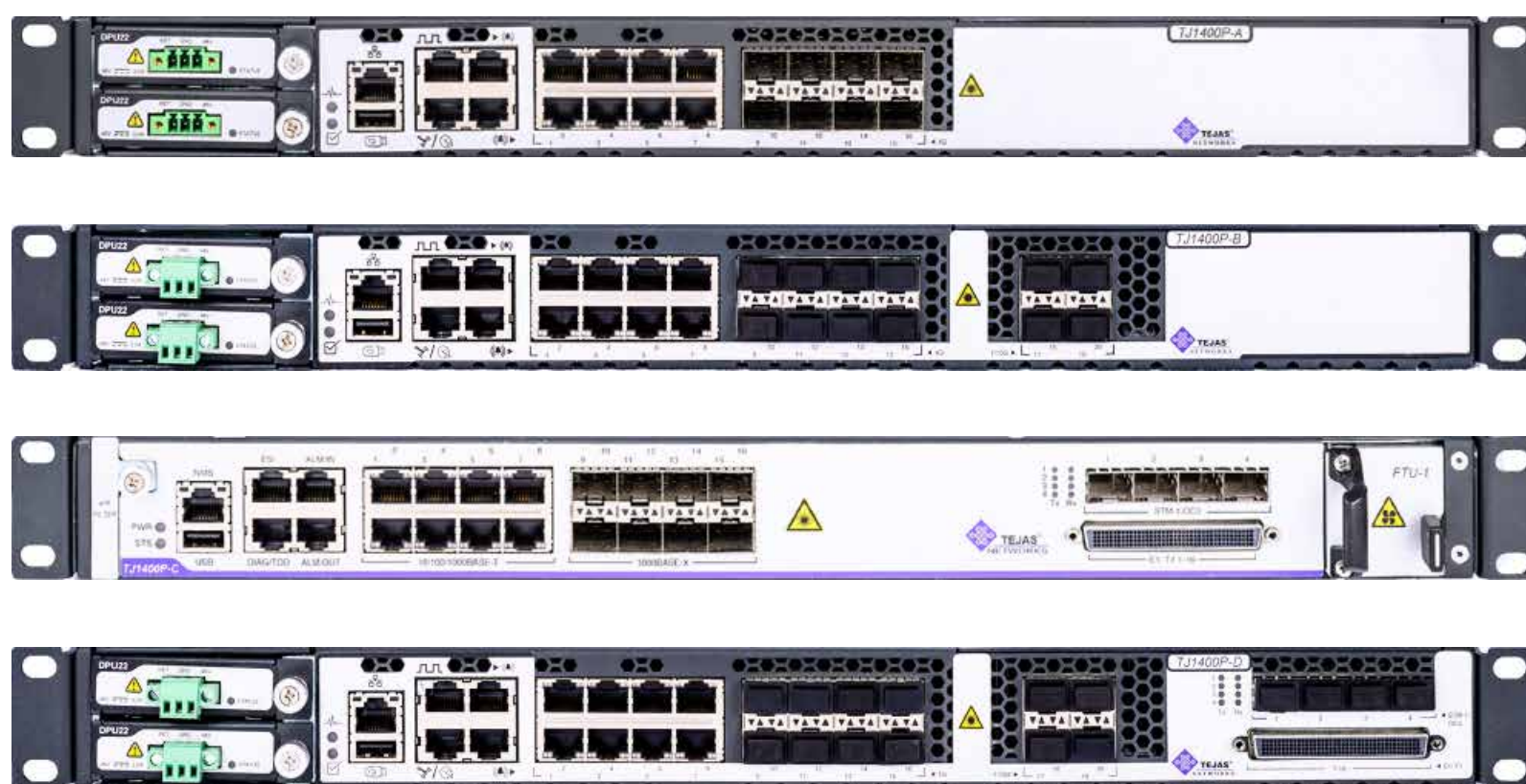
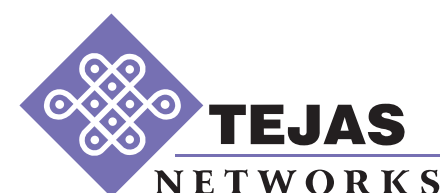


