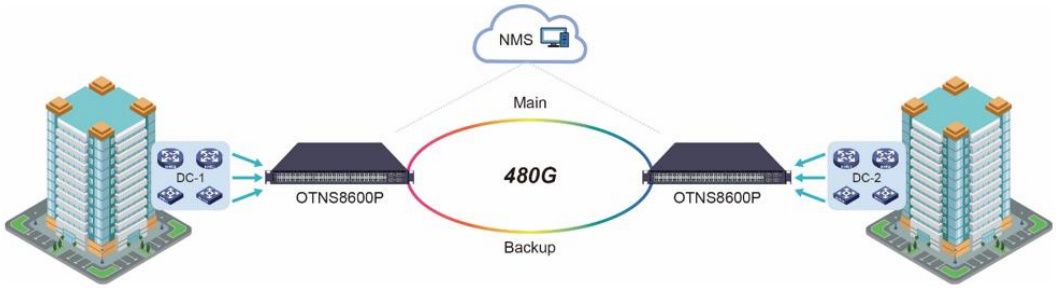
The OTNS8600P DCI integrated device developed by Sintai Communication for data center interconnection (DCI) scenarios has the outstanding features of high capacity, small size, low energy consumption, and high cost-effective. The device is only 1RU and supports a maximum transmission capacity of 480Gbps (48*10G), which can be smoothly expanded to a transmission capacity of 960Gbps for 1 fiber through equipment stacking. The equipment adopts high-density optoelectronic integration technology, avoiding complex patch-fiber connection, switch-like one connection, easily forming end-to-end complete WDM transmission scheme, bringing large transmission capacity, perfectly matching the installation conditions of the data center room, as well as simple management mode, bringing the ultimate user experience to the DCI bearer network in the city area.

OTNS8600P 10G

Product features

- Adopts 1U height box-type design and can be stacked, which can effectively save space and realize flexible migration.
- Max. transmission capacity of 480Gbps (48*10G) in 1U device, which can be effectively expanded to 1 fiber 960Gbps through equipment stacking.
- Supports mixed transmission of multiple services, including FE / GE / 10GE and other service types, and the service interfaces and quantities can be flexibly customized by customers.
- Without complex optical and electrical crossover, transparent transmission of services, and complete physical isolation of service ports to enhance network security.
- Simple to network, keep change the original network topology, no complex optical layer design, only need to choose the equipment model according to the attenuation or fiber distance.
- Supports 1+1 line protection on the fiber cable, automatically selects transmission routes and improves network reliability.
- Supports in-band monitoring channel, and the optical path can be connected to realize SNMP management of the whole network.
- Delivered in a box by site, power up without matching, plug and play; free fiber skipping, without manual intervention.
- Forward and backward wind design, adapt to the server rack requirements of the data center room, can be deployed with the server rack.
- Dual AC/DC server power supply configuration, hot-swappable, 1+1 hot backup by Load Share method.

Application scenarios



Product specifications

Parameter	Description	Remark
Equipment size	1U: 44 mm (H)×442 mm (W)×600 mm (D)	
Maximum transmission capacity per unit	1RU 480Gbps（48*10G）	
Maximum transmission capacity per fiber	2*1RU device stacking scaling to 960bps	
Maximum transmission rate per port	10Gbit/s	
Service port type	100M~10G SFP optical ports	Customized to customer
Maximum number of ports per unit	48*SFP optical ports	Customized to customer
Supported service types	FE/GE/10GE	Determined by service port
Network level protection	Supports line-side 1+1 protection	
Device level protection	● Power supply 1+1 hot backup ● 4 sets of fan hot backup	
Installation method	19" Server Cabinet	
Power supply method	● AC: 90 ~ 260V, DC: -36 ~ -72 V, High Voltage DC optional ● 2 hot-swappable server power supply modules	
Management	● Visual Web Interface ● OTNS8600 Network Management System	
Heat dissipation	Front airflow, rear airflow, 4 hot-swappable fan units	
Power consumption	<400W（full match)）	
Operating temperature range	-5℃～50℃(typical)	
Operating humidity range	5~95% (no condensation)	
Storage temperature range	-40℃～85℃	
MTBF	＞100,000 hours	

WDM SYSTEM

Optical Subsystem

Your optical transmission expert
Original Manufacturer

SOA: Optical Amplification Subsystem

The SOA Optical Amplification Subsystem launched by Guangzhou Sintai Communication Co., Ltd. is for optical networks in the 100G and other high-rate service weak optical signal amplification platform; using plug-in hot-swappable design, with high integration, low power consumption, stable output power and other characteristics; widely used in various industries data link power amplification and extend the transmission distance and other scenarios.

