

FE GE Chassis-Based Access Platform OA2000

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Overview















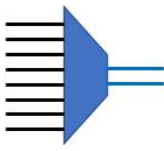



The OnAccess2000 is a high performance, cost effective, carrier grade manageable media converter platform that offers a full range of solutions for service provider and enterprise, including high density FE/GE connectivity, distance extension, fiber modem, fiber multiplexer and media converter. It is a fully modular product series that integrates a wide range of optical transport modules. Available in stand-alone, modular chassis-based, the media converter modules offer copper to fiber and fiber to fiber media conversion, lambdas conversion, specific reaches, automatic fiber protection switching is optional. With industry advanced features such as auto-negotiation, auto-MDI/X, link fault pass-through (LFP) or remote fault detection (RFD), and dying gasp alarm make more efficient troubleshooting and less on-site maintenance.

Chassis Overview:

Model	Num of Slot	Slot for NMC	Slot for LC (line card)	Slot for PWR	Slot for FAN	Product
OnAccess2000-CF	20	1	15	2	2	
OnAccess2000-1CH	1	0	1	N/A	N/A	
OnAccess2000-2CH	1	0	1	N/A	N/A	
OnAccess2200-2S	2	1	1	N/A	N/A	

OnAccess2200-3S	3	1	2	N/A	N/A	
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Line Card Overview:

Model	Description	Function	Product
OnAccess2200-NMC	<ul style="list-style-type: none"> - Embedded software on the NMC - Supports CLI based, Web-based and SNMP management options 		
OnAccess2201-SFP	<ul style="list-style-type: none"> - 1*10/100Base-TX RJ-45 port - 1*100Base-FX SFP port - FE Media Converter 		
OnAccess2202F	<ul style="list-style-type: none"> - 2 * 100Base-FX SFP ports - LAN SFP port support copper SFP - FE Media Converter 		
OnAccess2202	<ul style="list-style-type: none"> - 2 * 1000Base-X SFP ports - LAN SFP port support copper SFP and can be set 10/100/1000 speed - GE Media Converter 		
OnAccess2203	<ul style="list-style-type: none"> - 3 * 1000Base-X SFP ports, with APS function - Switch-over time < 50ms - LAN SFP port support copper SFP and can be set 10/100/1000 speed - GE Media Converter with APS 		
OnAccess2211	<ul style="list-style-type: none"> - 1*10/100/1000Base-TX RJ-45 port - 1* 1000Base-X SFP port - GE Media Converter 		
OnAccess2008	<ul style="list-style-type: none"> - 8*10/100Base-TX RJ-45 port - 2* 1000Base-X SFP ports, with APS function - Switch-over time < 50ms - GE Multiplexer 		
OnAccess2200-OP-D	<ul style="list-style-type: none"> - 3* dual-fiber LC - 1+1 protection - Switch-over time < 20ms - Intelligent optical line protection 		

Chassis and line card compatibility matrix:

Model	OnAccess2000-CF-AA/DD/AD	OnAccess 2000-1CH	OnAccess 2000-2CH	OnAccess 2200-2S	OnAccess 2200-3S
OnAccess2200-NMC	✓	✗	✗	✓	✓

OnAccess2201-SFP	✓		✗		✓
OnAccess2202	✓		✗		✓
OnAccess2202F	✓	✓	✗	✓	✓
OnAccess2203	✓		✗		✓
OnAccess2211	✓		✗		✓
OnAccess2008	✓	✗	✓	✗	✗
OnAccess2200-OP-D	✓	✓	✗	✓	✓

Advantages

- Compliance with Carrier Grade Standards, all the features of a carrier class
- Flexible mix of services from 10Mb to 1000M, distance extension, Ethernet demarcation, media converter and multiplexer
- Centralized management via NMC, telnet, web, console, SNMP and EMS/NMS solutions, simple to Install, configuration and maintenance
- Redundant design for AC/DC PSU and FAN unit
- PSU, FAN, network management card and line cards are hot swappable, allowing online field replacement
- Pay-as-you grow architecture, scalable, flexible for future growth
- All products are green technology with low power consumption compliant with international standards
- Web based, 3rd party SNMP and EMS/NMS management solutions
- No extra licensing or server cost

