# Nokia 1830 Express Transport Metro (XTM) Series

## Innovative Packet Optical Networks from Access to Core

The Nokia 1830 XTM Series packet optical networking platform delivers high-performance metro access, metro aggregation, and metro core networks with industry-leading capabilities in areas such as power, density, latency, and synchronization across Layers 0 to 2.5.

Whether used to push WDM all the way up to the antenna or to the cell site in mobile networks, to connect enterprises together or to the cloud, or to deliver high-speed residential broadband services, the 1830 XTM Series provides all the capabilities needed to meet your requirements for a flexible and future-proof metro network.

Part of Nokia's Integrated Packet Transport solutions, the 1830 XTM Series enables optical transport of Layer 0 optical wavelengths to Layer 2.5 services, supporting MPLS-TP, Ethernet, OTN, SDH/SONET, Fibre Channel services, and protocols. The 1830 XTM Series builds on key design philosophies such as low power, high density, and a high level of scalability.

Most recently, we have extended the 1830 XTM Series with 400 Gb/s pluggable coherent optics, a fully flexible-grid optical layer, and SDN control via Nokia's Transcend Network Suite. The 1830 XTM Series now also incorporates Infinite Capacity Engine – Extensible (ICE-X) pluggable DCOs to provide scalable, flexible, and highly efficient transport and aggregation over point-to-point and point-to-multipoint configurations in both fiber-pair and single-fiber networks.

Scaling beyond 400 Gb/s, the 1830 XTM Series supports open networking principles and higher-speed DWDM at both 800 Gb/s and 1.2 Tb/s via open transponders from the Nokia 1830 Global Express (GX).

## Mobile xHaul and Auto-Lambda – Innovations Supporting Mobile and Access Networks

The 1830 XTM Series offers a multitude of unique capabilities that make the platform ideal in a number of key applications.

Examples include:

- Superior low-latency and synchronization capabilities that are vital in mobile backhaul, especially as mobile operators roll out 5G xHaul networks
- Auto-Lambda, enabling scalable access networks that are easy to install and configure, making them ideal for fiber-deep access applications, such as 5G in mobile networks or DAA in cable networks
- Fully hardened networking portfolio from Layer 0 to Layer 2 for amplified DWDM access networks

## An Innovative Packet Optical Metro Network

- Industry-leading key metro capabilities
- From customer premises to 400G core
- Enabling revolutionary point-to-multipoint optical architectures
- Cost-optimized for your application

1830 XTM-102

19'', ETSI, 23" 1RU, one full-sized slot/one half-sized slot.

1830 XTM-301

19", ETSI, 23" 3RU, up to four full-sized slots/four half-sized slots.

1830 XTM-3000

19", ETSI, 23" 11RU, up to 17 full-sized slots/10 half-sized slots.

The images shown are for illustration purposes only and may not be an exact representation of the product.

- iSFPs enabling transparent delivery of SDH/SONET services over a packet optical architecture, and eventually a smooth migration of legacy TDM networks to a common Ethernet/TDM network that fulfills strict synchronization and availability requirements
- True Layer 1/Layer 2 performance, features, and protocols, including FEC, OTN transport, MPLS-TP, and long-reach optics, all on one blade

## High Density + Low Power = Lower Cost

The 1830 XTM Series has a heritage of compact, low-power products and solutions, fitting ideally in metro deployments or remote access sites where space is scarce and expensive. Single-slot transponders and muxponders are successfully combined with ROADMs and/or packet optical transport switches (EMXP) in configurations that prove our leading density and low-power capabilities for both Layer 1 optical and Layer 2 Ethernet services. For example, our 200G/400G solutions draw less than 20 W per 100 Gb/s service – a figure that we believe is the lowest among comparable multi-service packet optical platforms.

Add to this the 1830 XTM Series' wide range of chassis options, from small 1RU chassis to large 11RU chassis, and it becomes even easier to right-size your network, matching your requirements for low power as well as space.

### The 1830 XTM Series Is Ideal in a Broad Range of Network Applications

- 5G xHaul mobile transport
- Residential PON/DSL backhaul
- Business Ethernet services
- Enterprise services
- Access/metro/regional networking
- Wholesale services

