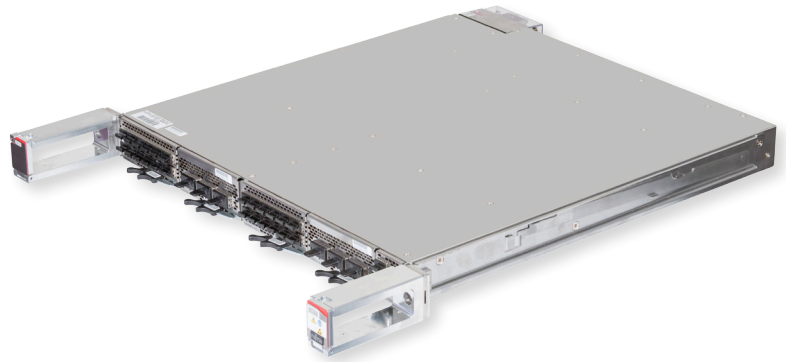# FUJITSU

Data Sheet
1FINITY™ S100 Switch

Layer 2 switch delivers dense Ethernet aggregation

S100 Blade at a Glance
- Modular 1RU blade design
- 1.2 Tbps switching capacity
- Four front-access slots for several combinations:
  - 12 × SFP+ 10 GbE/OTU2
  - 3 × CPF4 100 GbE
  - 12 × SFP+ 1 GbE/10 GbE
  - 1 × 100G NBO CFP2-ACO*
- Web-based GUI, CLI scripts, or NETCONF API

Product Overview
The 1FINITY S100 Layer 2 switch is a compact, carrier-grade platform that delivers dense 1 GbE or 10 GbE to 100 GbE aggregation in a 1RU blade. The S100 solves space and power challenges, delivers high-performance scalable services, and reduces operating costs.

Solving the Problems of Convergence
Optical and switching technologies are advancing rapidly, and new platforms often integrate the two. In recent years, vendors have created sophisticated, converged, chassis-based platforms. This approach has been successful, but it has also inflated initial costs; slowed innovation; reduced space efficiency and physical flexibility; and encouraged vendor lock-in.

Solutions to these problems can be found in a modular, disaggregated product that employs pluggable elements. One of these is the 1FINITY™ S100 Switch, an innovative, modular Layer 2 switch that combines high density and simplicity.

Modular Blade-Based Design
The modular design results in maximum pay-as-you-grow flexibility. This design offers efficient scaling by adding additional 1RU systems as needed. The small, dense form factor allows full utilization of rack space in 1RU increments, and the absence of a large, multislot chassis eliminates the need for rack partitioning.

Operationally, the 1FINITY architecture is as close as possible to zero intercept–with no chassis, there is zero space and zero cost prior to initial service. The modular design enhances availability by minimizing Mean Time To Repair(MTTR), since most sources of failure can be quickly repaired. Additionally, the blade-based design is future-proof and evergreen; users can upgrade modules as new technology becomes available. Finally, with support for open optics, purchases can be made from Fujitsu or directly from third-party vendors.

1FINITY: A Revolutionary, Disaggregated Platform
For network operators seeking an open, simple, scalable architecture to meet escalating bandwidth demand, Fujitsu provides 1FINITY, 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 1FINITY 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 or 10 GbE to 100 GbE Aggregation

Layer 2 Switching

The 1FINITY S100 Switch is a modular Ethernet switching platform ideal for networks that require 1 GbE or 10 GbE to 100 GbE aggregation for Carrier Ethernet 2.0–compliant E-Line services. The 1RU blade provides 1.2 Tbps bidirectional switching with four Plug-In Units (PIUs). The S100 blade supports 12 × SFP+ 10 GbE/OTU2, 3 × CPF4 100 GbE, 12 × SFP+ 1 GbE/10 GbE, or 1 × 100G NBO CFP2-ACO*.

The S100 simplifies operation with ITU-T Y.1731 for performance monitoring, ITU-T G.8031, and G.8032 for sub-50 millisecond Ethernet linear and ring protection switching, in addition to link aggregation for facility protection.

Metro to Long-Haul Applications

The scalable blade architecture of the 1FINITY S100 can be used with existing FLASHWAVE® 9500 and FLASHWAVE CDS deployments and with the 1FINITY Transport blade family. The combination of an S100 and a DWDM optical transport device like the FLASHWAVE 9500 can efficiently transport 10 GbE and 100 GbE services on 100G optical lambdas. For long-haul transport up to 200G per lambda, the S100 can be teamed with the FLASHWAVE 9500 and the 1FINITY T200 blade. For dense metro DCI applications requiring up to 200G per lambda transport, the S100 can be deployed with the 1FINITY T100 blade.

Simplified Network Operations

The 1FINITY S100 blade has a Linux-based operating system and can be managed with a Web-based GUI, CLI scripts, or the NETCONF API. The GUI or CLI script can provision various service options. The NETCONF management API makes it easy to use the 1FINITY S100 with SDN network controllers, including Fujitsu Virtuora® Network Controller (NC).

