

TEAMLINK NEON



Overview

The NEON product is the latest multi-service, large-capacity packet access and aggregation device. It uses **both IP-MPLS and MPLS-TP** as its core transport technologies, supporting 100G, 25G, 10G, GE/FE, E1, WDM and STM1,STM4 service interfaces. NEON offers a comprehensive and scalable set of Layer 2 VPN (L2VPN), Layer 3 VPN (L3VPN), and PWE3 services, built on a dual IP-MPLS / MPLS-TP forwarding and control plane along with routing technologies and TDMoP technologies. This dual-mode architecture allows the same platform to run connection-oriented MPLS-TP transport (with deterministic OAM, protection switching and static/quasi-static provisioning) side by side with dynamic, routed IP-MPLS services (OSPF, BGP, LDP/RSVP-TE, Segment Routing) — making it well suited for the cost-effective delivery of large complex networks combined IP-MPLS / MPLS-TP & SDN network. The router shall provide a non-blocked switching matrix - upto system capacity. Reboot recovery time <10Mins.

Highlights	
L2 CAPABILITIES & PROTECTION	- Supports Layer 2 features, IEEE802.1q, IEEE 802.1P, IEEE 802.1ad. - Support LAG/LACP, primary/secondary link aggregation, G.8031, G.8032, G.8131, TE Hot-standby, Traffic Engineering FRR, PW protection, and LSP protection. - Support provide carrier-class 50ms switching protection. - Supports multi-chassis LAG for aggregation of links across two chassis. - Supports point to Point & Point to Multipoint LSP for Unicast and Multicast traffic.
LAYER 3 CAPABILITIES	- Supports full suite routing features including IPv4 & IPv6 routing protocols functions, OSPF, BGP, IS-IS, OSPFv3, IS-ISv6, BGP4, Segment Routing or similar protocol and Circuit emulation. - Supports BGP Prefix independent control (EDGE & Core).
DUAL IP-MPLS /	

Highlights	
MPLS-TP CORE	- Runs IP-MPLS (dynamic, routed) and MPLS-TP (connection-oriented, deterministic) planes concurrently on the same node. - Supports static and TE-signaled LSPs for MPLS-TP, alongside LDP/RSVP-TE/Segment Routing signaled LSPs for IP-MPLS. - MPLS-TP OAM (ITU-T Y.1731 / G.8113.1 style) for proactive/on-demand CC-CV, remote defect indication and 1:1 / 1+1 linear protection. - Seamless interworking between IP-MPLS and MPLS-TP domains for end-to-end service continuity
MULTISERVICE	- Supports multiple services types, including L2VPN, L3VPN, PWE3 service. - Up to 16x E1 interfaces for connecting legacy TDM network. - Support WDM. As the network evolves, it is critical for carriers to deploy advanced OAM to monitor the health and performance of the network, including Hardware-based BFD, MPLS-TP OAM and Y.1731 features that supply multi-layer continuity check, frame delay, frame jitter and packet loss measurement mechanisms, and RFC2544 / Y.1564 to supply the throughput of the network. - Supports performance monitoring for Layer-2 and layer-3 services (Y.1731/Y.1564, TWAMP, SAA or equivalent). Supports BFD with interval of 10ms or less. - Supports more than 64 BFD sessions.
SYNCHRONIZATION TECHNOLOGY	Support IEEE 1588V2, SyncE, Timing ports— TOD in, TOD out, NTP, SYNC/BITS interface / similar timing protocol required for LTE network.
HOT - SWAPPABLE	Support Hot-Swappable controller cards, Fan tray interface cards and Field Replaceable Unit (FRU).
ALARMS	External alarms provided via LED indicators notifying various status of the device and through NMS, with audible alarms and provision of extending through NEG port.

NEON assists any network to migrate to a combined IP-MPLS and MPLS-TP core in a seamless manner by using the existing optical fiber, new optical fiber, or a mix of both. It is a versatile device that runs IP-MPLS and MPLS-TP side-by-side, supporting the amazing throughput required for a strong backbone like Complex network.

It supports multiple interfaces and features to cater to the needs of large networks, from legacy TDM to pure IP, and works with both IP-MPLS and MPLS-TP transport — also serving as the backbone for an SDN network or as a Whitebox for devices connected to the network.

