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FS D7000 Series Data Sheet

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I Product Overview

D7000-CH2U 8-slot 2U chassis measures 19 inches in width, featuring optical-electrical integration and a maximum load capacity of 1300W(AC)/1000W(DC). It supports 1+1 redundant power supplies and allows for main control cards backup (defaulting to one single main control). It also provides up to 3.2 Tbs of capacity in two rack units, allows unified management through AmpCon-T/WebGUI/CLI interfaces.

The D7000 series is a 200G/400G stackable wavelength division transmission platform featuring large transmission capacity, small size, low power consumption, and easy O&M. It provides simplified and automated management through AmpCon-T, WebGUI, CLI and SNMP to enhance data security and operational efficiency, which is ideal for DCI, metro, regional and long-haul networks.

I Features and Benefits

- 8 Slots, 2U 19" Stackable Chassis Unit for DCI Traffic Cards
- Deliver Multiple Rates 10G/100G/200G and 400G
- Up to 400 Gb/s per wavelength for 3.2T Maximum Capacity
- Dual Redundant Backup for NMU and Power Supplies
- Support Optical/Electrical Integration
- Enhance Simple Management through AmpCon-T
- Applied in DCI, Metro, Regional and Long-haul Networks

Product Details

Product configurations



Figure 1.

D7000-CH2U, 8 Slots 2U Stackable Unloaded Chassis, Support Single-wavelength 200G/400G, Up to 3.2Tbps Capacity, Redundant AC/DC PSUs, Support AmpCon-T/WebGUI Network Management



Figure 2.

D7000 4MC4, 1x 400G QSFP-DD or 4x 100G QSFP28 to 1x 400G CFP2 Muxponder for D7000 Managed Chassis



Figure 3.

D7000 2MC2, 2x 100G QSFP28 to 1x 200G CFP2 Muxponder for D7000 Managed Chassis



Figure 4.

D7000 11MC2, 1x 100G QSFP28+10x 10G SFP+ to 1x 200G CFP2 Muxponder for D7000 Managed Chassis



Figure 5.

D7000 20MC2, 20 x 10G SFP+ to 1 x 200G CFP2 Muxponder for D7000 Managed Chassis



Figure 6.

D7000 OA1825, DWDM EDFA Bidirectional Amplifier with PA 15~25dB and BA 8~18dB Gain , 21.5dBm Output for D7000 Series Managed Chassis, with Built in OSC, VOA

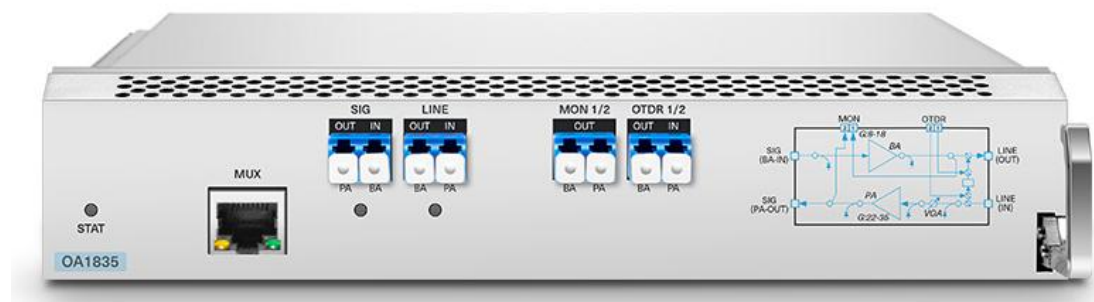


Figure 7.

D7000 OA1835, DWDM EDFA Bidirectional Amplifier with PA 22~35dB and BA 8~18dB Gain , 21.5dBm Output for D7000 Series Managed Chassis, with Built in OSC, VOA

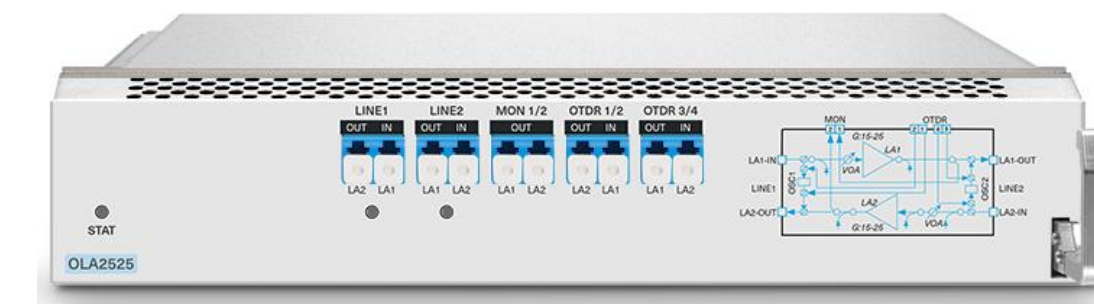


Figure 8.

D7000 OLA2525, DWDM EDFA In-line Amplifier with Dual LA 15~25dB Gain, 21.5dBm Output for D7000 Series Managed Chassis, with Built in OSC, VOA



Figure 9.

OMD48ECM, 48 Channels 100GHz C14-C61 Passive, Dual Fiber DWDM Mux and Demux with Monitor Port, LC/UPC, 1U Rack

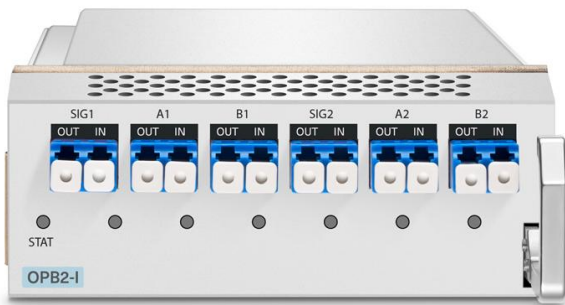


Figure 10.