Product Highlights

- 2U 19" 20-slot chassis with 1 slot for Network Management Card (NMC), 15 slots for line cards, 2 slots for power modules and 2 slots for fan modules
- 2-slot mini chassis with 1 slot for Network Management Card (NMC) and 1 slot for line card
- 3-slot mini chassis with 1 slot for Network Management Card (NMC) and 2 slots for line card
- 1-slot high or 2-slot high chassis for 1pcs line card
- Single fiber to dual fibers conversion, multi-mode fiber to single mode fiber conversion
- Variety SFP options for 100Base-FX and 1000Base-X with SFP internal ID and status monitoring capability
- Non-blocking store-and-forward architecture enables the forwarding rate to proceed at a full wire speed
- 802.3x flow control for a full-duplex mode and collision-based backpressure for a half-duplex mode
- Egress/Ingress rate management control with 1/5/50 Mbps granularity
- Automatic link switchover protection within 50ms for active SFP protection links or within 10ms for passive fiber protection links
- Support Remote Fault Detection (RFD) or Link fault pass-through (LFP) function

- Remote power on/off detection with dying gasp alarm and dual power supplies
- Remote loopback capability for link integrity test
- Dual power supply chassis of load sharing or 1 + 1 automatic over features with over-voltage / under-voltage alarms
- Dual fan chassis with monitoring and alarm features.
- Standard 19-inch rack mounted

Network Applications

- **Application: FE/GE Media Converter**

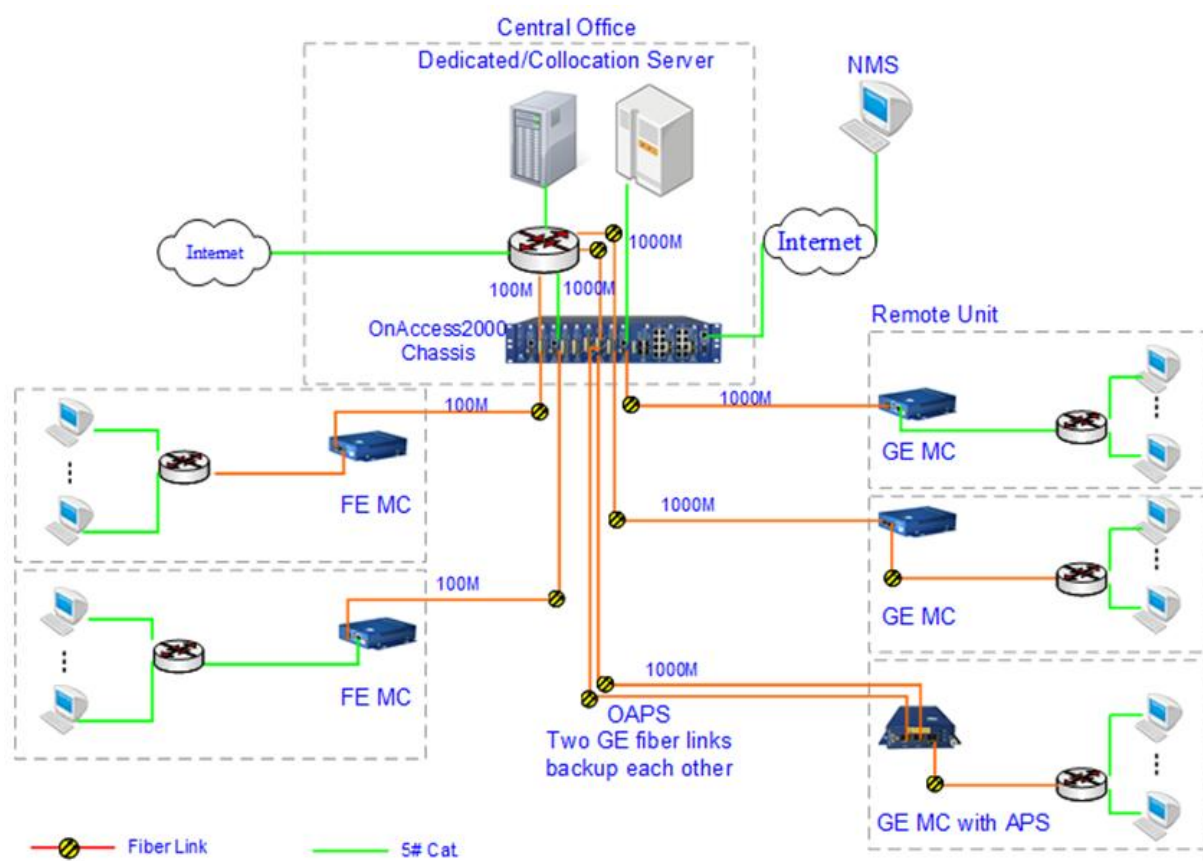
Function & Features:

