

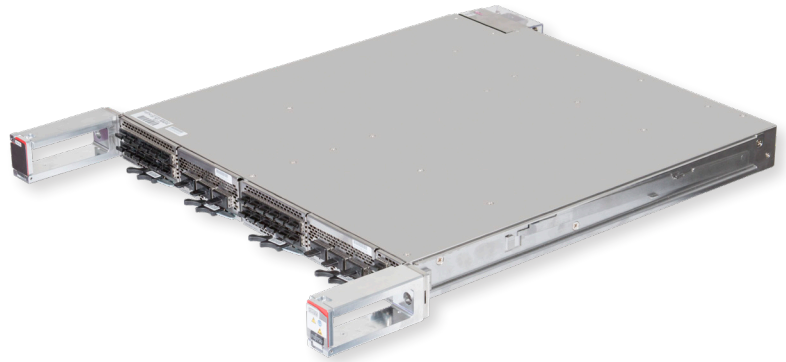
# Data Sheet

## 1 FINITY™ S100

Carrier Ethernet packet optical transport switch for high-density aggregation and transport

### 1 FINITY S100 Blade at a Glance

- High-density packet optical Layer 2 transport
- Modular 1RU blade design
- MEF E-Line, E-LAN, E-Access, and E-Tree topologies
- Switching and aggregation with self-healing from 1 GbE to 200G wavelengths
- SDN-ready along with Virtuora Network Controller support



### Lowering the Cost per Bit

The 1 FINITY S100 Switch is an all-in-one solution offering high-density packet optical MEF Carrier Ethernet operation in a compact 1RU footprint. This carrier-grade platform solves density and space challenges while delivering a variety of deterministic, scalable connectivity services. The S100 supports rates of 1, 10, 25 and 100 GbE with self-healing network ring support. In fiber-challenged applications, the S100's 200G wavelength option provides a twofold capacity enhancement using a single fiber pair facility. Tunable optics on the 100 GbE dense-wave PIU deliver additional savings through direct connection to a 1 FINITY L100 ROADM, eliminating a standalone transponder. Tunable optics are also supported on the 10 GbE/OTU2 interfaces, saving on spare-parts inventory, since each module can be tuned to any of the 96 ITU grid wavelengths. This reduces the need for multiple devices operating at fixed wavelengths.

### Small Footprint, Modular Blade-Based Design

Traditional converged, chassis-based packet optical platforms require a large proprietary chassis footprint that locks the service provider into a long-term investment. This traditional approach has slowed innovation; reduced rack space efficiency and flexibility; and encouraged vendor lock-in. The 1 FINITY S100 packet optical transport switch solves these issues through its modular 1RU design, resulting in maximum pay-as-you-grow flexibility. This modular design offers efficient scaling by installing up to four plug-in modules into the base platform, or by adding a 1RU system as needed. The small, dense form factor allows full utilization of rack space in 1RU increments, and the absence of a large, multi-slot chassis reduces or eliminates the need for rack partitioning.

### Carrier Ethernet Service Delivery

The 1 FINITY S100 is a high-density, compact 1RU platform that can be used for aggregation and switching to deliver MEF-compliant E-Line, E-LAN, E-Access and E-Tree services. The platform consists of 1, 10, 25, and 100 GbE service interfaces using the 1.2 Tbps bidirectional switch fabric over transport facilities up to 200G.

### 1 FINITY: A Revolutionary, Disaggregated Platform

For network operators seeking an open, simple, scalable architecture to meet escalating bandwidth demand, Fujitsu provides 1 FINITY, a revolutionary disaggregated platform that delivers unprecedented flexibility, scalability, and efficiency. Unlike the traditional converged systems other vendors provide, the programmable, blade-centric design of 1 FINITY offers operators a pay-as-you grow approach with low initial investment. Additional benefits include high rack space utilization, evergreen technology design, operational convergence, open pluggable optics, open APIs, and open protocols.

# Efficient 1 GbE, 10 GbE, or 25 GbE to 100 GbE Aggregation over 200G Wavelengths

## Metro Packet Applications

The 1FINITY S100 is ideal for 1 GbE, 10 GbE or 25 GbE to 100 GbE aggregation over 200G wavelengths in mobile backhaul and business services applications. Its scalable blade architecture can be used with other members of the 1FINITY blade family as well as with the FLASHWAVE® 9500 and FLASHWAVE CDS platforms.

## Simplified Network Operations

The 1FINITY S100 blade management options include: Web GUI, CLI scripts, SNMP, and a NETCONF interface using Fujitsu Virtuora® Network Controller (NC) or an equivalent SDN network controller.

The S100 Switch simplifies proactive management operations using ITU-T Y.1731 for real-time performance monitoring without affecting live traffic. Automated facility protection insures high service availability further simplifying Operations. Facility protection options include: ITU-T G.8031 and G.8032 for Ethernet linear and ring protection switching; and IEEE standard 802.3ad link aggregation control protocol (LACP).