FEATURES	
L2 FEATURES	Support IEEE802.1q, IEEE 802.3ad, IEEE 802.1ab, mirror IEEE 802.3ah, IEEE 802.1ag, ITU-T Y.1731, IETF RFC2544.
L3 FEATURES	- Support IPv4 Routing Protocol: OSPF, IS-IS, BGP4, static routing. - Support IPv6 routing protocol: OSPFv3, IS-ISv6, BGP4+, static routing. Support IPv6, IPv4 dual stack. Support dynamic and static ARP, support DHCP.
IP-MPLS & MPLS-TP FEATURES	IP-MPLS plane: Support DP, L2VPN (VPWS/VPLS), Support MPLS/BGP L3VPN, MPLS-TP, LDP, RSVP-TE, Segment Routing.

	● MPLS-TP plane: Support ITU-T G.8113.1 / G.8110.1-aligned static and dynamic (GMPLS-controlled) MPLS-TP LSPs, MPLS-TP linear protection (1:1, 1+1) and ring protection, MPLS-TP OAM (CC-CV, RDI, AIS/LDI, LM/DM) per ITU-T Y.1731. ● Concurrent IP-MPLS / MPLS-TP interworking on shared line cards and forwarding tables. ● MAC table size >16k
QOS	● Support DiffServ mode based on flow classification, flow classification based on VLAN, 802.1p, VLAN+802.1p. ● VLAN count >4000 ● Support WRED, CAR ratelimit (RFC2697, RFC2698, RFC4115, MEF10). ● Support port-based traffic shaping, support 8 priority queues per port. ● Supports per-service, per-forwarding class queuing & shaping features. ● Supports 3 level HQOS on all kinds of Ethernet interface with minimum 8K hardware queues. ● Support IP Application Mapping. The list of IP match criteria should include Source IP address and mask, Destination IP address mask, IP protocol, UDP source port, TCP source port, UDP destination port, TCP destination port. ● Support critical applications SCADA, VOICE, Video. ● VLAN CoS differentiation: appropriate service differentiation must be applied according to the 802.1p bits. This will require mapping of 802.1p bits to DSCP values and EXP bits in the MPLS header (both IP-MPLS and MPLS-TP) when the service is offered over a partially MPLS-enabled network. ● The router shall provide the following QoS features: Classification and hierarchical scheduling, WRR, strict priority (SP) profiled scheduling & multi-tier policing and shaping; similar QoS shall be supported for all types of Ethernet interface including bundled interfaces.
OAM & SLA	● IEEE 802.3ah, IEEE 802.1ag, ITU-T Y.1731 — applied consistently across both the IP-MPLS and MPLS-TP planes.
PROTECTION	● BFD for IP/RSVP/LDP/LSP/PW/VRRP/OSPF/ISIS/BGP. Y.1564 RFC2544. ● LAG/LACP, Active and standby Trunk, G.8032, VRRP.
SYNCHRONIZATION	● TE FRR, TE-Hot standby, LSP 1:1, PW Redundancy (available for both IP-MPLS and MPLS-TP LSPs). ● Support SyncE. ● Support IEEEv2SDN, EVPN.
IP-MPLS / MPLS-TP	● Supports interoperability with routers of other multiple OEMs, across both the IP-MPLS and MPLS-TP control planes. ● Supports 64k IPv4 & 64k IPv6 routes. ● Transit LSPs >128
PROTOCOLS	● Supports IPv4 and IPv6, IGMP, MLD, and PIM-SM & SSM, ECMP, NGMVPN. ● Supports multicast troubleshooting tools like Mtrace and mfib ping or equivalent troubleshooting mechanism. ● Supports 6PE and 6VPE mode for IPv6 transport over IPv4. ● Multicast routes more than 1K supported. ● Supports Internet Group Management Protocol (IGMP) v1, v2 and v3. ● Supports SNMPv1/v2/v3. ● Security forms an integral part of a network design to protect both the