Product Features

- Wide operating wavelength range: 1290nm to 1320nm, covering the 1310nm window
- Operating modes are selectable: automatic power control (APC) and automatic gain control (AGC)
- Wide range of input optical power: -20dBm to 0dBm
- High output optical power: saturated output optical power up to +10dBm
- Dual power protection: support AC 220V, DC-48V power supply optional, 1+1 power input protection
- Flexible architecture: 1U plug-in design, flexible capacity configuration
- Green and easy to maintain: configuration-free installation, plug-and-play equipment
- Unified network management platform: support SNMP, Web and other graphical interface network management

Product Specification

Parameter	Description	Remark
Operating wavelength range	1290nm ~ 1320nm	
Input optical power range (total power)	-20dBm ~ 0dBm	
Output optical power range (total power)	0dBm ~ 10dBm	
Gain (electronics)	≥14dB	
Gain flatness	≤2dB	
Coefficient of noise	≤7.5 dB	
Polarisation related gain	≤2dB	
Operating temperature range	-10℃~60℃	
Operating humidity range	5% to 95% non-condensing	
Storage temperature	-40℃~85℃	
Device size	1U: 44 mm (H) x 442 mm (W) x 280 mm (D)	
Network management	Support SNMP, Web and other graphical interface network management	Optional Configuration
System capacity	16*100G optical signal amplification	1U full configuration
Optical interface	LC/UPC type	
Power supply method	AC: 90 ~ 260V or DC: -36 ~ -72 V (Supports 1+1 power input backup)	
Typical power consumption	Whole machine full <120W	
Heat dissipation	Fan cooling	

OEO: Optical Amplification Subsystem

The OEO Optical Amplification Subsystem launched by Guangzhou Sintai Communication Co., Ltd. adopts the industry's highest performance and most flexible clock and data recovery (CDR) series chip design, which can perfectly realise the regenerative amplification of optical signals as well as the signal cleaning and shaping functions. With high compact structure, flexible configuration, low power consumption and other characteristics, it supports 100M~100G full-mode, full-rate service optical amplification, and is widely used in carriers, private networks and information fields.

Product Features

- Supports various rate classes of SDH/SONET services and POS, GE, 10GE, 40GE, 100GE and other services optical amplification
- Supports single and multi-mode optical signal conversion, single and dual-fibre optical signal conversion, optical wavelength conversion and other application scenarios
- 1U platform can support a maximum of 40 155M~10G rate service signal amplification, or 24 40G~100G rate service signal amplification
- Adopting modular design, each model of OEO function single card can be flexibly configured, good scalability
- Completely configuration-free installation, equipment plug and play all optical interfaces can be plugged and reusable, reducing spare parts investment
- Support SNMP, Web and other graphical interface network management
- With ALS function to extend the service life of the laser and avoid laser leakage to cause harm to people
- Support AC 220V and DC-48V power supply options, 1+1 power input protection

Product Specification

Parameter	Description
Device size	1U: 44 mm (H) x 442 mm (W) x 280 mm (D)
Operating wavelength range	Multimode 850nm, Singlemode 1260nm~1650nm, CWDM/DWDM
Supported service types	STM-1/4/6/16/64/256, FE/GE/10GE/40GE/100GE
Service access capability	● Supports OEO (optical-electrical-optical) amplification of up to 40 service signals at 155M~10G rates ● Supports OEO (optical-electrical-optical) amplification of up to 24 service signals at 40G or 100G rates
3R Function	Supports 3R functions: Re-amplifying, Retiming, Re-shaping
ALS function	Supports laser automatic shutdown alarm function: automatically shut down the emission when the laser receives no light
Network management	Support SNMP, Web and other graphical interface network management
Optical interface	LC/UPC type
Operating temperature range	-10℃~60℃
Operating humidity range	5% to 95% non-condensing
Storage temperature	-40℃~85℃
Power supply method	AC: 90 ~ 260V or DC: -36 ~ -72 V (Supports 1+1 power input backup)
Typical power consumption	Whole machine full <90W
Heat dissipation	Fan cooling

