

TJ1600

Core Switch



TJ1600S Switch Fabric Shelf



TJ1600I Interface Shelf

Product Highlights

Carrier Ethernet, OTN & DWDM Solution

High Capacity: 8Tbps Universal OTN/PTN Fabric, Scalable to 48Tbps

Disaggregated Architecture: Scales from 900Gbps in 1RU up to 48Tb in one Rack

Packet Synchronization: SyncE, 1588v2

50ms Protection: ERPS and 1:1

Interfaces: 1GE/10GE/25GE/100GE, SONET/SDH, OTN, Fiber Channel, CPRI

Key Features and Benefits

Applications: TJ1600 platform is architected to enable efficient aggregation and transport of traffic across access, aggregation and core networks for large enterprises, service providers and carrier of carriers. This enables support of a wide variety of applications and services like mobile backhaul networks, business connectivity, broadband and access infrastructure. Together with the TJ1400 platform, TJ1600 enables seamless network modernization of legacy network infrastructure using circuit emulation and supports a rich and diverse range of interfaces including OTN (OTU2 to OTUC6), SONET/SDH (OC3/STM1 up to OC192/STM64), Ethernet (1GE, 10GE, 25GE, 100GE) and Fiber Channel (FC-1G/2G/4G/8G/10G/16G/32G). TJ1600 has been successfully deployed by Tier-1 carriers for Alien Wavelength applications wherein high-capacity 100G/200G channels have been launched and transported over existing DWDM photonic layers from multiple vendors. TJ1600 platform provides coherent DWDM interfaces that enable the most efficient use of fiber capacity and provides up to 600Gbps per channel over thousands of miles.

Modular Scalability: TJ1600 Core Switch adopts an innovative breakout architecture bucking the

traditional industry approach of building large monolithic systems. TJ1600 Core Switch platform consists of two chassis elements:

- TJ1600S - Central fabric shelf of 11RU
- TJ1600I - Interface Shelf or TJ1600I of 1RU.

The overall system can scale from 900Gbps with one unit of TJ1600I to 48Tbps capacity by coupling multiple TJ1600I shelves with TJ1600S. The system supports dynamic capacity scaling using same hardware and eliminates the need to buy separate hardware shelves for larger capacity. This brings tremendous flexibility to the ordering process and network planning for telecom customers. The unique breakout architecture enables full utilization of fabric capacity with fewer number of fabric cards thus reducing overall cost and space requirements.

TJ1600S Switch Fabric Shelf: TJ1600S is a 11RU shelf that has 7 fabric slots in the front and 12 slots on the rear side for Fabric Interconnect Cards (FIC). FICs provide interconnection between the Fabric cards and the interfaces in TJ1600S. With 7 cards, the fabric shelf can support up to 48Tbps of capacity. Current release enables 8Tbps OTN capacity with 1:3 FIC and 4 Fabric cards. This can be further scaled to higher capacity with future FIC cards.

TJ1600 Core Switch



TJ1600I Interface Shelf: TJ1600I has two slots for field replaceable interface cards. The interface cards enable high density and support coherent DWDM interfaces in addition to various Ethernet, OTN, SDH and Fiber Channel interfaces. Each shelf has 1.2Tbps interface capacity, 900Gbps PTN forwarding capacity or 800Gbps OTN forwarding capacity in standalone mode. The architecture is extremely flexible to enable multiple operation modes. TJ1600I can operate in a standalone mode, back-to-back mode to double the capacity and along with TJ1600S Switch Fabric Shelf enables multi-Terabit capacity. Each TJ1600I enables 667Gbps OTN and 750Gbps PTN capacity when used with TJ1600S and interconnected using 1:3 FIC. 12 TJ1600I shelves can work with one TJ1600S using FIC 1:3 enabling 8Tbps OTN or 9Tbps PTN fabric capacity. The platform is capable of enhancing capacity by using new FIC cards. In addition to scale, this architecture

brings unmatched flexibility in enabling new solutions for customers:

- New line cards can be hosted on same interface shelf in line with technology enhancements to support different interface types, or new higher rate DWDM interfaces.
- In a monolithic chassis, there is often a need for the development of double-slot cards that result in wastage of precious slots and associated backplane capacity. This may be due to constraints such as the presence of larger sub-systems on the card or the need to support a larger number of low-speed interfaces. The breakout architecture enables making a taller interface shelf (for example 2RU TJ1600I-2) while retaining same number of Interface shelves along with a switch fabric shelf.

Technical Specifications

Interfaces Supported

TJ1600I and TJ1600I-2 Forwarding Capacity:

- Standalone 900Gbps Packet, 800Gbps OTN
- Back-to-back 1.8Tbps Packet, 1.6Tbps OTN
- w. FIC 1:3 9Tbps Packet, 8Tbps OTN

Interfaces Supported

Ethernet: 1GE, 10GE, 25GE, 100GE
OTN: OTU2, OTU2e, OTU3, OTU4, OTUC2
SONET: OC3, OC12, OC48, OC192
SDH: STM1, STM4, STM16, STM64
Fiber Channel: FC1G, FC2G, FC4G, FC8G, FC10G, FC16G, FC32G

Ethernet/MPLS-TP Features

MPLS-TP Connection Oriented Ethernet
VPWS, VPLS, H-VPLS
ELAN, EVLAN, EVPL, EPL, E-TREE*
IGMP v1/v2/v3*
VLAN, QinQ based services
HQoS

Network Protection & Security

ASON (L1 GMPLS) Mesh Restoration
ODUK SNCP
1+1/Linear MSP
MPLS-TP 1:1 LSP Protection
1:1 Pseudowire Protection
Link Aggregation Group (LAG)
Port Mirroring and Loopback
Ethernet Ring Protection (ERPS) ITU-T G.8032

MPLS-TP OAM RFC5860
BFD based Fault OAM
LSP Ping and Traceroute (RFC6426)
PW Ping
Y.1731/802.1ag based CFM OAM
Link integrity (LLCF/LLR)

Environmental

Operating Temperature: 0°C to 50°C.
Relative Humidity: 5% to 90%, non condensing

Synchronization

SyncE
1588v2 BC with ToD interface

Regulatory Compliance

CE, ROHS Compliant
EN 300386
EN 55022/EN55032 Class A/CISPR-22/CISPR-32
Class-A
FCC Part 15, Subpart B, Class A
IECS-003, Class-A

Certified for CB – Scheme

IEC 60950-1 / EN60950-1
UL 60950-1
CAN/CSA-C22.2 No. 60950-1

Dimensions (W x H x D)

TJ1600I: 482mm x 44mm x 690mm
TJ1600S: 482mm x 488mm x 645mm

**upcoming release specifications subject to change without notice*



Software-Enabled Transformation

Plot No. 25, J.P. Software Park,
Electronic City Phase-1
Hosur Road, Bengaluru,
Karnataka 560100, India
www.tejasnetworks.com
+91 8041794600

USA	UAE
KENYA	MALAYSIA
SOUTH AFRICA	SINGAPORE
NIGERIA	MEXICO
ALGERIA	BANGLADESH