- Ethernet demarcation, separate customer network from operator network
- Media conversion (copper/fiber, MM/SM, dual fiber / single fiber)
- Flex bandwidth control, effective ROI
- In-band management capabilities and remote performance monitoring
- E2E(End to End) hard pipe – fine granularity
- Security – physical layer traffic isolation
- QoS – Guaranteed bandwidth, no packet loss
- Transparent - Unaware to all upper service

Related Products:

OnAccess2201-SFP, OnAccess2211, OnAccess2202F, OnAccess2202, OnAccess2203

Network Schematic:



- **Application: 8xFE Multiplex to GE with Protection (Active Mux/Demux)**

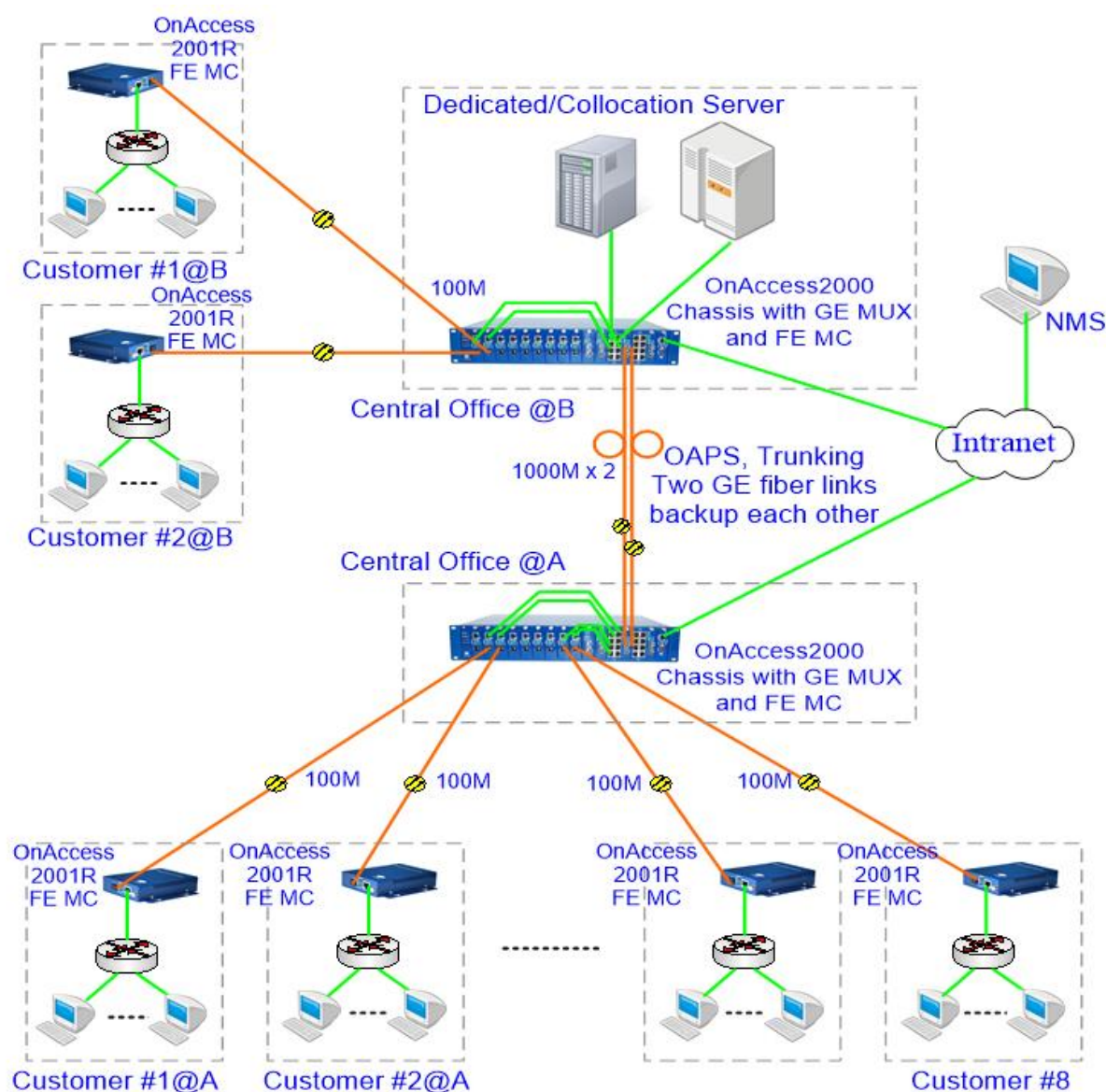
Function & Features:

