Packet Optical Transport Products Portfolio

**NG-PTN**

10GE/100GE Ecosystem
- **TN701B/C**: 10Gbps SW GE SFP/RJ45 Indoor/Outdoor
- **TN703A**: 64Gbps SW GE/XGE E1/STM-1
- **TN704A**: 136bps SW GE/XGE E1/STM-1
- **TN704B**: 680Gbps 100GE GE/XGE
- **TN705E**: 800Gbps SW 1/10/100GE 10G POS
- **TN765**: 960Gbps SW 1/10/100GE 10G POS
- **TN765E**: 2Tbps SW 1/10/100GE 10G POS

**PTN**
- **TN701A**: 4.4Gbps SW GE SFP/FE RJ45 Indoor/Outdoor
- **TN703C**: 6.4Gbps SW FE/GE/E1 Indoor/Outdoor
- **TN703E**: 44Gbps SW FE/GE/XGE E1/STM-1
- **TN705**: 88Gbps SW 2.5/10G POS FE/GE/XGE E1/STM-1
- **TN725**: 108Gbps SW 2.5/10G POS FE/GE/XGE E1/STM-1
- **TN725E**: 176Gbps SW 10G POS FE/GE XGE E1/STM-1
- **TN735**: 400Gbps SW 10G POS FE/GE E1/STM-1

**SDN/NFV**
- **SOO Network**
- **Network Intelligence**

**Control Plane**
- **Data Plane**
- **Management Plane**

* Development
NG-PTN Platform: SOO™ Transport SDN

SDN Product Line: “SOO (Software Defined Open Packet Optical) Network”

“SOO Station”: SDN Controller
- Distributed hierarchical SDN Controller
- Orchestration of abstracted underlying network resources
- Open APIs for vertical integration of applications
- End-to-end automated service provisioning
- Path computing and management

“SOO Device”: SDN-ized Network Devices
- Controlled by SOO station
- Hybrid network devices: legacy packet switching & open flow device
- Open & standard interface for 3rd party systems integration

“SOO APP”: SOO Store/Design/Care/Build/3rd party’s
- In house developed apps for customer manager, network design, maintenance & deployment etc.
- Open & standard interface for 3rd party’s APPs integration

3rd Party Apps
**MBH Networks today: BW shortage**
- LTE networks growth and broadband bandwidth demand are pushing networks upgrade
- Most mobile operators’ MBH networks are based on GE Access and 10G Aggregation or below which is not enough today

**100G: The technology is there!**
- 100G cost reduction and new hardware solution available today
- 10G access and 100G become very cost competitive: same cost/price as GE/10GE system few years ago

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**10G Access and 100G Aggregation**

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<th>Metro Access</th>
<th>Metro Aggregation/Core</th>
<th>Mobile Core</th>
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- **10G Access Ring**
- **10G Minor Ring**
- **100G Minor Ring**
- **100G Major Ring**

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**Mobile Network Core**
- SGW Pool
- MME Pool
- SGW
- MME
FEATURES

- An ultra-high-capacity rack-mount device for Metro Aggregation or Metro Core Applications
- Simple and reliable transport with connection-oriented **MPLS-TP/CE** technology
- Carrier-class modular design with 16 pluggable slots
- **9U** small form factor
- Ultra high capacity: **2T** full duplex switching fabric
- Full hardware redundancy with 1+1 protection for control, switch, clock and power supply
- 10GE, **100GE**, 10G POS interfaces, industry leading 10GbE/100GbE port density
- Sub-50ms protection. LSP, PW protection, LACP, Dual homing, LPT
- Hierarchical MPLS-TP OAM support
- Ethernet OAM: 802.3ah, 802.1ag, Y.1731*
- L3 Function*
- BoD*, Automated provisioning
- **IEEE1588v2** & **Synch Ethernet**
- -48VDC power supply

* Denotes features available in a future release

AT A GLANCE

- 2Tbps full duplex switching fabric
- 16 slots, maximum interface capacity:
  - 16 x 100GE
  - 64 x 10GE (XFP)
  - 96 x 10GE (SFP+)
- **9U**, 19"/ETSI/ANSI rack mountable
- Typical Power Consumption: 1000W
- SDN SOO-Network compatible
100GE MBH Core: NetRing TN765

**FEATURES**

- An ultra-high-capacity rack-mount device for Metro Aggregation or Metro Core Applications
- Simple and reliable transport with connection-oriented **MPLS-TP/CE** technology
- Carrier-class modular design with 16 pluggable slots
- **9U** small form factor
- Ultra high capacity: **960G** full duplex switching fabric and **1.28T** aggregated access capacity
- Full hardware redundancy with **1+1** protection for control, switch, clock and power supply
- GE, 10GE, **100GE**, 10G POS interfaces, built-in DWDM
- Sub-50ms protection. LSP, PW protection, LACP, Dual homing, LPT
- Hierarchical MPLS-TP OAM support
- Ethernet OAM: 802.3ah, 802.1ag, Y.1731*
- L3 Function*
- BoD*, Automated provisioning
- **IEEE1588v2** & **Synch Ethernet**
- -48VDC power supply