D7000 OPB2-I, 1+1 Optical Protection Switch for D7000 Managed Chassis, with Built in 2 Protection Groups



Figure 11.

D7000 OPB2, 1+1 Optical Protection Switch for D7000 Managed Chassis

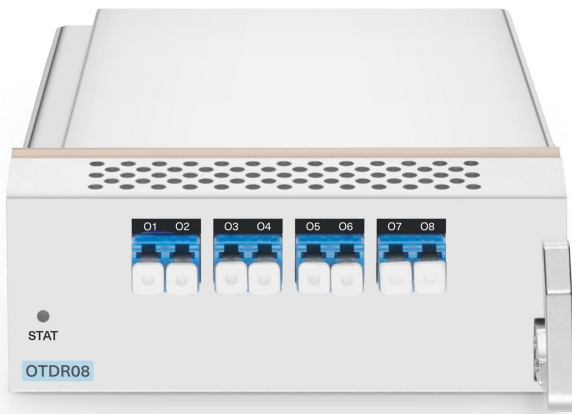


Figure 12.

D7000 OTDR08, 8 Channels 1501nm Optical Time-Domain Reflectometer (OTDR) for D7000 Series Managed Chassis

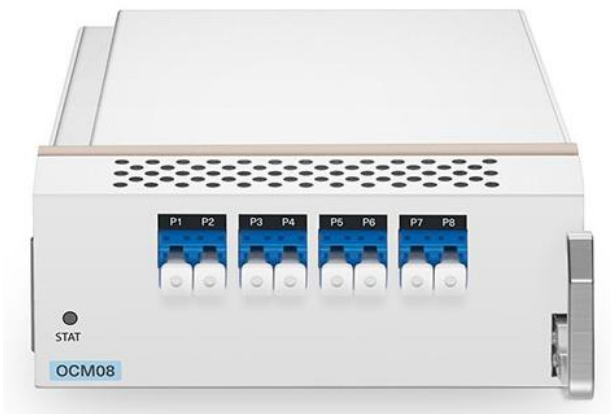


Figure 13.

D7000 OCM08, 8 Channels 1528~1568nm Optical Channel Monitor (OCM) for D7000 Series Managed Chassis

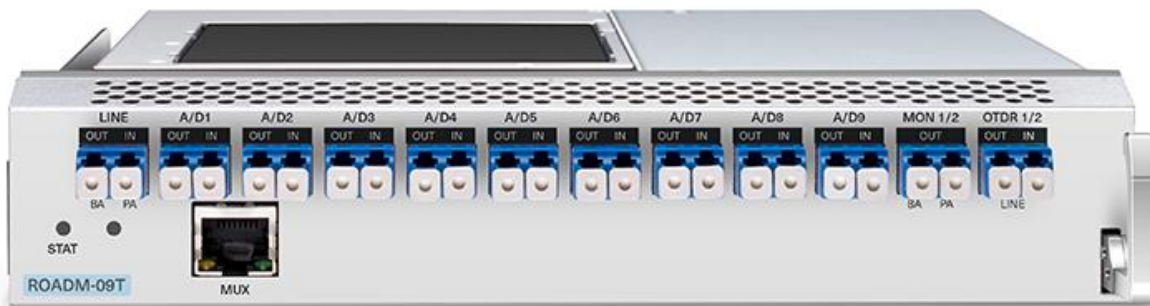


Figure 14.

D7000 ROADM-09T, 9-degree CDCF Pluggable ROADM for D7000 Managed Chassis, Featuring WSS Technology

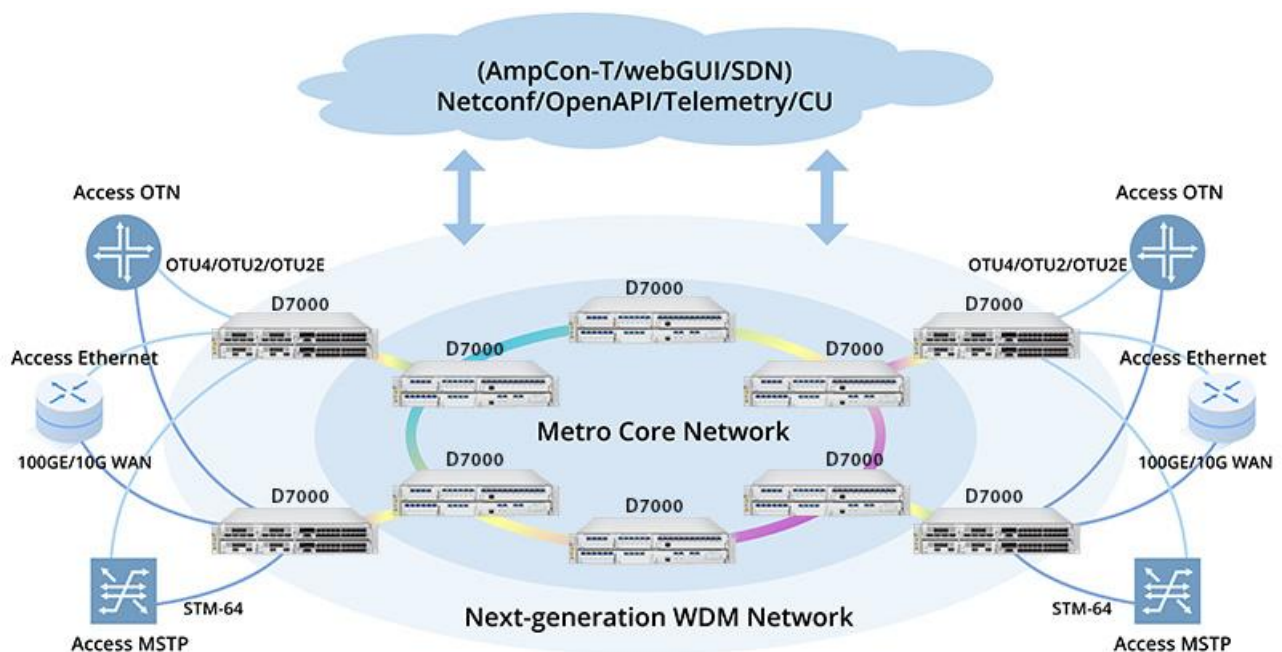


Figure 15.