- Expanding fiber capacity, saving fiber resources, lower price than passive WDM solution
- Transport 8 separate L1-like Fast Ethernet streams into two GE SFP based trunk port
- Truly isolated and transparent without any VLAN and MAC address limitation between customers
- Protected high reliable fiber links using
- Protection switch-over time <50ms

Related Products:

OnAccess2008

Network Schematic:



- **Application: Optical Line Protection**

Function & Features:

- 1+1 protection to any point-to-point single or dual fiber optic transmission links
- Fast switching time of less than 20ms
- Hot-swappable with dying gasp alarm
- Path latching feature even in case of power failure
- Configurable switch-over optical power threshold
- Three programmable switch mode options: revertive, non-revertive and manual

Related Products:

OnAccess2200-OP-D

Network Schematic:

1. Transponder Protection



2. Transponder and Route Protection



3. Route Protection in Ring Networks



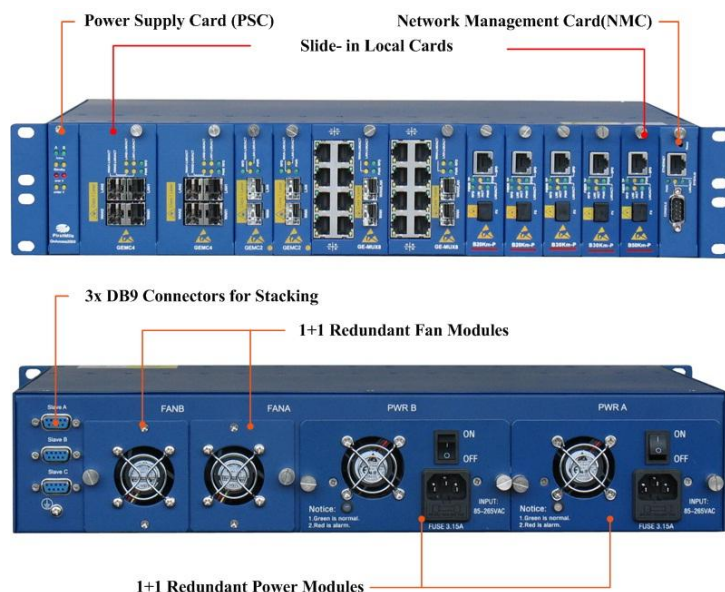
4. Route Protection after MUX/DEMUX



OA2000 Chassis Detail

	Model	Description
Chassis	OnAccess2000-CF-AA/DD/AD	<ul style="list-style-type: none"> - Standard 19-inch 2U 20-Slot rack mounted - Support dual hot-swappable power supplies (AC/DC) - 1 slot for NMC, 15 slots for line card - 1 power supply card included - 2 slots for FAN module, fan module included - 2 slots for Power module, power module included - -AA includes two AC Power module, 90~264VAC/1.2A max - -DD includes two DC Power module, -36 ~ -72VDC/2.0A - -AD includes one AC Power module (90~264VAC/1.2A max) plus one DC Power module (-36 ~ -72VDC/2.0A)
	OnAccess2200-2S	<ul style="list-style-type: none"> - Wall mount - Support dual power adaptor input, 12VDC - Support dual 48VDC power supply (built-in power) - Fanless - 1 slot for NMC, 1 slot for Line Card
	OnAccess2200-3S	<ul style="list-style-type: none"> - Wall mount - Support dual power adaptor input, 12VDC - Support dual 48VDC power supply (built-in power) - 1 built-in FAN - 1 slot for NMC, 2 slot for Line Card
	OnAccess2000-1CH	<ul style="list-style-type: none"> - Wall mount - Support dual power adaptor input, 12VDC - Fanless - 1 slot for Line Card
	OnAccess2000-2CH	<ul style="list-style-type: none"> - Wall mount - Support dual power adaptor input, 12VDC - Fanless - 1 slot for Line Card (2 slot high line card)
Power Module	AC-DC Adapter	<ul style="list-style-type: none"> - AC-DC Adapter for OnAccess2200-2S and OnAccess2200-3S and OnAccess2000-1CH and OnAccess2000-2CH chassis - 100 ~ 220 VAC-12VDC
	OnAccess2000-AC	<ul style="list-style-type: none"> - AC power module for OnAccess2000-CF chassis - 90~264VAC/1.2A max
	OnAccess2000-DC	<ul style="list-style-type: none"> - DC power module for OnAccess2000-CF chassis - -36 ~ -72VDC/2.0A
FAN Module	OnAccess2000-FAN	<ul style="list-style-type: none"> - Used for OnAccess2000-CF chassis