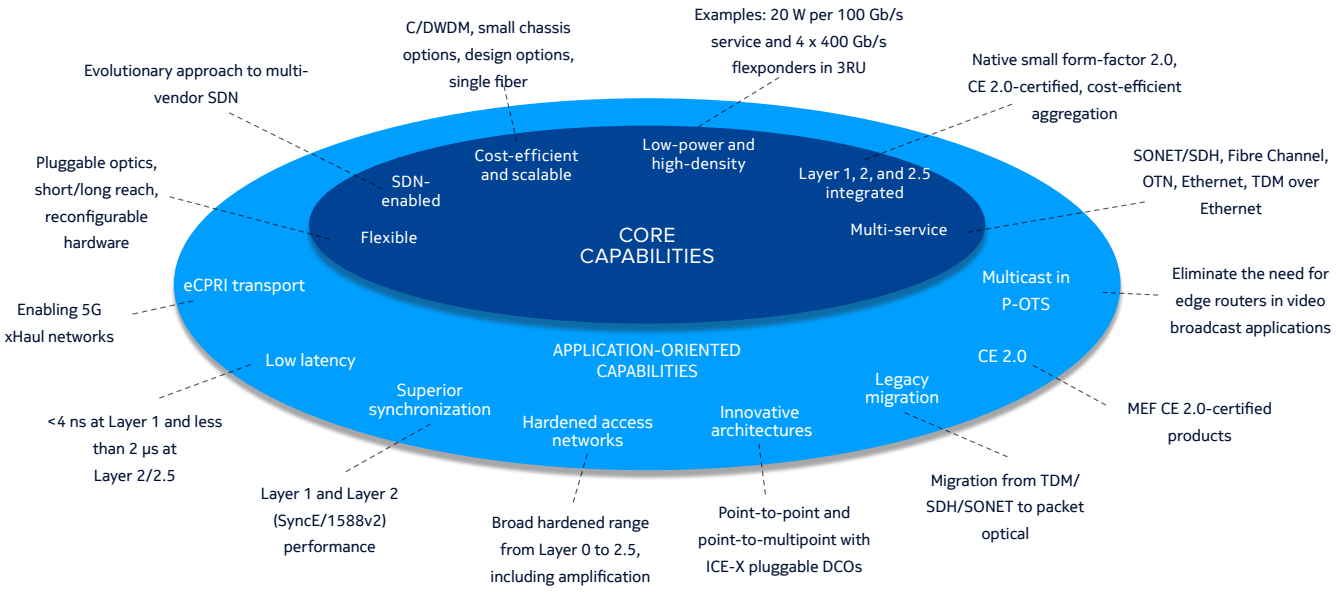


Figure 1: Outstanding metro capabilities

# 1830 XTM Series Products

A selection of the Nokia 1830 XTM Series products. Please contact your Nokia sales representative for a full product range overview.

| | | |
|---|---|---|
| **Muxponders** | | |
| 10G | MS-MXP/10G | 10 client port multi-service muxponder. SDH/SONET, Ethernet, SAN, etc. Multiple traffic images. FEC on line. Dual line ports for 1+1 line protection. |
| | MXP10GOTN | 10 client port OTU2 muxponder. STM-16/OC-48, GbE, 1G/2G/4G FC. GFEC and EFEC on line. |
| 200G | MXP200GOTN | 14 client port coherent CFP2-based OTU4 muxponder supporting up to 20 client services. 10/100GbE-LAN, STM-64/OC-192, OTU2/OTU2e/OTU4, 8/16/32G FC. |
| **Transponders** | | |
| 10G | TPMRHEX-Lite | 6 x transparent transponders on a one-slot unit. 614 Mb/s to 14 Gb/s; see data sheet for details. |
| | TPHEX10GOTN | 6 x OTU2/OTU2e transponders on a one-slot unit. 10 GbE, SDH/SONET, OTU2, OTU2e, 8G FC. |
| | FHAU | 12 client port fronthaul flexponder. 10 GbE-WAN, 10G eCPRI. |
| 200G | FXP400GOTN | Dual 200G coherent CFP2-based transponder/muxponder on a one-slot unit. Supporting up to 4 x 100G clients over 2 x 100G or 200G wavelengths. OTU4, 100GbE-LAN. |
| 400G | FXP400G-E | 400G coherent CFP2-based transponder/muxponder on a one-slot unit. Supporting up to 4 x 100G clients or 1 x 400G client over a 400G wavelength. OTU4, 100 GbE-LAN, 400 GbE-LAN |
| **Layer 2** | | |
| 1G, 10G, 100G, 200G | EMXP/IIe, EMXPIII, EMXP XH800, HDEA | Packet optical transport switch up to 1600G. CE 2.0, MEF9 + MEF14-certified; MPLS-TP, Sync-E, 1588v2. Multiple product models available; see data sheets for details. |
| **ROADMs** | | |
| | 1x4 Flexgrid ROADM | 4-degree ROADM, fully flexible grid with manageable channel width and central frequency. |
| | 1x9 Flexgrid ROADM | 9-degree ROADM, fully flexible grid with manageable channel width and central frequency. |
| **Miscellaneous Optical Networking Equipment** | | |
| CWDM/ DWDM | | Wide range of mux/demux/OADM units to support up to 96-/48-channel DWDM and eight-channel CWDM over dual/single fiber(s). |
| Passive WDM | | Wide range of passive optical devices for hardened chassis or manhole deployments covering CWDM/ DWDM networks and PON Overlay applications |
| Amplifiers | OA-RAED, OA26C | Raman/EDFA hybrid amplifier, power extender C-band. |
| | OA17, OA20, OA21 | Several EDFA amplifier models available with different gain characteristics, including hardened EDFA. |
| | H-EDFA | Hardened bi-directional EDFA pizza box for demanding applications. |
| VOA Units | VOA-8CH, VOA-2CH | Eight-channel (using VOA-SFP) and two-channel variable optical attenuators. |
| Power Meters | OCM | DWDM/CWDM optical channel monitoring units. |

**About Nokia**

At Nokia, we create technology that helps the world act together.

As a B2B technology innovation leader, we are pioneering networks that sense, think and act by leveraging our work across mobile, fixed and cloud networks. In addition, we create value with intellectual property and long-term research, led by the award-winning Nokia Bell Labs.

With truly open architectures that seamlessly integrate into any ecosystem, our high-performance networks create new opportunities for monetization and scale. Service providers, enterprises and partners worldwide trust Nokia to deliver secure, reliable and sustainable networks today – and work with us to create the digital services and applications of the future.



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Document code: (March) CID214539