EDFA: Optical Amplification Subsystem

The main function of EDFA Optical Amplification Subsystem launched by Guangzhou Sintai Communication Co., Ltd. is to compensate the power of the signal light in the transmission link and extend the transmission distance of the optical signal. According to the function can be divided into BA(booster amplifier), LA(line amplifier), PA(pre amplifier), etc., of which BA is commonly used in the system sending end, to improve the system into the fibre optical power; LA is commonly used in the line relay section, to compensate for the loss of optical power on the line; PA is commonly used in the system receiving end, to improve the system to receive optical power, EDFA features the use of erbium-doped optical fibre as a gain medium, with 980 or 1480 nm pump laser as a pump source, using one or two-stage amplification to form a set for the input signal, and then the EDFA can be used for the transmission of optical signals to extend the transmission distance. It adopts one-stage or two-stage amplification to form the aggregate amplification for the input signal, which is the DWDM system and the future high-speed system, all-optical network It is an indispensable part of DWDM system and future high-speed system and all-optical network.

Product Features

- Support C-band 48-wave/96-wave DWDM signal unified amplification
- Automatic Gain Control (AGC)
- Flat gain and small noise index
- Supports built-in VOA
- Support SNMP, Web and other graphical interface network management
- Support AC 220V/110V and DC-48V power supply options, 1+1 power input protection
- 1U plug-in design with flexible capacity configuration
- Configuration-free installation, plug-and-play device

Product Specification

Parameter	Description			Remark
Operating wavelength range	Conventional: 1529nm~1561nm Extended: 1528nm~1568nm			
Type of EDFA	BA	LA	PA	
Minimum input optical power (conventional)	-26dBm	-34dBm	-39dBm	
Saturated output optical power (conventional)	+20dBm	+20dBm	+20dBm	Custom up to +22dBm
Rated gain (conventional)	17dB	25dB	30dB	Custom
Gain flatness	≤1.5dB			
Coefficient of noise	≤5.5 dB			
Operating temperature range	-10℃~60℃			
Operating humidity range	5% to 95% Non-condensing			
Storage temperature	-40℃~85℃			
Device size	1U: 44 mm (H) x 442 mm (W) x 280 mm (D)			
Network management	Support SNMP, Web and other graphical interface network management			Optional Configurations
Expertise	Built-in VOA			Optional configurations
Optical interface	LC/UPC type			
Power supply method	AC: 90 ~ 260V or DC: -36 ~ -72 V (1+1 power input backup)			
Typical power consumption	Whole machine full <50W			
Heat dissipation	Fan cooling			

OLP: Line Protection Subsystem

The OLP Optical Line Protection Subsystem launched by Guangzhou Sintai Communication Co., Ltd. based on advanced optical switching technology, is an independent of the communication transmission system, completely built on the optical cable physical link automatic monitoring and protection system; its role is to detect the performance of the working channel line degradation or blocking, the system can automatically switch the transmission signal to the protection line fibre in real time, so as to form a Highly reliable, safe and flexible, disaster-resistant optical communication network.

Product Features

- Supports applications in various optical communication systems
- Support dual-fibre and single-fibre transmission network line protection
- Supports automatic or manual switching of multiple working modes
- Supports real-time monitoring of primary and backup routes
- Fast response time: physical switching time <20ms
- Supports automatic non-cutback and automatic cutback functions, and the automatic cutback time can be set to adapt to a variety of application scenarios
- Supports panel key function, the site can operate the system through the key, without the help of network management
- Supports power-down and power-up hold functions
- The OLP function card and the network element management card are independent of each other
- Support SNMP, Web and other graphical interface network management
- Supports AC 220V/110V and DC-48V power supply options, 1+1 power input protection
- 1U plug-in design with flexible capacity configuration