2U Chassis - OnAccess2000-CF-AA/DD/AD Specification



NMC slot	Number of Units	1
Line card slot	Number of Units	15
Power Supply	Number of Units	2
	Redundancy	Single or dual feeding, pluggable Support dual AC, dual DC or one AC + one DC
	AC Source	100~240VAC, 50/60Hz, 1.2A maximum
	DC Source	-36~-72VDC, 2.0A maximum
	Protective Earthing Conductor	12 AWG minimum
FANS	Maintenance	Replaceable and hot pluggable
	Redundancy	Single or dual FAN module Support single fan failure alarm Two fans can be swapped to each other
	Air flow direction	from front to rear
Physical Dimensions	Height	89.6mm (2U)
	Width	440mm
	Depth	312mm
	Weight	9Kg
	Mounting options	19'', 23'', ETSI rack mountable
Environment	Operating temperature	0°C ~ 65°C
	Storage temperature	-25°C ~ 85°C
	Humidity	5% ~ 95% RH Non-condensing
Power consumption	<86 watts or 300 Btu for the fully loaded chassis	

2/3-Slot Chassis - OnAccess2200-2S/3S Specification



OnAccess2200-2S

OnAccess2200-3S

NMC slot	Number of Units	1
Line card slot	Number of Units	1 or 2
Power Supply	Number of Units	4 (Support dual AC and dual DC)
	Redundancy	Single or dual feeding
	AC Source	12VDC AC-DC power adapter
	DC Source	Built-in 48VDC/1A power supply
FANs	Number	Fanless for OnAccess2200-2S 1 built-in fan for OnAccess2200-3S
	Air flow direction	from left to right
Physical Dimensions	Width* Depth*Height	OnAccess2200-2S: 91mm*153mm*54.5mm OnAccess2200-3S: 116mm*153mm*80mm
	Weight	OnAccess2200-2S: 1KG OnAccess2200-3S: 1.2KG
	Mounting options	Wall mount or desktop
Environment	Operating temperature	0°C ~ 65°C
	Storage temperature	-25°C ~ 85°C
	Humidity	5% ~ 95% RH Non-condensing
Power consumption		OnAccess2200-2S: <16W OnAccess2200-3S: <20W

1 Slot Chassis - OnAccess2000-1CH /OnAccess2000-2CH Spec



OnAccess2000-1CH



OnAccess2000-2CH

Line card slot	Number of Units	1
Power Supply	Number of Units	2 (Support dual AC)
	Redundancy	Single or dual feeding
	AC Source	12VDC AC-DC power adapter
Physical Dimensions	Width* Depth*Height	OnAccess2000-1CH: 90mm*125mm*28mm OnAccess2000-2CH: 90mm*125mm*56mm
	Weight	OnAccess2000-1CH: 0.5KG OnAccess2000-2CH: 0.7KG
	Mounting options	Wall mount or desktop
Environment	Operating temperature	0°C ~ 65°C
	Storage temperature	-25°C ~ 85°C
	Humidity	5% ~ 95% RH Non-condensing
Power consumption		OnAccess2000-1CH: <8 Watts or 27 Btu OnAccess2000-2CH: <10 Watts or 34 Btu

Network Management Card (NMC) Specification

The embedded software on the NMC supports command line interface (CLI) based (console, telnet), Web-based and SNMP management options.