Customized 4CH Dual Fiber DWDM OADM for D7000 Series Managed Chassis

Application

D7000 series data center interconnection and metro core network products are industry-leading, modular, fully decoupled, high-capacity, next-generation optical transmission equipment. Its flexible networking capability, rich service interfaces, diverse power interfaces, and optoelectronic coaxial function make it suitable for interconnection of small, medium and large data centers, metro and wide-area operator networks, as well as interconnection and backup of enterprise networks and computing centers. The equipment can form point-to-point WDM transmission and relay networks, multi-span relay networks, ring FOADM or ROADM WDM networks, and full mesh FOADM or ROADM WDM networks.



Technical Specification

Table 1. Technical Specification of D7000 Chassis

Parameter	D7000-CH2U
Physical Specifications	
Power Redundancy	1+1 Backup Power Supply
Power Supply	Dual AC Power, 90~264VAC, Hot-swappable (240VHDC Power Supply 180~300VHDC, 12A-7A) Dual DC Power, -36~-75VDC, 30A-15A, Hot-swappable Power Supply
Power Consumption	Max. 1300W (AC) Max. 1000W (DC)
Cooling Unit	3x Smart Fans, Front-to-Back, Hot-swappable
Maximum Capacity	Up to 3.2 Tbps
Maximum Wavelength Number	96
Line Rate	200/400G
Supported Service Types	400GE 100GE OTU4 10G WAN/LAN OTU2 OTU2E STM-64 FC800 FC1000 FC1600 FC3200
Dimensions (HxWxD)	3.46"x17.32"x18.90" (88x440x480mm)
Weight	15.79kg (AC) 15.65kg (DC)
Port	
Slot Count	8 Slots for AC/DC Chassis
Management Interface	1x CON RJ45 1x ETH RJ45 2x NM1/NM2 RJ45
Management	
Management Type	AmpCon-T/WebGUI/CLI; SNMPv1, SNMPv2c, SNMPv3
Environmental	
Operating Temperature	0 to 45° C (32 to 113° F)
Storage Temperature	-40 to 85°C (-40 to 185° F)
Relative Humidity	5% to 90%, No Condensing

Table 2. Technical Specification of D7000 Muxponders

Parameter	4MC4	2MC2
Line Characteristics		
Interface Type	1x 400G CFP2	1x 200G CFP2
Line Signal Multiplexing Structure	400G(OCh)<->OTUC4<->ODUC4<->ODU4	200G(OCh)<->OTUC2<->ODUC2<->ODU4
FEC	SD-FEC	SD-FEC
Modulation Mode	DP-16QAM	400G Module Downgraded to 200G Mode: DP-16QAM/DP-8QAM/DP-QPSK 200G Module: DP-8QAM
Client Characteristics		
Interface Type	1x 400G QSFP-DD or 4x 100G QSFP28	2x 100G QSFP28
Client Signal Mapping Mode	100GE<->ODU4 OTU4<->ODU4 400G<->OTUC4	100GE<->ODU4 OTU4<->ODU4
FEC	Supported (Related to the Transceivers on the Client Side)	Supported (Related to the Transceivers on the Client Side)
Function		
ALS	Supported	Supported
LLDP	Supported	Supported
OTN Function	Adopts ITU-T G.709 Frame Format and Overhead Processing ODUk (k=4, C4) Layer: PM, etc. OTUk (k=C4) Layer: SM	Adopts ITU-T G.709 Frame Format and Overhead Processing ODUk (k=4, C2) Layer: PM, etc. OTUk (k=C2) Layer: SM
Delay Measurement	Supported	Supported
Protection Scheme	OCP, OMSP, and OLP	OCP, OMSP, and OLP
Loopback	Support Internal and External Loopback	Support Internal and External Loopback
Service Type	400GE, 100GE, OTU4	100GE, OTU4
Physical Specifications		
Power Consumption	Max. 65W	Max. 55W
Dimension(HxWxD)	1.67"x4.20"x10.39" (42.3x106.8x264mm)	1.67"x4.20"x10.39" (42.3x106.8x264mm)
Housing	Occupies 1 Slot in D7000-CH2U Chassis	Occupies 1 Slot in D7000-CH2U Chassis
Weight	1.46kg	1.14kg