	end-customers and the network infrastructure. The solution that the vendor proposes shall have the necessary provisions to implement the necessary security measures. • Supports Access Control List to filter traffic based on Source & Destination IP Subnet, Source & Destination Port, Protocol Type - (IP, UDP, TCP, ICMP etc.) & Port Range. • Supports aggregation of more than eight links as part of a single aggregation on a network. • Supports more than: 500 MPLS Layer-3 VPNs, 500 MPLS VPLS, 500 MPLS Layer-2 PWs (across IP-MPLS and MPLS-TP tunnels). • Supports more than 100 multicast groups. • IEEE 1588v2 Precision Timing Protocol (PTP) & Synchronous Ethernet support for Network synchronization.
SECURITY	Supports Black hole filtering: dropping of traffic destined for a specific prefix at wire speed. Supports ingress and egress packet filtering based on L2-L4 criteria at wire speed. The possibility to log the actions on individual filter rules is supported. Supports AAA support: Accounting, Authorization and Authentication of users and commands. Support of local authentication, TACACS+ and Radius. Supports Authentication of routing protocol updates: IS-IS, OSPF, BGP. Supports secure shell network protocol SSH. Protection of local services (HTTP, small UDP/TCP servers, DHCP, TELNET, SSH) based on L2-L4 criteria.

SPECIFICATIONS	
PHYSICAL FEATURES	• Switching capability: 350Gbps (full-duplex) • Interfaces: • Type: 100G, 25G, 10G, GE/FE, E1, WDM. • STM1 x12, 2x100G / 8x25G / 32x10G • STM4 X4 • 48xGE/FE, 64xE1 • Console Port, NEG Port • Control-plane: concurrent IP-MPLS (dynamic routing/signalling) and MPLS-TP (static/GMPLS-controlled transport LSPs) on the same forwarding hardware.
POWER SPECIFICATIONS	• Dual Power supply: DC : -48V (-40V ~ -57V) (Redundant 1+1) • Power consumption: <300W
USER CONDITIONS	• Operating temp: -15°C ~ 65°C • Storage Temperature -25°C ~ 70°C at 95% RH • Relative humidity of operating (long-term) 10% RH ~ 90% RH (Indoor), no condensation
DIMENSIONS	• 444mm x 220mm x 133mm, standard sized 19-inch rack
HIGH	• 3U
Environmental Standards	• ETSI 300-019-1-3 Class 3.1 • EN 300386/2000/TECQM333
Safety	• EN 60950/2000
EMI/EMC	• IEC/EN61000-4-2: Electrostatic discharge Immunity, level 6/8KV



	• IEC/EN61000-4-3: Immunity to electromagnetic field radiated, level 10V/m • IEC/EN61000-4-4: Immunity against electrical Fast Transients, Level 4KV on DC i/p and all other ports. • IEC/EN61000-4-5 Immunity against voltage surges, DC terminals. Level 2KV, others 1KV. • IEC/EN61000-4-6 Immunity against radio frequency voltage conducted in Power terminals, level 10V/m • IEC/EN61000-4-17 ripple on DC input port Immunity • IEC/EN61000-4-18 Damped Oscillatory wave Immunity • IEC/EN61000-4-29 Immunity against short voltage dips, interruption and voltage variations • EN55022(CISPR-22) conducted emission, Level Class B • EN55022(CISPR-22) radiated emission, Level Class B
TEC and Security	• MTCTE & ITSAR (Security Certification) Certified Equipment
Ingress Protection	• IP41

COMPLIANCES

STANDARDS & PROTOCOLS	• IEEE802.3 • IEEE802.u • IEEE802.3ad Link Aggregation • IEEE802.1p • IEEE802.1Q VLAN • IEEE802.1ad QinQ • IEEE802.1ag CFM • ITU-T Y.1731 Services OAM • ITU-T G.8113.1 – MPLS-TP OAM • ITU-T G.8110.1 – MPLS-TP architecture • ITU-T G.8121 – MPLS-TP equipment functional blocks • ITU-T G.8131 – MPLS-TP linear protection switching • RFC2544 • RFC2328 OSPFv2 • RFC4271 BGPv4, RFC3107 BGPv4 • RFC4760 MP-BGP, RFC3985 PWE3 • RFC2547 BGP/MPLS VPN • RFC5659 Multi-Segment PWE3 • RFC5880 BFD • RFC5086 CESoPSN • RFC4553 SAToP • RFC5921 – MPLS-TP framework • RFC5960 – MPLS-TP data-plane architecture
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Solutions in Connectivity
An ISO 9001 : 2015 Company

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