Up to 3 × QSFP28 or CFP4  
100 GbE ports

Up to 12 × SFP/SFP+ 1 GbE/10 GbE ports  
Up to 12 × SFP+/SFP28 10 GbE/25 GbE ports  
Up to 12 × SFP+ 10 GbE/OTU2 tunable  
DWDM ports

Up to 1 × CFP2-ACO  
100 GbE/200G (2 × OTU4)  
tunable DWDM ports

# Technical Specifications

<b>Base System Hardware</b>					
System Configuration	1RU blade				
PIU per Blade	4				
Local Management Port (LMP)	None				
Management Port (LCN)	2 × Gigabit Ethernet SFP (T, SX, LX, EX, ZX)				
Front LEDs	System Status, Severity, Port				
Fans	3 hot-swappable fan units, alarm monitored				
Power Supply	Dual-feed fixed DC power supply				
Software OS	Linux				
<b>Service Ports</b>					
	<b>1 GbE/ 10 GbE</b>	<b>10 GbE/ 25 GbE</b>	<b>10 GbE/ OTU2</b>	<b>100 GbE</b>	<b>100 GbE/ 200G DWDM</b>
Service Ports per Blade	12 per PIU	12 per PIU	12 per PIU	3 per PIU	1 per PIU
Optical/ Electrical Interface	SFP/SFP+	SFP+/SFP28	SFP+	QSFP28 or CFP4	CFP2-ACO
Supported Interfaces	SX, LX, EX, ZX, SR, LR, ER, ZR, CWDM	SFP: SR, ER, ZR, BR40, CWDM SFP+: SR, LR, BR	SR, LR, ER, ZR, Tunable DWDM	QSFP28: SR4, ER4, LR4 CPF4: SR4, ER4, LR4	TUNABLE DWDM
<b>Performance Monitoring</b>					
Service PMs	24-hour, 15-minute, and 5-minute bins				
Thresholds and TCA	Support (user assignable)				
Ethernet SLA PMs (Y.1731)	<ul style="list-style-type: none"> <li>• Frame delay</li> <li>• Delay variation</li> <li>• Loss ratio</li> </ul>				
Ethernet Port PMs	<ul style="list-style-type: none"> <li>• Rx, Tx and error statistics</li> <li>• Input and output rate per port</li> <li>• Input and output utilization per port</li> </ul>				
<b>Management</b>					
Virtuora NC	Yes				
Web GUI	Yes				
CLI	Yes				
NETCONF/YANG	Yes				
SNMP V2	Yes				
SSH, SFTP, FTP, Telnet, HTTP, HTTPS	Yes				
Timing	NTP				
In-Band Management	MVLAN				
IPv4/IPv6	Proxy ARP, NDP Proxy				
OSMINE Support	CLEI				
<b>Physical Characteristics</b>					
Dimensions H × W × D	1.75 × 19 × 17.7" (45 × 483 × 450 mm) W = 19" or 23" with mounting rails D < 600 mm with fiber management				
Rack Compatibility	19 and 23", 2- and 4-post				
Weight	Blade: 16.71 lbs (7.58 kg)				
<b>Operating Environment</b>					
Operating Temperature	5 to 40 °C				
Operating Humidity	5 to 85%				
<b>Power</b>					
Power Supply	Dual-feed, fixed DC power supply				
-48 V DC	-40 V DC to -57 V DC				
Power Consumption	700 W				
<b>Regulatory/Compliance</b>					
FCC	FCC Part 15, Class A				
NEBS	NEBS Level 3				
UL and CB Safety	UL60950-1 & IEC60950-1				
CE	CE				
ROHS	ROHS 10				
CISPR	CISPR 24 & CISPR 32				
ETSI	EN 300-019, EN 300-132, EN 300-753, EN 300-386				
WEEE	WEEE				
RCM	RCM				
CDRH	FDA CDRH				
<b>Ethernet Switching</b>					
Switch Fabric	1.2 Tbps				
MAC Address Table	<ul style="list-style-type: none"> <li>• 750 K table entries</li> <li>• Enable/disable learning per port</li> </ul>				
Jumbo Frames	9608 bytes				
VLAN Tagging 802.1Q	4094 C-VLANs				
Provider Bridging 802.1ad	4094 S-VLANs				
Tagging	<ul style="list-style-type: none"> <li>• CVLAN translation</li> <li>• Double tagging</li> <li>• Tagging, de-tagging, swapping</li> <li>• Virtual untagged</li> </ul>				

# Technical Specifications

## Traffic QoS

Priority Queues	8 queues per port/4 queues per flow
Traffic Classification	<ul style="list-style-type: none"> <li>• IEEE 802.1Q, Port, VLAN, ToS, DSCP</li> <li>• CIR/CBS and PIR/PBS</li> <li>• 2-rate, 3-color (2R3C)</li> </ul>
Bandwidth Meters	<ul style="list-style-type: none"> <li>• Bandwidth profiles</li> <li>• Ingress and egress filters</li> <li>• Per service in 1 Mbps increments</li> </ul>

## Ethernet OAM

Fault Management	<ul style="list-style-type: none"> <li>• IEEE 802.1ag, CFM, ITU-T Y.1731</li> <li>• Loopback and link trace</li> <li>• Ethernet fault propagation shutdown</li> </ul>
Loopbacks	<ul style="list-style-type: none"> <li>• Station loopback</li> <li>• Loopback based on L2 and L3 filter</li> <li>• MAC address swap for RFC 2544</li> </ul>
Topology Discovery	LLDP

## Ethernet Services

E-Line/E-LAN	Yes
E-LAN MEF CE 2.0	Yes
E-Line MEF CE 2.0	Yes
E-Tree	Yes
E-Access	Yes

## Network Protection

Ethernet Protection	<ul style="list-style-type: none"> <li>• &lt;50 ms protection switching</li> <li>• 3.3 ms CCMs in hardware</li> <li>• Nonrevertive/revertive</li> <li>• ITU-T G.8031</li> <li>• ITU-T G.8032</li> <li>• Multiple instances/laddered rings</li> </ul>
Link Aggregation	<ul style="list-style-type: none"> <li>• 0:N LAG N&lt;=16</li> <li>• 1+1 LAG</li> <li>• LAG over G.8032</li> <li>• MC-LAG</li> </ul>

## Security

- L2 loop monitoring
- L2 loop protocol
- Filtering

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