The Nokia 7750 SR-s Media Dependent Adapter2-se (MDA2-se) delivers high-density, power-efficient 800GE, 400GE and 100GE interfaces for highly scalable IP routing functions and services.

Nokia’s industry-leading FP5 routing silicon powers a new generation of MDA2-se adapters. Supporting a capacity of up to 3.0 Tb/s full duplex (FD) per adapter, the MDA2-se doubles the capacity over the FP4-based MDA-s. With intelligent aggregation (IA), this goes up to 6.4 Tb/s per adapter.

Available in four variants, the hot-swappable MDA2-se uses front faceplate connectors and supports 800G QSFP-DD, 400G QSFP112, 200G SFP-DD and CFP2-DCO. Flexible optical breakout options enable higher densities and include 2 x 400G, 8 x 100G, 4 x 100G, 2 x 100G, 4 x 50G, 10 x 10G and 4 x 25G from a single connector.

Leveraging FP5 silicon, the MDA2-se helps unlock the benefits of power-efficient 800GE routing. The Nokia FP5-based Input/Output Module2-se (IOM2-se) and MDA2-se combination consumes 75 percent less power than previous-generation FP4 silicon. FP5 supports 112G SERDES, enabling a new generation of power-efficient 800G QSFP-DD, 400G QSFP112 and 200G SFP-DD optics. As routing systems densify, optics become a larger part of overall system power consumption, and the power savings behind these optics quickly become compelling.

The MDA2-se houses the forwarding plane, performs all MAC-layer and physical-layer functions, and provides faceplate connectors for optical modules. Up to two half-slot MDA2-se adapters are housed in the IOM2-se and are supported in 7750 SR-2se, SR-7s and SR-14s systems. This combination
enables interface modularity, allowing operators exceptional configuration versatility to mix and match MDA2-se and IOM2-se variants to meet a wide range of networking requirements in a single slot.

Features and benefits

• Modular, compact, hot-swappable MDA2-se adapters and IOM2-se modules provide a flexible, mix-and-match approach to system configuration and connector expansion for reduced TCO and investment protection.

• Available in four variants supporting a range of capacities, densities and optics:
  - 14-connector 800G QSFP-DD and 4-connector 400G QSFP112 MDA2-se
  - 6-connector 800G QSFP-DD MDA2-se
  - 24-connector 200G SFP-DD MDA2-se
  - 6-connector CFP2-DCO MDA2-se*

• With universal connectors, the MDA2-se can support any speed on any connector, along with clear-channel 1 x 800G support with full breakout options on all connectors:
  - 800G QSFP-DD faceplate connectors support a wide range of compatible optics and breakout options, including: 1 x 800G (QSFP112), 2 x 400G (QSFP56-DD), 1 x 400G (QSFP112), 4 x 100G (QSFP112), 4 x 50G (QSFP112), 4 x 100G (QSFP-DD), 2 x 100G (QSFP28-DD), 1 x 100G (QSFP28), 10 x 10G (QSFP28) and 4 x 10G (QSFP+).
  - QSFP-DD faceplate connectors support coherent 400G ZR and 400G ZR+ pluggable transceivers.
  - 400G QSFP112 faceplate connectors support a range of compatible optics and breakout options including: 1 x 400G (QSFP112), 4 x 100G (QSFP112), 4 x 50G (QSFP112), 1 x 100G (QSFP28), 10 x 10G (QSFP28) and 4 x 10G (QSFP+).
  - 200G SFP-DD connectors are compatible with 100G SFP-DD, 50G SFP56, 25G SFP28 and 10G SFP+ pluggable modules.
  - CFP2-DCO* connectors support 100G and 2 x 100G in any connector.

• The MDA2-se enables the IOM2-se to support intelligent aggregation, a leading capability with Nokia FP5 network processing silicon. It enables the IOM2-se to support much higher capacity and density in a fully deterministic way.
  - 14-connector 800G QSFP-DD and 4-connector 400G QSFP112 MDA2-se
    - Up to 6.4 Tb/s of IA
  - 6-connector 800G QSFP-DD MDA2-se
    - 3.2 Tb/s of IA
  - 24-connector 200G SFP-DD MDA2-se
    - 3.2 Tb/s of IA
  - 6-connector CFP2-DCO MDA2-se*
    - 3.2 Tb/s of IA

• With the IOM2-se and MDA2-se, a flexible pay-as-you-grow licensing model provides a choice of entry points for immediate requirements and the ability to scale in-place for evolving needs with software-only upgrades. Capacity licenses provide bandwidth and intelligent aggregation mode options. Functional licenses scale services through control options on egress hardware queues and egress policers.

• Field upgrades are simplified because hot-swappable MDA2-se types can be exchanged in-service to change media type and physical interfaces as required.

• ITU-T Synchronous Ethernet (SyncE) and IEEE 1588v2 distribute precision network timing and synchronization over Ethernet.

• Pluggable optics with Digital Diagnostic Monitoring (DDM) is supported for extended operations, administration and maintenance (OAM) and improved installation, activation and troubleshooting.

* Targeted for a future release
### Technical specifications

**Table 1. Nokia 7750 SR-s MDA2-se variant maximum density***

<table>
<thead>
<tr>
<th>MDA2-se types (connector / optic)</th>
<th>Ethernet speed options</th>
<th>7750 SR-2se</th>
<th>7750 SR-7s</th>
<th>7750 SR-14s</th>
</tr>
</thead>
<tbody>
<tr>
<td>14-connector 800G QSFP-DD + 4-connector 400G QSFP112</td>
<td>800G/400G/100GBASE</td>
<td>32/64/256</td>
<td>96/192/768</td>
<td>192/384/1536</td>
</tr>
<tr>
<td>6-connector 800G QSFP-DD</td>
<td>800G/400GBASE</td>
<td>16/32</td>
<td>48/96</td>
<td>96/192</td>
</tr>
<tr>
<td>24-connector 200G SFP-DD</td>
<td>200G/100G</td>
<td>48/96</td>
<td>144/288</td>
<td>288/576</td>
</tr>
<tr>
<td>6-connector CFP2-DCO**</td>
<td>100G</td>
<td>24</td>
<td>72</td>
<td>144</td>
</tr>
</tbody>
</table>

* With intelligent aggregation.
** Targeted for a future release.

**Table 2. 7750 SR-s MDA2-se dimensions**

<table>
<thead>
<tr>
<th>MDA2-se type</th>
<th>Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Height</td>
</tr>
<tr>
<td>14-connector 800G QSFP-DD + 4-connector 400G QSFP112</td>
<td>6.01 cm (2.37 in)</td>
</tr>
<tr>
<td>6-connector 800G QSFP-DD</td>
<td>6.01 cm (2.37 in)</td>
</tr>
<tr>
<td>24-connector 200G SFP-DD</td>
<td>6.01 cm (2.37 in)</td>
</tr>
<tr>
<td>6-connector CFP2-DCO*</td>
<td>6.01 cm (2.37 in)</td>
</tr>
</tbody>
</table>

* Targeted for a future release.

Note: Refer to the 7750 SR-s platform data sheets 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.

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.

© 2023 Nokia

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

Document code: (June) CID213415