* Denotes features available in a future release

**AT A GLANCE**

- **960Gbps** full duplex switching fabric
- 16 slots, maximum interface capacity **1.28T**:  
  - 4 x 100GE
  - 64 x 10GE (XFP)
  - 96 x 10GE (SFP+)
- **9U**, **19"** /ETSI/ANSI rack mountable
- Typical Power Consumption: **850W**
- SDN SOO-Network compatible
- MEF CE2.0 Certified
FEATURES

- A compact high-capacity rack-mount device for Metro Aggregation or Metro Core Applications
- Simple and reliable transport with connection-oriented **MPLS-TP/CE** technology
- Carrier-class modular design
- Hardware redundancy with 1+1 protection for control, switch, clock and power supply
- **5U** small form factor
- Ultra high capacity: **960G** total capacity
- GE, 10GE, **100GE**, 10G POS interfaces
- **Sub-50ms protection**. LSP, PW protection, LACP, Dual homing, LPT, Y-Cable Protection*
- Hierarchical MPLS-TP OAM support
- Ethernet OAM: 802.3ah, 802.1ag, Y.1731
- **L3 Function** (Static and Dynamic), IPv4/6 support
- BoD, Automated provisioning
- **IEEE1588v2 & Synch Ethernet**
- DC power modules with 1+1 protection

AT A GLANCE

- **960Gbps** total full duplex capacity
- 8 slots, maximum interface capacity:
  - 8 x 100GE with hot pluggable CFP2 modules
  - 96 x GE/10GE with hot pluggable SFP/SFP+/T-SFP modules
  - 32 x 10G POS with tunable XFP
- **5U**, 19”/ETSI rack mountable
- Max Power Consumption: 880W
- SDN SOO-Network compatible
**FEATURES**

- Simple and reliable transport with connection-oriented **MPLS-TP/CE** technology
- Carrier-class modular design
- Hardware redundancy with 1+1 protection for control, switch, clock and power supply
- **3U** small form factor
- High capacity: **88G** total capacity
- GE, 10GE, 10G POS interfaces
- **Sub-50ms protection**, LSP, PW protection, LACP, Dual homing, LPT, Y-Cable Protection*
- Hierarchical MPLS-TP OAM support
- Ethernet OAM: 802.3ah, 802.1ag, Y.1731
- BoD, Automated provisioning
- **IEEE1588v2 & Synch Ethernet**
- DC power modules with 1+1 protection

**AT A GLANCE**

- 88Gbps Full-Duplex Switching Fabric
- Dimension: 440x133x380mm WidthxHeightxDepth (3RU)
- 19"/ETSI/ANSI rack mountable
- Typical power consumption: 150W
- SDN SOO-Network compatible*

* Denotes features available in a future release
**FEATURES**

- A compact high-capacity rack-mount customer edge device targeted at Access Applications.
- Simple and reliable transport with connection-oriented **MPLS-TP/CE** technology.
- Carrier-class modular design, fixed system board and 2 exchangeable sub slots.
- Compact design: **1U** high pizza box.
- High capacity in compact enclosure: **64G** full duplex switching fabric.
- GE, 10GE, E1, STM-1 interfaces.
- **Sub-50ms protection**. LSP, PW protection, LACP, Dual homing, LPT, Y-Cable Protection, MSP for STM-1.
- Hierarchical MPLS-TP OAM support.
- Ethernet OAM: 802.3ah, 802.1ag, Y.1731.
- **L3 Function** (Static and Dynamic) with support of IPv4/6*
- BoD, Automated provisioning*.
- **IEEE1588v2 & Synch Ethernet**
- AC or DC power modules with 1+1 protection.
- Outdoor applications: -40...65°C.

**AT A GLANCE**

- 64Gbps full duplex switching fabric.
- 2 sub-slots, maximum interface capacity:
  - 4 x 10GE with pluggable SFP+ modules.
  - 28 x GE with pluggable SFP modules.
  - 8 x STM-1.
  - 32 x E1.
- **1U, 19"/ETSI rack mountable.**
- Max Power Consumption: **100W**.
- SDN SOO-Network compatible*.

* Denotes features available in a future release.
MBH Access/CPE: NetRing TN701B

FEATURES

- A compact CPE/Access device targeted at Access Applications, optimized for Wireless Access Applications
- Simple and reliable transport with connection-oriented **MPLS-TP/CE** technology
- Compact enclosure, carrier-class design
- High capacity in compact enclosure: **10G** full duplex switching fabric
- Optical and electrical GE interfaces
- **8 x GE(RJ-45)** interfaces with support of **PoE** IEEE 802.3 af/IEEE 802.3at, max power budget is 80W
- E-LINE, E-LAN and E-Tree service
- **Sub-50ms protection**. LSP, LACP, LPT
- MPLS-TP OAM support
- AC power supply: 90V~240V
- Desktop and wall-mountable
- Outdoor applications: -40...65°C

AT A GLANCE

- 10Gbps full duplex switching fabric
- Maximum interface capacity:
  - 2 x GE with pluggable SFP modules
  - 8 x GE RJ-45 PoE
- **300mm(W)*210mm(D)*44.45mm(H)**
- Max Power Consumption: 100W
- SDN SOO-Network compatible*

* Denotes features available in a future release