Parameter	4MC4	2MC2
Latency	Microsecond-level latency	
Visual Indicator		
STAT	Flashing green: During the line card boot process, firmware loading has not yet completed. Solid Green: Represents that there is no alarm on the board itself, but it is irrelevant whether the port has an alarm or not. Solid red: There are critical level alarms. Flashing red: There are major level alarms. Solid orange: There are minor level alarms. Extinguish: The board fails or does not power on.	
Line-side Port LEDs	L1 Solid Green: The line-side port itself is operating normally and the service is normal. Solid red: There are critical level alarms. Flashing red: There are major level alarms. Solid orange: There are minor level alarms. Extinguish: The line-side module is not plugged in or powered on.	
Client-side Port LEDs	C1/C2/C3/C4 Solid Green: The corresponding port on the customer side is operating normally and the service is normal. Solid red: There are critical level alarms. Flashing red: There are major level alarms. Solid orange: There are minor level alarms. Extinguish: The customer-side corresponding module is not plugged in or powered on.	C1/C2 Solid Green: The corresponding port on the customer side is operating normally and the service is normal. Solid red: There are critical level alarms. Flashing red: There are major level alarms. Solid orange: There are minor level alarms. Extinguish: The customer-side corresponding module is not plugged in or powered on.
Environmental		
Operating Temperature	0 to 45° C (32 to 113° F)	0 to 45° C (32 to 113° F)
Storage Temperature	-40 to 85° C (-40 to 185° F)	-40 to 85° C (-40 to 185° F)
Management	AmpCon-T/WebGUI/CLI; SNMPv1, SNMPv2c, SNMPv3; In-band GCC0 Channel	

Parameter	11MC2	20MC2
Line Characteristics		
Interface Type	1x 200G CFP2	1x 200G CFP2
Line Signal Multiplexing Structure	200G(OCh)<->OTUC2<->ODUC2<->ODU4	200G(OCh)<->OTUC2<->ODUC2<->ODU4
FEC	SD-FEC	SD-FEC
Modulation Mode	400G Module Downgraded to 200G Mode: DP-16QAM/DP-8QAM/DP-QPSK 200G Module: DP-8QAM	400G Module Downgraded to 200G Mode: DP-16QAM/DP-8QAM/DP-QPSK 200G Module: DP-8QAM
Client Characteristics		
Interface Type	1x 100G QSFP28 + 10x 10G SFP+	20x 10G SFP+
Client Signal Mapping Mode	10GE LAN<->ODU2E<->ODU4; 10GE WAN<->ODU2<->ODU4; STM64/OC192<->ODU2 <->ODU4; FC800/1000/1600/3200<->ODU Flexe<->ODU4; OTU2/2e<->ODU2/2e<->ODU4; 100GE<->ODU4; OTU4<->ODU4	10GE LAN<->ODU2E<->ODU4; 10GE WAN<->ODU2<->ODU4; STM64/OC192<->ODU2<->ODU4; FC800/1000/1600/3200<-> ODU Flexe<-> ODU4; OTU2/2e<->ODU2/2e<->ODU4
FEC	Not Supported	Not Supported
Function		
ALS	Supported	Supported
LLDP	Supported	Supported
OTN Function (Interface+Cost)	Adopts ITU-T G.709 Frame Format and Overhead Processing ODUk (k=2, 2e, 4, C2) Layer: PM, etc. OTUk (k=C2) Layer: SM	Adopts ITU-T G.709 Frame Format and Overhead Processing ODUk (k=2, 2e, C2) Layer: PM OTUk (k=C2) Layer: SM
Delay Measurement	Supported	Supported
Protection Scheme	OCP, OMSP and OLP	OCP, OMSP and OLP
Loopback	Support internal and external loopback	Support internal and external loopback
Service Type	100GE, OTU4, 10G WAN/LAN, OTU2, OTU2E, STM-64, FC800, FC1000, FC1600, FC3200	10G WAN/LAN, OTU2, OTU2E, STM-64, FC800, FC1000, FC1600, FC3200
Latency	Microsecond-level latency	
Physical Specifications		
Power Consumption	Max. 75W	Max. 75W

Parameter	11MC2	20MC2
Dimension(HxWxD)	1.67"x8.42"x10.39" (42.3x213.9x264mm)	1.67"x8.42"x10.39" (42.3x213.9x264mm)
Housing	Occupies 2 Slots in D7000-CH2U Chassis	Occupies 2 Slots in D7000-CH2U Chassis
weight	1.81kg	1.81kg
Visual Indicator		
STAT	<p>Flashing green: During the line card boot process, firmware loading has not yet completed.</p> <p>Solid Green: Represents that there is no alarm on the board itself, but it is irrelevant whether the port has an alarm or not.</p> <p>Solid red: There are critical level alarms.</p> <p>Flashing red: There are major level alarms.</p> <p>Solid orange: There are minor level alarms.</p> <p>Extinguish: The board fails or does not power on.</p>	
Line-side Port LEDs	<p>L1</p> <p>Solid Green: The line-side port itself is operating normally and the service is normal.</p> <p>Solid red: There are critical level alarms.</p> <p>Flashing red: There are major level alarms.</p> <p>Solid orange: There are minor level alarms.</p> <p>Extinguish: The line-side module is not plugged in or powered on.</p>	
Client-side Port LEDs	<p>C1~C10/C21</p> <p>Solid Green: The corresponding port on the customer side is operating normally and the service is normal.</p> <p>Solid red: There are critical level alarms.</p> <p>Flashing red: There are major level alarms.</p> <p>Solid orange: There are minor level alarms.</p> <p>Extinguish: The customer-side corresponding module is not plugged in or powered on.</p>	<p>C1~C20</p> <p>Solid Green: The corresponding port on the customer side is operating normally and the service is normal.</p> <p>Solid red: There are critical level alarms.</p> <p>Flashing red: There are major level alarms.</p> <p>Solid orange: There are minor level alarms.</p> <p>Extinguish: The customer-side corresponding module is not plugged in or powered on.</p>
Environmental		
Operating Temperature	0 to 45° C (32 to 113° F)	0 to 45° C (32 to 113° F)
Storage Temperature	-40 to 85° C (-40 to 185° F)	-40 to 85° C (-40 to 185° F)
Management		
<p>AmpCon-T/WebGUI/CLI; SNMPv1, SNMPv2c, SNMPv3; In-band GCC0 Channel</p>		