Model	Description
OnAccess2200-NMC	<ul style="list-style-type: none"> - Embedded software on the NMC - 1 * 10/100Base-T RJ45 Ethernet management port - 1 * CONSOLE port - Supports CLI based, Web-based and SNMP management options

Specification:

Supervisory and Management Ports	Console Port	Interface: RS-232 Format: Asynchronous Band rate: 57600 bps Word format: 8 bits, no parity, 1 stop bit Flow control: None
	Ethernet Copper Port	Interface: 10/100Base-T Connector: RJ45
Button (RST)	Reset	Press the button and hold for more than 10 seconds, the "IP address" and "User Accounts" of NMC will be reset to factory default setting in further 2 seconds Operate on the RST button will not affect to NMC others configuration and Line card service
System Time	Hardware based Real-Time clock	
Power consumption	<2W	
Environment	Operating temperature	0°C ~ 65°C
	Storage temperature	-25°C ~ 85°C
	Humidity	5% ~ 95% RH Non-condensing
Network Management	Protocols	CLI over RS-232 or telnet Web-based HTTP management SNMP v1, v2c, v3 Syslog SNTP TFTP for file transfer
	Alarms	Current alarms are available, each alarm is time stamped.
	Log	Last 500 logs and audit messages are available, each



log is time stamped.
The logs and audit messages are stored in system log files and won't lose during power failure.

OA2000 Line Card Overview

OA2000 system uses the same plug-in card in both carrier center chassis and the remote converter unit. There are different kinds of plug-in line cards for different applications.

The pictures of all the plug-in line cards are shown as below.



OnAccess2201-SFP



OnAccess2211



OnAccess2202



OnAccess2202F



OnAccess2203



OnAccess2008



OnAccess2200-OP-S



OnAccess2200-OP-D

Category	Model	LAN Port	WAN Port
FE Media Converter	OnAccess2201-SFP	1*10/100BaseT RJ45	1*100Base-FX SFP
	OnAccess2202F	1*100Base-FX SFP	1*100Base-FX SFP
GE Media Converter	OnAccess2211	1*10/100/1000 Base-T RJ45	1*1000Base-X SFP
	OnAccess2202	1*1000Base-X SFP	1*1000Base-X SFP
	OnAccess2203	1*1000Base-X SFP	2*1000Base-X SFP Switch-over time < 50ms
GE Multiplexer	OnAccess2008	8*10/100BaseT RJ45	2*1000Base-X SFP ports with APS function Switch-over time < 50ms
Fiber Optical Switch	OnAccess2200-OP-D	1 * Dual LC	2 * Dual LC Switch-over time < 20ms
	OnAccess2200-OP-S	1 * Single LC	2 * Single LC Switch-over time < 20ms

FE/GE Media Converter Specification

Specification	OnAccess	OnAccess	OnAccess	OnAccess	OnAccess
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		2201-SFP	2202F	2211	2202	2203
Interface	LAN port	1xRJ45	1xSFP	1xRJ45	1xSFP	1xSFP
	WAN port	1xSFP	1xSFP	1xSFP	1xSFP	2xSFP APS
	Data Rates	10/100M	100M	10/100/1000M	1000M	1000M
	Wavelengths	Depends on SFP transceiver				
	Optical Reach	Depends on SFP transceiver				
Power consumption		<4W	<4W	<4W	<4W	<5W
Environment	Operating temperature	0°C ~ 50°C				
	Storage temperature	-25°C ~ 85°C				
	Humidity	5% ~ 95% RH Non-condensing				

Software Features:

Features	Management	In-band	
	Transparent	Unaware to all upper service	
	MTU	9000 Bytes for FE MC 9600 Bytes for GE MC	
	RFD	Support	
	ALS	Support	
	Dying gasp	Support	
	Standalone	Support	
	Bandwidth limit	rate	step
		< 10Mbps	1Mbps
		10~100Mbps	5Mbps
100~1000Mbps		50Mbps	
APS	Only available for OnAccess2203 Switch time <50ms Auto (link down or signal degrade) or Manual Revertive and Non-Revertive		
Diagnosis	IP ping	Support, disable by default.	
	MIB Counter	Support	