Product Specification

Parameter		Description		
Operating wavelength range		1260nm ~ 1650nm		
OLP type		OLPA (Dual fibre 1+1 Protection)	OLPB (Dual fibre 1:1 protection)	OLPA-BiDi (single fibre 1+1 protection)
Physical switching time		<20ms	<40ms	<20ms
Introduce loss	Working route	<5dB	<3dB	<7dB
	Backup route	<5dB	<3dB	<7dB
Monitoring optical power range		-30 dBm ~+20dBm		
Operating temperature range		-10℃~60℃		
Operating humidity range		5% to 95% non-condensing		
Storage temperature		-40℃~85℃		
Device size		1U: 44 mm (H) x 442 mm (W) x 220 mm (D)		
Network management		Support SNMP, Web and other graphical interface network management		
Optical interface		LC/UPC type		
Power supply method		AC: 90 ~ 260V or DC: -36 ~ -72 V (Supports 1+1 power input backup)		
Typical power consumption		Whole machine full <50W		
Heat dissipation		Fan cooling		

OBP: Optical Protection Subsystem

The OBP Optical Bypass Protection Subsystem (Bypass) launched by Guangzhou Sintai Communication Co., Ltd. is a kind of intelligent optical switching system, which belongs to the physical layer equipment and is applied in the pure optical network environment, and can automatically identify the power supply state of the network node and the output state of the optical signal, so that it can be instantly switched to the bypass optical path when there is a failure of the local optical equipment (including power supply interruption, hardware or software failure, etc.). The line will bypass the local equipment (i.e. faulty node), thus avoiding the full obstruction due to the faulty node and ensuring the system connectivity.

Product Features

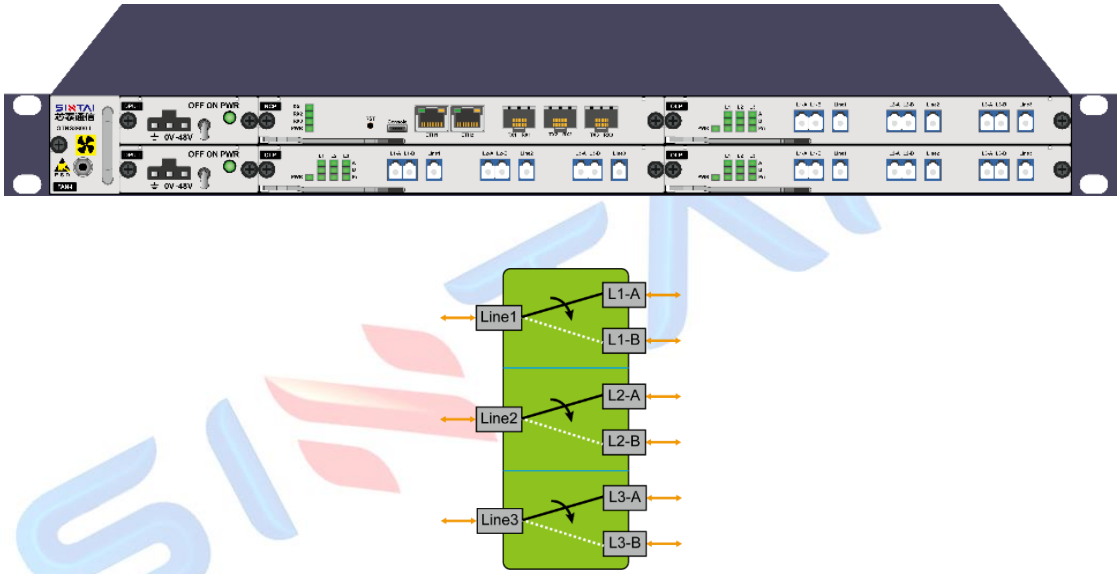
- Applicable to all kinds of gateway devices, such as: DPI devices, firewalls, IPS, UTM, IDP, spam gateways, anti-virus gateways, special DDos devices, special logical isolation devices in various fields and so on
- Support power-down, power-up hold function: Bypass device power-down or power-up, does not affect the switching state of the work route to ensure that the system works well and has a hot-swap function
- Heartbeat function: supports heartbeat monitoring
  Automatic instantaneous switchover, shielding faulty nodes without human intervention, physical switchover time <20ms
- The Bypass function card and the network element management card are independent of each other
- Support SNMP, Web and other graphical interface network management
- Support AC 220V/110V and DC-48V power supply options, 1+1 power input protection
- 1U plug-in design with flexible capacity configuration