×

| Up to 3 × CFP4 100 GbE ports | Up to 12 × SFP+ 10 GbE/OTU2 ports | Up to 12 × SFP+ 1 GbE/10GbE ports | Up to 1 × CFP2-ACO 100 GbE DWDM port |

Technical Specifications

Base System Hardware

System Configuration	Modular 1RU blade
PIU/FRU 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
Fan	Hot swappable fan unit 3 fans, alarm monitored
Power Supply	Dual fixed DC power supplies
Software OS	Linux

Service Ports

	10 GbE/ OTU2	100 GbE	100 GbE DWDM*	1 GbE/ 10 GbE
Service Ports per Blade/PIU	12 × 10 GbE/OTU2 per PIU	3 × 100 GbE per PIU	1 × 100 GbE DWDM per PIU	12 × 1 GbE/ 10 GbE per PIU
Optical/Electrical Interface	SFP+	CFP4	CFP2-ACO	SFP/SFP+
Supported Interfaces	SR, ER, LR, ZR, DWDM	SR4, LR4, ERL, ERL, ER4	TBD	SX, LX, EX, ZX, SR, ER, LR, ZR, CWDM (Ethernet Only)

Performance Monitoring

Service PMs	24-hour, 15-minute, and 5-minute bins for PMs
Thresholds and TCA	Support (user assignable)
Ethernet SLA PMs (Y.1731)	• Frame delay • Delay variation • Loss ratio
Ethernet Port PMs	• Rx, Tx and error statistics • Input and output rate per port • Input and output utilization per port

Management

Virtuora NC	Yes
Web GUI	Yes
CLI	Yes
NETCONF/YANG	Yes
SNMP	SNMPv2
NTP, SNTP, Telnet, and FTP	Telnet, FTP and SFTP, NTP
In-Band Management	MVLAN
OSMINE Support	CLEI

Physical Characteristics

Dimensions H × W × D	1.75 × 19 × 17.72″ (44.45 × 483 × 450 mm) W = 19″ or 23″ with mounting rails D<600 mm with fiber management
Rack Compatibility	19 and 23″
Weight	S100 blade: 7.58 kg (16.711 lbs) 12 × SFP+ PIU: 0.609 kg (1.343 lbs) 3 × CFP4 PIU: 0.603 kg (1.329 lbs) Fan: 0.380 kg (0.838 lb)

Operating Environment

Operating Temperature	5 to +40 ℃
Short Term Temperature	−5 to +50 ℃
Humidity, Normal Operating	5 to 85% noncondensing
Humidity, Short Term	5 to 93% noncondensing

Power

Power Supply	Dual fixed power supplies
120 V AC	No
−48 V DC	−40 V DC to −57 V DC
Power Consumption	700 W (typical)

Regulatory and Compliance

FCC	FCC Part 15, Class A
NEBS	NEBS Level 3
UL/CSA	UL/CSA 60950-1
CE	CE
ROHS	ROHS
IEC/EN	IEC/EN 60825-1, 60825-2
WEEE	WEEE
RCM	RCM
CDRH	FDQ CDRH

Technical Specifications

Ethernet Switching

Switching Fabric	1.2 Tbps
Packets per Second	1.44 Gbps
MAC Address Table	• 750 K table entries • Enable/diable learning per port
Jumbo Frames	9608 bytes
VLAN Tagging 802.1Q	4094 C-VLANs
Provider Bridging 802.1ad	4094 S-VLANs
Tagging	• CVLAN translation • Double tagging • Tagging, de-tagging, swapping • Virtual untagged

Traffic QoS

Priority Queues	8 queues per port/4 queues per flow
Traffic Classification	• IEEE 802.1Q, Port, VLAN, ToS, DSCP • CIR/CBS and PIR/PBS • 2-rate, 3-color (2R3C)
Bandwidth Meters	• Bandwidth profiles • Ingress and egress filters • Per service in 1 Mbps increments

Ethernet OAM

Fault Management	• IEEE 802.1Q, Port, VLAN, ToS, DSCP • CIR/CBS and PIR/PBS • 2-rate, 3-color (2R3C)
Loopbacks	• Station loopback • Loopback based on L2 and L3 filter • MAC address swap for RFC 2544
Topology Discovery	LLDP

Ethernet Services

E-Line	Yes
E-Line MEF CE 2.0	Yes*
E-LAN	Yes
E-LAN MEF CE 2.0	Yes*

Network Protection

Ethernet Protection	• <50 ms protection switching • 3.3 ms CCMs in hardware • Nonrevertive/revertive • ITU-T G.8031 • ITU-T G.8032 • Multiple instances/laddered rings
Link Aggregation	0:N LAG N<=16 1+1 LAG** LAG over G.8032 MC-LAG**

Security

• L2 loop monitoring
• L2 loop protocol
• Filtering

* Supported in R2.2
** Supported in R2.3

Fujitsu Network Communications, Inc.

2801 Telecom Parkway, Richardson, TX 75082
Tel: 888.362.7763

us.fujitsu.com/telecom

3.0/R2.1/12.17