Parameter	OA1825	OA1835	OLA2525
Optical Specifications			
ISO	1501 LINE---> PA: ≥30dB 1550 LINE --->OSC: ≥45dB 1501 LINE--->OSC: ≥12dB 1510 LINE --->OTDR: ≥80dB 1510 LINE --->OTDR: ≥41dB	1501 LINE---> PA: ≥30dB 1550 LINE --->OSC: ≥45dB 1501 LINE--->OSC: ≥12dB 1510 LINE --->OTDR: ≥80dB 1510 LINE --->OTDR: ≥41dB	1501 LINE---> PA: ≥30dB 1550 LINE --->OSC: ≥45dB 1501 LINE--->OSC: ≥12dB 1510 LINE --->OTDR: ≥80dB 1510 LINE --->OTDR: ≥41dB
Polarization Dependent Loss	<0.5dB	<0.5dB	<0.5dB
Operation Mode	AGC	AGC	AGC
Monitor Accuracy	-0.5~0.5dBm	-0.5~0.5dBm	-0.5~0.5dBm
Monitor Resolution	0.1dBm	0.1dBm	0.1dBm
Visual Indicator			
STAT	Green indicates that the device is powered on and in a normal state; Solid red indicates that the device is reporting critical alarms; Flash red indicates that the device is reporting major alarms; Solid orange indicates that the device is reporting minor alarms; The light is not on, indicating that the device is not powered on.		
LINE/SIG	Solid green indicates that there is input light and is within normal range and no alarm on port; Solid yellow indicates that there is input light, but it is not within the normal range, or there are major/minor alarms on port; Solid red indicates that there is no input light, or there is critical alarm on port.		
Port			
Optical Connector	LC/UPC	LC/UPC	LC/UPC
Monitoring Port	Monitor, OTDR	Monitor, OTDR	Monitor, OTDR
Physical Specifications			
Power Consumption	50W	50W	50W
Dimensions (HxWxD)	1.67"x8.42"x10.39" (42.3x213.9x264mm)	1.67"x8.42"x10.39" (42.3x213.9x264mm)	1.67"x8.42"x10.39" (42.3x213.9x264mm)
Housing	Occupies 2 Slots in D7000-CH2U Chassis	Occupies 2 Slots in D7000-CH2U Chassis	Occupies 2 Slots in D7000-CH2U Chassis
Weight	1.76kg	1.76kg	1.81kg
Environmental			
Operating Temperature	0 to 45°C (32 to 113° F)	0 to 45°C (32 to 113° F)	0 to 45°C (32 to 113° F)
Storage Temperature	-40 to 85°C (-40 to 185° F)	-40 to 85°C (-40 to 185° F)	-40 to 85°C (-40 to 185° F)

Table 3. Technical Specification of EDFA

Parameter	OA1825	OA1835	OLA2525
Optical Specifications			
Operation Wavelength	1528nm~1567.5nm (191.35~196.10THz)	1528nm~1567.5nm (191.35~196.10THz)	1528nm~1567.5nm (191.35~196.10THz)
Operation Wavelength (OSC)	1504~1518nm	1504~1518nm	1504~1518nm
Optical Gain	BA: 8~18dB PA: 15~25dB	BA: 8~18dB PA: 22~35dB	LA1/LA2: 15~25dB
VOA Adjustable Attenuation Range	0~19dB	0~19dB	0~19dB
Operation Power	SIG IN: -25~8dBm SIG OUT: -10~23dBm LINE IN: -25~9dBm LINE OUT: -12~22.5dBm	SIG IN: -25~8dBm SIG OUT: -10~23dBm LINE IN: -34~2dBm LINE OUT: -12~22.5dBm	Line1 IN : -28~6.5dBm Line1 Out : -2~21.5dBm Line2 IN : -28~6.5dBm Line2 Out : -2~21.5dBm
Optical Power (OSC)	TX: -2~2dBm RX: -35~-4dBm	TX: -2~2dBm RX: -35~-4dBm	TX: -2~2dBm RX: -35~-4dBm
Noise Figure	BA G=8, ≤12.5dB G=12, ≤9.1dB G=16~18, ≤ 6.5dB PA G=15, ≤8.1dB G=16, ≤7.3dB G=17, ≤6.6dB G=19, ≤6.4dB G=20~22, ≤ 5.8dB G=23~25, ≤ 5.5dB	BA G=8, ≤12.5dB G=12, ≤9.1dB G=16~18, ≤ 6.5dB PA G=22, ≤8dB G=24, ≤7dB G=25, ≤6.1dB G=27, ≤5.9dB G=28~35, ≤ 5.5dB	G=15, ≤8.1dB G=16, ≤7.3dB G=17, ≤6.6dB G=19, ≤6.4dB G=20~22, ≤ 5.8dB G=23~25, ≤ 5.5dB
Insertion Loss	LINE IN->VOA IN (Signal Band): ≤1dB VOA OUT->PA IN (Signal Band): ≤1dB LINE IN-> OSC_LINE IN (OSC Band): ≤6.5dB (5 typical) OSC_LINE OUT->LINE OUT (OSC Band): ≤6.dB (5 typical) OTDR OUT->LINE OUT (OTDR Band): ≤12dB OTDR IN->LINE IN (OTDR band): ≤2dB	LINE IN->VOA IN (Signal Band): ≤1dB VOA OUT->PA IN (Signal Band): ≤1dB LINE IN-> OSC_LINE IN (OSC Band): ≤6.5dB (5 typical) OSC_LINE OUT->LINE OUT (OSC Band): ≤6.5dB (5 typical) OTDR OUT->LINE OUT (OTDR Band): ≤12dB OTDR IN->LINE IN (OTDR band): ≤2dB	LINE IN->VOA IN (Signal Band): ≤1dB VOA OUT->PA IN (Signal Band): ≤1dB LINE IN-> OSC_LINE IN (OSC Band): ≤6.5dB (5 typical) OSC_LINE OUT->LINE OUT (OSC Band): ≤6.dB (5 typical) OTDR OUT->LINE OUT (OTDR Band): ≤12dB OTDR IN->LINE IN (OTDR band): ≤2dB
Return Loss	≥45dB	≥45dB	≥45dB
Direction	≥50dB	≥50dB	≥50dB
Gain Flatness	<1.5dB	<1.5dB	<1.5dB
Gain Tilt	-3~0dB/40nm	-3~0dB/40nm	-3~0dB/40nm
Gain Reponse Time	<1ms	<1ms	<1ms