Product Specification

Parameter		Description	
Operating wavelength range		850nm, 1260nm ~ 1650nm	
Type of OBP		OBPA (Dual fibre 1+1 protection)	OBPB (Dual fibre 1:1 protection)
Physical switching time		<20ms	<20ms
Introduce loss	**Connect in series**	<3.5 dB (conventional 50 per cent:50 per cent beam splitting)	<1.5dB
	Bypass	<4.5 dB (conventional 50 per cent:50 per cent beam splitting)	<1.5dB
Monitoring optical power range		-50 dBm ~+25dBm	
Operating temperature range		-10℃~60℃	
Operating humidity range		5% to 95% non-condensing	
Storage temperature		-40℃~85℃	
Device size		1U: 44 mm (H) x 442 mm (W) x 280 mm (D)	
Network management		Support SNMP, Web and other graphical interface network management	
Optical interface		LC/UPC type	
Power supply method		AC: 90 ~ 260V or DC: -36 ~ -72 V (Supports 1+1 power input backup)	
Typical power consumption		Whole machine full <50W	
Heat dissipation		Fan cooling	

OSS: Optical Routing Subsystem

The OSS Optical Routing Sub-system launched by Guangzhou Sintai Communication Co., Ltd. is a kind of optical routing control device, which plays the role of controlling optical routing and switching optical routing. It is mainly used in optical transmission system for multi-channel optical monitoring, automatic switching of LAN multiple light sources/detectors and optical sensing multi-point dynamic monitoring system; real-time monitoring of multi-channel optical fibre lines is achieved by one device, saving equipment investment.



Product Features

- Low insertion loss and fast switching speed
- Transparent transmission of signals with high stability and reliability
- Supports automatic or manual reversal of multiple working modes
- Fast response: inversion time <20ms
- Support automatic return and automatic non-return function, automatic return time can be set to adapt to a variety of application scenarios
- Supports power-down and power-up hold functions
- The optical routing single card and the network element management card are independent of each other and do not affect each other
- Supports power-down and power-up hold functions
- Support SNMP, Web and other graphical interface network management
- Support AC 220V/110V and DC-48V power supply options, 1+1 power input protection

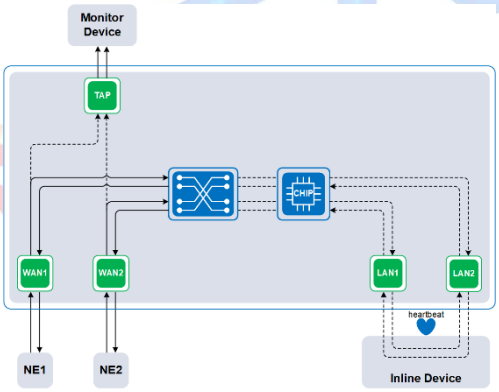
Plug-in card design, single card support 3 groups of 2 options, flexible capacity configuration

Product Specification

Parameter	Description
Operating wavelength range	1260nm ~ 1650nm
Monitoring optical power range	-50 dBm ~+25dBm
Introduce loss	<1dB
Invert time	<20ms
Optical switch life	10^7 times
Operating temperature range	-5℃~55℃
Storage temperature	-40℃~85℃
Device size	1U: 44 mm (H) x 442 mm (W) x 220 mm (D)
Network management	Support SNMP, Web and other graphical interface network management
Optical interface	LC/UPC type
Power supply method	AC: 90 ~ 260V or DC: -36 ~ -72 V (Supports 1+1 power input backup)
Typical power consumption	Whole machine full <50W

100G: Bypass Protection Device

The 100G Bypass Protection Device launched by Guangzhou Sintai Communication Co., Ltd. is used for network line protection, the device is connected in series in the optical Ethernet link, with active and passive bypass function, to maintain the integrity of the network connection in the event of inline system failures or maintenance, to support all kinds of gateway devices (such as: firewalls, IDPs, UTM, intrusion prevention systems, spam) gateway, dedicated network audit equipment, etc.) intelligent switching.