OnAccess2008 Specification



Interface	Number of LAN Ports	8*10/100Base-T RJ45
	Number of WAN Ports	2*SFP ports, APS
	Wavelengths	Depends on SFP transceiver
	Optical Reach	Depends on SFP transceiver
	Data Rates	10/100Mbps
Power consumption	6W	
Environment	Operating temperature	0°C ~ 50°C
	Storage temperature	-25°C ~ 85°C
	Humidity	5% ~ 95% RH Non-condensing
Features	Transparent	Unaware to all upper service
	MTU	1632 Bytes
	Per-Port RFD(LFP)	Support
	Per-Port ALS	Support
	Dying gasp	Support
	Per-Port Bandwidth limit	Support
	APS	Switch time <50ms Auto (link down or signal degrade) or Manual Revertive and Non-Revertive
Diagnosis	IP ping	Support, disable by default
	Per-Port MIB Counter	Support, 64-bits counters
	DDM (Digital Diagnostics Monitoring)	Support
Management	In-Band	

OnAccess2200-OP-D Specification



Interface	Number of Ports	3×Transparent dual LC connector
	Wavelengths	1260nm~1620nm
	Connectors	LC Connector
	Insertion loss	TX ≤4.0dB, RX ≤1.5dB
	Return Loss	≥45dB
	Cross-talk:	≤55dB
	Monitoring range of optical power	-32 ~ +3dBm
	Optical power measurement accuracy	≤0.5dB

Power consumption	1W	
Environment	Operating temperature	0°C ~ 50°C
	Storage temperature	-25°C ~ 85°C
	Humidity	5% ~ 95% RH Non-condensing
Features	Management	Out-band
	Transparent	Unaware to all upper service
	MTU	No limit
	APS	Switch time <20ms Auto (link down or signal degrade) or Manual Revertive and Non-Revertive
	Dying gasp	Support

Ordering Information

	Part Number	Description
Chassis	OnAccess2000-CF-AA	Standard 19-inch 2U 20-Slot rack mounted chassis Include 2x FAN module and 2x AC power module
	OnAccess2000-CF-DD	Standard 19-inch 2U 20-Slot rack mounted chassis Include 2x FAN module and 2x DC power module
	OnAccess2000-CF-AD	Standard 19-inch 2U 20-Slot rack mounted chassis Include 2x FAN module and 1x DC power module and 1x AC power module
	OnAccess2000-1CH	1-slot remote card case, include 1x 12V power adapter
	OnAccess2000-2CH	1-slot remote card case, include 1x 12V power adapter
	OnAccess2200-2S	2-slot mini chassis, include 1x 12V power adapter
	OnAccess2200-3S	3-slot mini chassis, include 1x 12V power adapter
Power Module	AC-DC Adapter	AC-DC Adapter for OnAccess2200-2S and OnAccess2200-3S and OnAccess2000-1CH and OnAccess2000-2CH chassis 100 ~ 220 VAC-12VDC 1A/1.5A/2A
	OnAccess2000-AC	AC power module for OnAccess2000-CF chassis 90~264VAC/1.2A max
	OnAccess2000-DC	DC power module for OnAccess2000-CF chassis -36 ~ -72VDC/2.0A
FAN Module	OnAccess2000-FAN	Used for OnAccess2000-CF chassis
Management Card	OnAccess2200-NMC	Suitable for 2U/2S/3S chassis, managing all line cards 1x 10/100Base-T RJ45 Supports CLI based, Web-based and SNMP management options
Line Card	OnAccess2201-SFP	1*10/100BaseT RJ45 1*100Base-FX SFP
	OnAccess2202F	2*100Base-FX SFP
	OnAccess2211	1*10/100/1000 Base-T RJ45

		1*1000Base-X SFP
	OnAccess2202	3*1000Base-X SFP
	OnAccess2203	3*1000Base-X SFP Switch-over time < 50ms
	OnAccess2008	8*10/100BaseT RJ45 2*1000Base-X SFP ports with APS function Switch-over time < 50ms
	OnAccess2200-OP-D	3 * Dual LC fiber, 1+1 protection Switch-over time < 20ms
	OnAccess2200-OP-S	3 * Single LC fiber, 1+1 protection or 1:1 protection Switch-over time < 20ms

Related Products

Please contact sales@firstmile.com.cn for WDM and SFP module information.