TJ1400P

Packet transport Network



Product Highlights

- ✓ Convergence of CE and PTN in a compact chassis
- ✓ Range of back-haul solutions for 4G/LTE and 5G
- ✓ Technologies: Carrier Ethernet, MPLS-TP

Key Features and Benefits

TJ1400P is one of the industry's most feature-rich packet access and aggregation platforms. It provides unparalleled integration of Access, transport networks and introduces a revolutionary way of building modern-day telecom infrastructure, bringing down the cost of network build-outs dramatically. TJ1400P is designed for cost-optimized delivery of Mobile Backhaul, Broadband Access, Utility networks and Enterprise Services. It is a highly reliable platform providing redundancy, low power consumption, and high service scale in a compact next-generation platform.

Key features include:

- Access technologies ERPS
- Transport technologies such as PTN, MPLS-TP.

- Synchronization

Software-defined Hardware™ and Modular Architecture: Software-defined Hardware™ allows easy upgrades as per new protocols and technology standards. TJ1400P increases network reliability by providing optional redundant switch fabrics and the ability to support protected UNIs and NNIs across interface cards. Modular interfaces decrease meantime to repair by requiring only the affected module to be replaced, not the entire unit.

Advanced Ethernet Features: TJ1400P provides best-in-class packet switching to create networks with the highest performance. Ingress rate limiting ensures that every packet entering the network is within the SLA bounds thus preventing any one customer/service from congesting/choking the

network. Each packet is classified so that the appropriate network policies (like prioritization and scheduling) can be applied. Eight hardware CoS queues, and scheduling algorithms ensure that there are sufficient options available to manage the data traffic efficiently. The platform supports 802.1q VLANs, 802.1ad provider VLANs (Q-in-Q), and G.8032 ERPS (Ethernet Ring Protection Switching). ERPS provides 50ms protected packet rings for greater resiliency. Multiple ringlets and multiple ring topologies are supported.

Ethernet OAM: Allows real-time monitoring of end-to-end circuits, connections or trunks thus enabling quick detection and isolation of faults to a particular subnet, trunk, link or node. The TJ1400P supports BFD based Fault OAM and ping/traceroute at tunnel/pseudowire level. It also supports Y.1731/IEEE 802.1ag based CFM OAM, Y.1731 PM counters, IEEE 802.1AB Link Layer Discovery Protocol (LLDP).

Flexible Network Architectures: TJ1400P can build a flexible architecture best suited for all services: Linear for rapid deployment, Hub and spoke for cost-effective aggregation, Ring and ringlet for high utilization and resiliency and

Meshed for low latency and flexible protection. This is achieved with a unique combination of functionality and ability for every optical port to be an UNI or an NNI.

Multi-Service Support: TJ1400P supports high speed enterprise services through Ethernet and MPLS-TP, Network modernization through circuit emulation, legacy TDM applications on SONET/SDH, residential multiplay and next-generation mobile backhaul as well as legacy 2G/3G backhaul.

Enterprise Services: Supports a versatile mix of services ranging from 1GE to 10GE (10 Gbps)

- Carrier Ethernet for interoperable E-Line, E-LAN and E-Tree Business Ethernet services for Service providers and utility networks.

Mobile Backhaul: TJ1400P can be used for 2G/3G/4G and 5G backhaul; simpler converged packet optical equipment with PTN/MPLS-TP and Carrier Ethernet support instead of using expensive IP/MPLS in the access.

- Operators can reuse their existing investments in L2 transport;.
- Advanced packet synchronization features for pure-packet backhaul of 2G/3G.