Product Features

- Pluggable modular design, all components support hot swapping
- Single device supports 4 pairs of 100G link access Bypass capability
- TAP interface with splitter function to provide link data mirroring
- With optical power amplification protection function, provide the original link optical power amplification at the same time can be amplified link Bypass protection
- Supports three switching/protection modes: K0 hard pass-through, K1 soft forwarding and mirroring, K2 soft forwarding and serial connection
- Hard switchover time <5ms, soft switchover support external link without packet loss
- Soft forwarding state supports high-speed non-blocking full wire-speed processing capability
- Support panel physical switch to switch link state
- Supports link hold mode, which maintains the set state regardless of changes in the link state
- Support business module heartbeat monitoring function
- Support port optical power monitoring, packet statistics
- With ACL rule matching function, support for the winning traffic forwarding or passthrough

- Dual power supply redundant backup design, power modules can be hot-swappable, support for AC 220V/110V, DC-48V power supply options
- Dual-fan redundant backup design with hot-swappable fan modules
- With CLI, SNMP and other management functions, support open API interface management

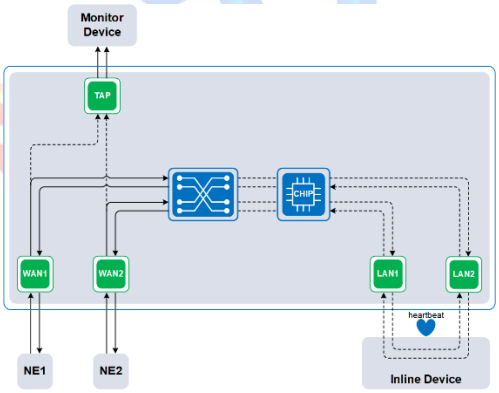
Product Specification

Parameter		Description
Number of 100G link accesses		4 Pairs
100G Link optical module standard		100GBASE-LR4
Link interface	**Standard mode WAN interface**	8 Pairs of LC interfaces (every 2 pairs accesses 1 external bidirectional link)
	Low light mode WAN interface	8 Pairs of LC interfaces (every 2 pairs accesses 1 external bidirectional link)
	TAP Interface	4 Pairs of LC interfaces (each pair outputs 1 external bi-directional link mirror optical signal)
	LAN Interface	8 QSFP28 100G optical interfaces (1 pair of local bi-directional links in series of 2)
Link protection mode	**K0 mode**	Hard passthrough mode, in which the physical link to the WAN interface is passthrough through a physical switching device;
	K1 mode	Soft forwarding and mirroring mode, that is, through the control chip will be between the WAN interface packet correspondence forwarding to achieve straight-through
	K2 mode	Soft forwarding and concatenation mode, i.e., packets are concatenated and forwarded between the WAN and LAN interfaces via the control chip
Input optical power	**Standard mode WAN interface**	+4.5 ~ +10dBm
	Low light mode WAN interface	-6 ~ +10dBm
	LAN interface	-6 ~ +10dBm
External link insertion loss	**K0 mode**	<4.5dB
	K1 mode	<10.3dB (input) <2dB (output)
	K2 mode	<10.3dB (input) <2dB (output)
	TAP interface	<10.3dB
Switching time	**K0 mode <-> K1/K2 mode**	<5ms
	K1 mode <-> K2 mode	No packet loss on external links
Management interface		• 2 x 10/100/1000M Adaptive RJ45 ports • 1 RJ45 Type CONSOLE port • Hot-swappable mothercard

Management style	● CLI command line ● SNMP ● Open API interface
Power supply method	● AC: 90 ~ 260V, DC: -36 ~ -72 V, high voltage DC optional ● Standard CPRS power supply 1+1 hot standby
Heat dissipation method	● Forward airflow, rear airflow ● 1+1 fan unit backup, hot-swappable
Operating temperature range	0℃~50℃
Operating humidity range	5% to 85% Non-condensing
Storage temperature	-40℃~85℃
Device size	1U: 44 mm (H) x 444 mm (W) x 490 mm (D)
Installation	19-Inch cabinet with 800mm depth or more
Weight	12kg
Power consumption	<300W

10G: Bypass Protection Device

The 10G Bypass Protection Device launched by Guangzhou Sintai Communication Co., Ltd. is used for network line protection, the device is connected in series in the optical Ethernet link, with active and passive bypass function, to maintain the integrity of the network connection in the event of inline system failures or maintenance, to support all kinds of gateway devices (such as: firewalls, IDPs, UTM, intrusion prevention systems, spam) gateway, dedicated network audit equipment, etc.) intelligent switching.



