

Nokia 7750 SR-s Service Router

Media Dependent Adapters

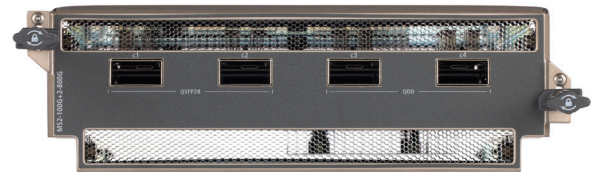
The Nokia 7750 SR-s Service Router Media Dependent Adapter2-s (MDA2-s) delivers high-density Ethernet 10 Gigabit Ethernet (GE), 25GE, 40GE, 50GE, 100GE, 400GE and 800GE interfaces, enabling enhanced quantum-safe IP network cryptography and advanced packet processing to support demanding IP applications.

Powered by Nokia's cutting-edge FP5-based E5 MAC silicon, the Nokia MDA2-s unleashes native support for blazing-fast 800GE interfaces, combined with energy-efficient optics such as 800G QSFP-DD, QSFP112, and SFP112. This powerful combination seamlessly elevates FP4-based 7750 SR-s systems, delivering next-generation speed and uncompromising security for the most demanding network environments.

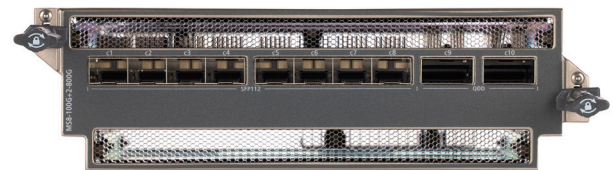
Built on Nokia's proven FP4 routing silicon, the half-slot Nokia MDA2-s packs a remarkable 1.0 Tb/s full-duplex (FD) capacity into a compact form factor. Its flexible breakout capabilities span 100G, 400G, and 800G, supporting an extensive portfolio of pluggable optics—including 400G QSFP-DD, 400G QSFP112, 100G QSFP28, and 100G SFP112—giving operators unparalleled freedom to optimize network performance and scale as needed.

The innovative design and intelligent packet processing of the Nokia MDA2-s drive advanced security with quantum-safe MACsec and enhanced MACsec (ANYsec) cryptography at full line rate across all adapters. Beyond cryptography, it offers precise IP payload filtering to mitigate DDoS attacks. It also delivers superior Quality of Service (QoS), fortifies control plane protection, and employs intelligent aggregation, ensuring networks stay secure, resilient, and efficient under all conditions.

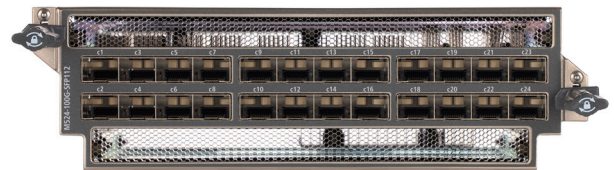
The Nokia MDA2-s is designed with versatility in mind, offering universal support for 800G QSFP-DD,



2-connector 100G QSFP28 +
2-connector 800G QSFP-DD MDA2-s



8-connector 100G SFP112 +
2-connector 800G QSFP-DD MDA2-s



24-connector 100G SFP112 MDA2-s

100G SFP112, and 100G QSFP28 connectors. This flexibility enables seamless integration of a broad range of optics, maximizing configuration options and empowering operators to tailor network designs perfectly to their evolving needs on the Nokia 7750 SR-s platform.

Designed for scalability and predictable performance, up to two Nokia MDA2-s variants can be deployed within a single Nokia 7750 SR-s Input/Output Module-s (IOM-s). Powered by Nokia's industry-leading FP4 technology, this combination gives operators the confidence to build secure, high-capacity, and future-ready networks that drive business success.

Features and benefits

- Enables a new generation of energy-efficient 800G QSFP-DD, QSFP112, and SFP112 optics, as routing systems densify, making the energy savings behind these optics increasingly compelling.
- Building upon and enhancing our quantum-safe 802.1AE MACsec foundation for Ethernet networks, the Nokia MDA2-s enables ANYsec, a low-latency, end-to-end, quantum-safe, multi-layer network cryptography solution for MPLS, Segment Routing, and IP networks, without compromising performance.
- Advanced DDoS mitigation capabilities enabled by the Nokia MDA2-s uses signature-based ACLs to provide first-level payload inspection at line rate to filter out DDoS traffic, without compromising performance.
- Ensuring superior QoS performance on the Nokia 7750 SR-s, the Nokia MDA2-s delivers full packet pre-classification and pre-buffering with priority tagging, to guarantee priority traffic for all critical flows regardless of network congestion.
- Resilient control plane protection and availability are enabled by configurable hardware-based ACL filters, which, combined with pre-classification and rate-limiting functions enable the Nokia MDA2-s to discard unwanted traffic before it reaches the control processor.
- Intelligent aggregation (IA) allows the Nokia MDA2-s to aggregate port capacity beyond its forwarding capacity in a deterministic way with full respect for QoS and packet priority, enabling the elimination of pre-aggregation layers, driving CAPEX and OPEX savings.
- Together, the performance of the Nokia 7750 SR-s IOM-s and MDA2-s is always deterministic. Even at full scale and with demanding processing-intensive applications, performance remains certain and throughput does not degrade, with no compromises.
- Modular, compact Nokia MDA2-s variants provide exceptional versatility, offering a mix-and-match approach to system configuration and connector expansion, with support for both MDA2-s and MDA-s's in the same IOM-s to meet diverse networking requirements, while reducing TCO and ensuring investment protection.
- Flexible licensing offered by the Nokia MDA2-s and IOM-s provides bandwidth options along with the scaling of egress hardware queues and policers for core, edge, and high-scale edge functionality.
- Nokia MDA2-s variants house the forwarding plane and associated memory, perform all MAC-layer and physical-layer functions, and provide faceplate connectors for pluggable optical transceivers and cables.
- The Nokia MDA2-s supports ITU-T Synchronous Ethernet (SyncE) and IEEE 1588v2 distribute precision network timing and synchronization over Ethernet.
- Field upgrades are simplified with hot-swappable Nokia MDA2-s variants that can be exchanged in-service to change media type and physical interfaces as needed.