Table 4. Technical Specification of MUX & DEMUX

Parameter	OMD48ECM
Optical Specifications	
Channel Number	48CH
Channel Spacing	100GHz
Wavelength	1528nm~1568nm
Dispersion Compensator	± 20 ps/nm
Insertion Loss	<6dB
Return loss	>40dB
Channel Isolation	Adjacent >25dB Non-adjacent >30dB
Center Frequency Deviation	± 5 GHZ
Maximum Difference in Insertion Loss Per Channel	<1dB
Polarization Dependent Loss	≤ 0.5 dB
Polarization Mode Dispersion	≤ 0.5 ps/nm
Port	
Connector Type	LC/UPC
Special Service	Monitor Port (1% Split Ratio)
Physical Specifications	
Weight	2.80kg
Housing	1U Rack Mount
Dimensions (HxWxD)	1.3"x 13.2"x 6" (43.5x440x 200mm)
Work With	D7000-CH2U

Table 4. Technical Specification of MUX & DEMUX

Parameter	OMD48ECM
Environmental	
Operating Temperature	0 to 40° C (32 to 104° F)
Storage Temperature	-40 to 70° C (14 to 158° F)
Relative Humidity	10%~90%

Table 5. Technical Specification of OLP

Parameter	OPB2-I	OPB2
Optical Specifications		
Protection Groups	2	1
Operating Wavelength	C-Band: 1528~1567.5nm (191.35~196.10THz) L-Band: 1570~1612nm (186.10~190.85THz)	C-Band: 1528~1567.5nm (191.35~196.10THz) L-Band: 1570~1612nm (186.10~190.85THz)
Wavelength Dependent Loss	<0.5dB @C+L Band	<0.5dB @C+L Band
Insertion Loss	Tx<4.0dB (3.5 typical) Rx<1.5dB (0.8 typical)	Tx<4.0dB (3.5 typical) Rx<1.5dB (0.8 typical)
Return Loss	>45dB	>45dB
Input Power Range	-30~25dBm	-30~25dBm
Power Resolution	0.1dB (typical)	0.1dB (typical)
Power Accuracy	-0.5~0.5dB	-0.5~0.5dB
Polarization Dependent Loss	0.1dB	0.1dB
Polarization Mode Dispersion	<1ps/nm	<1ps/nm
Switching Speed	<50ms (15 typical)	<50ms (15 typical)
Working Mode	Auto Reversion; Auto Non-reversion	Auto Reversion; Auto Non-reversion
Threshold Mode	Relative Threshold; Absolute Threshold	Relative Threshold; Absolute Threshold
Switch Type	Latching	Latching
Port		
Optical Connector	LC/UPC	LC/UPC
Physical Specifications		
Power Consumption	5W	5W
Dimension (HxWxD)	1.67"x4.20"x10.39" (42.3x106.8x264mm)	1.67"x4.20"x10.39" (42.3x106.8x264mm)
Housing	Occupies 1 Slot in D7000-CH2U Chassis	Occupies 1 Slot in D7000-CH2U Chassis
Weight	0.79kg	0.77kg

Parameter	OPB2-I	OPB2
Visual Indicator		
STAT	Green indicates that the device is powered on and in a normal state; Solid red indicates that the device is reporting critical alarms; Flash red indicates that the device is reporting major alarms; The light is not on, indicating that the device is not powered on.	
SIG	The green light is always on, indicating that the optical power of the luminous port of the transmission device is above the set threshold; The red light is on constantly, indicating that the optical power of the luminous port of the transmission device is below the set threshold (alarm).	
A/A1/A2	The green light is always on, indicating that the light receiving power of the primary port is higher than the set threshold; The green light is slow flashing, indicating that the light receiving power of the primary port is higher than the set threshold and now it is working path. The red light is on constantly, indicating that the light receiving power of the primary port is below the set threshold (alarm); The red light is slow flashing, indicating that the light receiving power of the primary port is below the set threshold (alarm) and now it is working path.	
B/B1/B2	The green light is always on, indicating that the light receiving power of the secondary port is higher than the set threshold; The green light is slow flashing, indicating that the light receiving power of the secondary port is higher than the set threshold and now it is working path. The red light is on constantly, indicating that the light receiving power of the secondary port is below the set threshold (alarm); The red light is slow flashing, indicating that the light receiving power of the secondary port is below the set threshold (alarm) and now it is working path.	
Environmental		
Operating Temperature	0 to 45°C (32 to 113° F)	0 to 45°C (32 to 113° F)
Storage Temperature	-40 to 85°C (-40 to 185° F)	-40 to 85°C (-40 to 185° F)