Technical Specifications

Packet Switching Capacity

Upto 64 Gbps bidirectional switching capacity

Interfaces

TJ1400P-A

- 8 x 1GE (SFP)
- 8 x 10/100/1000 Base-T

TJ1400P-B

- 4 x 10GE (SFP+)
- 8 x 1GE (SFP)
- 8 x 10/100/1000 Base-T

TJ1400P-C

- 8 x 1GE (SFP)
- 8 x 10/100/1000 Base-T
- 16 x E1 CEM
- 4 x STM-1

TJ1400P-D

- 4 x 10GE (SFP+)
- 8 x 1GE (SFP)
- 8 x 10/100/1000 Base-T
- 16 x E1 CEM
- 4 x STM-1

Common management ports

1 x RJ-45 1000BASE-T management Ethernet port (MGMT)

- BITS (1.544Mb/s, 2.048MHz/2 Mb/s)
- Pulse-per-Second (PPS) input and output

- Time-of-Day (TOD) input and output
- 10MHz input and output
- Local console por

Services

- CE2.0 compliant Carrier Ethernet
- L2 VPN Services - PW, MS-PW, VPLS & H-VPLS and VPWS services
- Topologies: Mesh, dual homing, multi-ring, ring, star, linear
- Circuit emulation

Ethernet/MPLS-TP OAM

- MPLS-TP OAM RFC 5860
- BFD
- ITU-T Y.1731
- 802.1ag OAMP
- LSP/PW Ping and Traceroute (RFC6426)
- ERPS (G.8032)
- 1:1 Linear Protection
- On demand LM/DM at VLAN level
- Port Mirroring and Loopback
- Link integrity
- 802.1ad
- LLDP

Other features

- LACP (Protection and Distribution)
- Static LAG (Protection and Distribution)
- SyncE
- IGMPv1/v2/v3
- Jumbo Frame upport upto 9600 bytes frame size
- Multi-Segment Pseudowires
- VLAN Translation
- NTP
- Performance Monitoring
- Hierarchical Protection support
- Port based EPL services
- VLAN Tagged MPLS-TP

QOS

- Supports 8 Hardware Queues
- Traffic classification based on priority/DSCP, Shaping, Scheduling (WRED/Tail-Drop), Policing (sTCM, srTCM, trTCM)
- EXP mapping
- Storm Control

Security

- ACLs
- RADIUS
- Secure Protocols: HTTPS, SNMPv3

Management

- All configurations via TJ5500: Point and click simple and user friendly GUI supports FCAPS functionality

Electrical Specifications

- Input Voltage: -40V to -60V DC
- Maximum Power: 100 Watts maximum per unit
- Input Voltage: 90V AC to 260V AC
- Maximum Power: 150 Watts maximum per unit

Environmental

- Operating Temperature : -40°C to +65°C

- Storage Temperature : -40°C to 70°C
- Operating Humidity: 5% to 95% non-condensing
- ETS 300 019-1-1, Class 1.2 Storage
- ETS 300 019-1-2, Class 2.3 Transportation
- ETS 300 019-1-3, Class 3.2 Operating stationary use
- QM333 –Standard for Environmental Testing of Telecommunication Equipment

EMI/EMC

- FCC Part-15, Subpart B, Class-A
- ICES-003, Class-A
- EN 55032 Class-A/CISPR-32 Class-A
- EN 61000-3-2 and EN 61000-3-3
- EN 55035/CISPR 35 (EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-8, EN61000-4-11, and EN61000-4-29)

RoHS compliant

- Directive 2011/65/EU and Directive

Safety

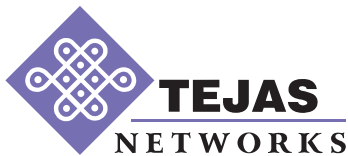
- Certified for CB - Scheme
- IEC 62368-1/EN 62368-1
- UL 62368-1

Laser Safety

- IEC 60825-1/EN 60825-1
- IEC 60825-2/EN 60825-2
- 21 Code of Federal Regulations (CFR) 1040

Physical

- Rack Size: 1RU
- Dimensions (W*H*D in mm): 481.2x44x480 (AC PSU)
- Dimensions (W*H*D in mm): 482.6x44x298 (DC PSU)
- FAN: Hot Swappable
- Airflow: Front to rear (DC PSU) Left to right (AC PSU)



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