Product Features

- Pluggable modular design, provides 4 service slots, all components support hot-swap, on-demand deployment and capacity expansion
- Single slot card supports 2 pairs of 10G link access Bypass capability, single device supports a maximum of 8 pairs of 10G link access Bypass capability
- Link rate adaptation 10GE, GE
- TAP Interface with splitter function to provide link data mirroring
- Expandable optical power amplifier card to provide optical power amplification of the original link while providing Bypass protection for the amplified link
- Supports three switching/protection modes: K0 hard pass-through, K1 soft forwarding and mirroring, K2 soft forwarding and serial connection
- Hard switchover time <5ms, soft switchover support external link without packet loss
- Soft forwarding state supports high-speed non-blocking full wire-speed processing capability
- Supports link hold mode, which maintains the set state regardless of changes in the link state

- Support panel physical switch to switch link state
- Support business module heartbeat monitoring function
- Support port optical power monitoring, packet statistics

Product Specification

Parameter		Description
Service slot		4, Support 10G bypass protection card and 10G bypass amplification card mixed plug and play
10G Bypass Protection Card	**Number of link accesses**	Single card supports access to 2 external bi-directional link bypass protections
	WAN Interface	4 Pairs of LC interfaces (every 2 pairs access 1 external bidirectional link)
	TAP Interface	2 Pairs of LC interfaces (each pair outputs 1 external bi-directional link mirror optical signal)
	LAN Interface	4 SFP optical interfaces (1 local bi-directional link pair in series of 2)
	Link protection mode	K0: Hard passthrough mode, i.e., physical link passthrough of the WAN interface through a physical switching device; K1: Soft forwarding and mirroring mode, i.e. through the control chip to forward packets between WAN interfaces correspondingly to achieve the straight-through; K2: Soft forwarding and concatenation mode, i.e. packets are concatenated and forwarded between the WAN and LAN interfaces via the control chip.
	Switching time	K0 mode <-> K1/K2 mode: <5ms K1 mode <-> K2 mode: no packet loss on external link
	External link insertion loss	K0: <3.7dB K1: <9.5dB on input, <1dB on output K2: <9.5dB on input, <1dB on output TAP interface: <9.5dB
	Operating wavelength	Single mode 1310nm (custom multimode available)
	Operating speed	10G, 1.25G
	Input optical power	WAN Interface: -7 ~ +4dBm LAN Interface: -14.4 ~ -1dBm
10G Bypass Amplifier Card	**Number of link accesses**	Single card supports access to 2 external bi-directional link bypass optical amplification
	WAN Interface	4 Pairs of LC interfaces (every 2 pairs access 1 external bidirectional link)
	LAN Interface	4 Pairs of LC interfaces (1 local bi-directional link pair in series with every 2 pairs)
	Link protection mode	K0: Hard passthrough mode K2: Serial mode
	Switching time	K0 mode <-> K2 mode: <5ms
	Operating wavelength	Single mode 1310nm (custom multimode available)
	Operating speed	10G, 1.25G

	Input optical power	WAN Interface: -14.4 ~ -1dBm LAN Interface: -7 ~ 1dBm
	Amplified output optical power	> -3dBm
Management interface		● 2 x 10/100/1000M Adaptive RJ45 ports ● 1 RJ45 Type CONSOLE port ● Hot-swappable mothercard
Management style		● CLI command line ● SNMP ● Open API interface
Power supply method		● AC: 90 ~ 260V, DC: -36 ~ -72 V, high voltage DC optional ● Standard CPRS power supply 1+1 hot standby
Heat dissipation method		● Forward airflow, rear airflow ● 1+1 fan unit backup, hot-swappable
Operating temperature range		0℃~50℃
Operating humidity range		5% to 85% Non-condensing
Storage temperature		-40℃~85℃
Device size		1U: 44 mm (H) x 444 mm (W) x 490 mm (D)
Installation		19-Inch cabinet with 800mm depth or more
Weight		12kg
Power consumption		<300W