Table 6. Technical Specification of OTDR

Parameter	OTDR08
Optical Specifications	
Operating Wavelength	1501 ± 1nm
Dynamic Range	Up to 30dB
Detection Distance	Up to 80 km
Loss Measurement Accuracy	±0.1dB
Distance Test Accuracy	<20m
Event Dead Zone	<10m
Attenuation Dead Zone	<20m
Maximum Output Optical Power	<17dBm
Sampling Accuracy	0.05~8m
Port	
Connector Type	LC/UPC
Physical Specifications	
Housing	Occupies 1 Slot in D7000-CH2U Chassis
Dimensions	1.67"x4.20"x10.39" (42.3x106.8x264mm)
Weight	0.91kg
Environmental	
Operating Temperature	0 to 45°C (32 to 113° F)
Storage Temperature	-40 to 85°C (-40 to 185° F)
Visual Indicator	
STAT	Green indicates that the device is powered on and in a normal state; Solid red indicates that the device is reporting critical alarms; Flash red indicates that the device is reporting major alarms; Solid orange indicates that the device is reporting minor alarms; The light is not on, indicating that the device is not powered on.

Table 7. Technical Specification of OCM

Parameter	OCM08
Optical Specifications	
Operating Wavelength	1528nm~1568nm
Channel Spacing	50/100GHz
Measure Power with Absolute Accuracy	≤0.8dB
Measure Power Relative Accuracy	±0.5dB
Optical Power Monitoring Scope	-45~-10dBm
Power Resolution	0.1dB
Center Wavelength Detection Accuracy	±0.05nm
Center Wavelength Resolution	0.02nm
Power Consumption	10W
PDL	<0.5dB
Port	
Connector Type	LC/UPC
Physical Specifications	
Housing	Occupies 1 Slot in D7000-CH2U Chassis
Dimensions	1.67"x4.20"x10.39" (42.3x106.8x264mm)
Weight	1.0kg
Environmental	
Operating Temperature	0 to 45° C (32 to 113° F)
Storage Temperature	-40 to 85° C (-40 to 185° F)
Visual Indicator	
STAT	Green indicates that the device is powered on and in a normal state; Solid red indicates that the device is reporting critical alarms; Flash red indicates that the device is reporting major alarms; Solid orange indicates that the device is reporting minor alarms; The light is not on, indicating that the device is not powered on.

Table 8. Technical Specification of ROADM

Parameter	ROADM-09T
Optical Specifications	
Operation Wavelength	1528~1567.5nm (191.35~196.10THz)
Number of Channels	9
Channel Spacing	N*6.25 (N=8, 12, 16)
Channel Passband	39.5nm (1528~1567.5)
Optical Power	A/D1-9 IN: -20~15dBm A/D 1-9 OUT: -8~16dBm LINE IN: -35~-1dBm LINE OUT: -2~21.5dBm
Passband Ripple	<1.5dB
Monitor Accuracy	-0.5~0.5dB
Monitor Resolution	0.1dB
Insertion Loss	LINE IN->A/D OUT: ≤10dB (5 typical) A/D IN->LINE OUT: ≤10dB (5 typical) (+1% MON): ≤23dB
Return loss	≥45dB
Adjacent Channel Isolation	>25dB
Non-adjacent Channel Isolation	>30dB
Polarization Dependent Loss	≤1.5dB
Technology	WSS
Port	
Connector Type	LC/UPC

Parameter	ROADM-09T
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Physical Specifications

Power Consumption	60W
Housing	Occupies 2 Slots in D7000-CH2U Chassis
Weight	2.43kg
Dimensions (HxWxD)	1.67"x8.42"x10.39" (42.3x213.9x264mm)

Visual Indicator

STAT	<p>Green indicates that the device is powered on and in a normal state; Solid red indicates that the device is reporting critical alarms; Flash red indicates that the device is reporting major alarms; Solid orange indicates that the device is reporting minor alarms; The light is not on, indicating that the device is not powered on.</p>
LINE	<p>Solid green indicates that there is input light and is within normal range and no alarm on port; Solid yellow indicates that there is input light, but it is not within the normal range, or there are major/minor alarms on port; Solid red indicates that there is no input light, or there is critical alarm on port.</p>

Environmental

Operating Temperature	0 to 45°C (32 to 113° F)
Storage Temperature	-40 to 85°C (-40to 185° F)

Table 9. Technical Specification of OADM

Parameter	TFF04
Optical Specifications	
Number of Channels	4
Wavelength Range	C16-C59
Channel Spacing	100GHz (0.8nm)
Channel Passband	$\pm 0.11\text{nm}$
Insertion Loss (ExpRx to LineTx)	$\leq 3.0\text{dB}$
Insertion Loss (LineRx to ExpTx)	$\leq 2.0\text{dB}$
Insertion Loss (CnRx to LineTx)	$\leq 2.0\text{dB}$ (n=16~19, 20~23, 25~28, 29~32, 34~37, 38~41, 43~46, 47~50, 52~55, 56~59)
Insertion Loss (LineRx to CnTx)	$\leq 3.0\text{dB}$ (n=16~19, 20~23, 25~28, 29~32, 34~37, 38~41, 43~46, 47~50, 52~55, 56~59)
3dB Spectral Width	$> 75\text{GHz}$
Adjacent Channel Isolation	$> 10\text{dB}$
Non-adjacent Channel Isolation	$> 30\text{dB}$
Co-frequency Isolation	$> 30\text{dB}$
Technology	TFF (Thin Film Filter)
Port	
Connector Type	LC/UPC
Physical Specifications	
Housing	Occupies 1 Slot in D7000-CH2U Chassis
Weight	0.80kg
Dimensions (HxWxD)	1.67"x4.20"x10.39" (42.3x106.8x264mm)

Parameter	TFFO4
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Visual Indicator