Technical specifications

Table 1. Nokia 7750 SR-s MDA2-s variant overview

MDA2-s variants	Speed options	Optical transceiver support	Breakout options	Capacity (FD, max): Line rate/IA	IOM support
2-connector 100G QSFP28 + 2-connector 800G QSFP-DD MDA2-s	800G, 400G, 100G, 50G, 40G, 25G, 10G	QSFP112-DD, QSFP56-DD, QSFP112, QSFP28, QSFP28 QSFP28-DD, QSFP+	2 x 400G, 8 x 100G, 4 x 100G, 3 x 100G, 2 x 100G, 4 x 25G, 8 x 10G, 4 x 10G	1.5T IOM: 800G / 1.0T 3.0 IOM: 1.0T / -	1.5T / 3.0T IOM-s with two MDA2-s's 7750 SR-1s (modular) with two MDA2-s's
8-connector 100G SFP112 + 2-connector 800G QSFP-DD MDA2-s	800G, 400G, 100G, 50G, 40G, 25G, 10G	QSFP112-DD, QSFP112, QSFP56-DD, QSFP28, QSFP28, QSFP28-DD, QSFP+, SFP112, SFP56, SFP28, SFP+	2 x 400G, 8 x 100G, 4 x 100G, 3 x 100G, 2 x 100G, 4 x 25G, 8 x 10G, 4 x 10G	1.5T IOM: 800G / 1.0T 3.0 IOM: 1.0T / -	1.5T / 3.0T IOM-s with two MDA2-s's 7750 SR-1s (modular) with two MDA2-s's
24-connector 100G SFP112 MDA2-s*	100G, 50G, 25G, 10G	SFP112, SFP56, SFP28, SFP+	-	1.5T IOM: 800G / 1.0T 3.0T IOM: 1.0T / -	1.5T / 3.0T IOM-s with two MDA2-s's 7750 SR-1s (modular) with two MDA2-s's

* Available in a future release

Table 2. Nokia 7750 SR-s MDA2-s maximum density*

MDA2-s variants	Speed options	7750 SR-1s (modular)	7750 SR-2s	7750 SR-7s	7750 SR-14s
2-connector 100G QSFP28 + 2-connector 800G QSFP-DD MDA2-s	800G/400G/100G/ 10G	2/4/20/16	4/8/40/32	12/24/120/96	24/48/240/192
8-connector 100G SFP112 + 2-connector 800G QSFP-DD MDA2-s	800/400/100G/ 50G/25G/10G	2/4/20/ 16/20/56	4/8/40/ 32/40/112	12/24/120/ 96/120/336	24/48/240/ 192/240/672
24-connector 100G SFP112 MDA2-s**	100G/50G/ 25G/10G	20/20/ 40/24	40/40/ 80/48	120/120/ 240/144	240/240/ 480/288

* With intelligent aggregation (IA) ** Available in a future release

Table 3. Nokia MDA2-s dimensions

MDA2-s variants	Dimensions		
	Height	Width	Depth
2-connector 100G QSFP28 + 2-connector 800G QSFP-DD MDA2-s	6.02 cm (2.37 in)	20.35 cm (8.01 in)	24.26 cm (9.55 in)
8-connector 100G SFP112 + 2-connector 800G QSFP-DD MDA2-s	6.02 cm (2.37 in)	20.35 cm (8.01 in)	24.26 cm (9.55 in)
24-connector 100G SFP112 MDA2-s*	6.02 cm (2.37 in)	20.35 cm (8.01 in)	24.26 cm (9.55 in)

* Available in a future release

Note: Refer to the 7750 SR-s platform data sheet and product documentation for full system details on safety standards, compliance agency certifications and protocol support.



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, which is celebrating 100 years of innovation.

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.

Nokia operates a policy of ongoing development and has made all reasonable efforts to ensure that the content of this document is adequate and free of material errors and omissions. Nokia assumes no responsibility for any inaccuracies in this document and reserves the right to change, modify, transfer, or otherwise revise this publication without notice.

© 2025 Nokia

Nokia OYJ
Karakaari 7
02610 Espoo
Finland
Tel. +358 (0) 10 44 88 000

Document code: (July) CID214927