STAT	<p>Green indicates that the device is powered on and in a normal state; Solid red indicates that the device is reporting critical alarms; Flash red indicates that the device is reporting major alarms; Solid yellow indicates that the device is reporting minor alarms; The light is not on, indicating that the device is not powered on.</p>
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SIG/EXP/ADn	<p>Solid green indicates that there is input light and is within normal range and no alarm on port; Solid red indicates that there is input light, but it is not within the normal range, or there are major/minor alarms on port; The light is not on, indicating that there is no input light, or there is critical alarm on port.</p>
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Environmental

Operating Temperature	0 to 40° C (32 to 104° F)
Storage Temperature	-40 to 70° C (-40 to 158° F)

Ordering Information

FS P/N	Product Description
Chassis	
D7000-CH2U	D7000-CH2U, 8 Slots 2U Stackable Unloaded Chassis, Support Single-wavelength 200G/400G, Up to 3.2Tbps Capacity, Redundant AC PSUs, Support SDN Network Management
D7000-CH2U	D7000-CH2U, 8 Slots 2U Stackable Unloaded Chassis, Support Single-wavelength 200G/400G, Up to 3.2Tbps Capacity, Redundant DC PSUs, Support SDN Network Management
Muxponder	
4MC4	D7000 4MC4, 1 x 400G QSFP-DD or 4 x 100G QSFP28 to 1 x 400G CFP2 Muxponder for D7000 Managed Chassis
2MC2	D7000 2MC2, 2 x 100G QSFP28 to 1x 200G CFP2 Muxponder for D7000 Managed Chassis
11MC2	D7000 11MC2, 1 x 100G QSFP28+10x 10G SFP+ to 1x 200G CFP2 Muxponder for D7000 Managed Chassis
20MC2	D7000 20MC2, 20 x 10G SFP+ to 1 x 200G CFP2 Muxponder for D7000 Managed Chassis
EDFA	
OA1825	D7000 OA1825, DWDM EDFA Bidirectional Amplifier with PA 15~25dB and BA 8~18dB Gain , 21.5dBm Output for D7000 Series Managed Chassis, with Built in OSC, VOA
OA1835	D7000 OA1835, DWDM EDFA Bidirectional Amplifier with PA 22~35dB and BA 8~18dB Gain , 21.5dBm Output for D7000 Series Managed Chassis, with Built in OSC, VOA
OLA2525	D7000 OLA2525, DWDM EDFA In-line Amplifier with Dual LA 15~25dB Gain, 21.5dBm Output for D7000 Series Managed Chassis, with Built in OSC, VOA
Raman Amplifier	
PDRA5014	D7000 PDRA5014 Counter-propagating Distributed Raman Amplifier with 14dB Gain, 80 Wavelengths, Dual AC PSUs, 1U Rack Mount
BDRA5008	D7000 BDRA5008 Co-propagating Distributed Raman Amplifier with 8dB Gain, 80 Wavelengths, Dual AC PSUs, 1U Rack Mount
DRA5000	Customized Distributed Raman Amplifier, Dual AC/DC PSUs, 1U Rack Mount
MUX&DEMUX	
OMD48ECM	OMD48ECM, 48 Channels 100GHz C14-C61 Passive, Dual Fiber DWDM Mux and Demux with Monitor Port, LC/UPC, 1U Rack

Ordering Information

FS P/N	Product Description
OLP	
OPB2-I	D7000 OPB2-I, 1+1 Optical Protection Switch for D7000 Managed Chassis, with Built in 2 Protection Groups
OPB2	D7000 OPB2, 1+1 Optical Protection Switch for D7000 Managed Chassis
OTDR	
OTDR08	D7000, OTDR08, 8 Channels 1501nm Optical Time Domain Reflectometer (OTDR) for D7000 Series Managed Chassis
OCM	
OCM08	D7000 OCM08, 8 Channels 1528~1568nm Optical Channel Monitor (OCM) for D7000 Series Managed Chassis
ROADM & OADM	
ROADM-09T	D7000 ROADM-09T, 9-degree CDCF Pluggable ROADM for D7000 Managed Chassis, Featuring WSS Technology
TFF04	Customized 4CH Dual Fiber DWDM OADM for D7000 Series Managed Chassis
Accessories	
D7000-PSU-AC	Hot-swappable AC Power Module 1300W for D7000 Series Managed Chassis
D7000-PSU-DC	Hot-swappable DC Power Module 1000W for D7000 Series Managed Chassis
D7000-FAN	Hot-swappable Fan Module, Front-to-Back Airflow through the D7000 Series Managed Chassis
D7000-AUX	D7000-AUX, Interface Module for D7000 Series Managed Chassis, 4 x RJ45 Ports
D7000-EMU	D7000-EMU, Console for D7000 Series Managed Chassis
D7000-FILLER	D7000-FILLER, Port Filler for D7000 Series Managed Chassis
CFP2-DCO-400G-D	400G DWDM Tunable Coherent CFP2 DCO 80km DOM Duplex LC SMF Transceiver Module For Transmission, Used with D7000 Series
CFP2-DCO-200G-D	200G DWDM Tunable Coherent CFP2 DCO 80km DOM Duplex LC SMF Transceiver Module For Transmission, Used with D7000 Series
AmpCon™-T Network Management	
LIS-AMPCON-T-F	AmpCon™-T Management Platform for FS OTN Devices, Includes Visual Monitoring, Centralized Management and Intelligent Analysis

| Additional Information

For more information about the D7000 Series, contact your account manager or visit https://www.fs.com/search_result?keyword=D7000

| Document History

New or revised topic	Described in	Date
Updates to FS D7000 Series Data Sheet	Updated all	9/10/2024



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