Nokia WaveLite Metro 20
2 x 10 Gb multiservice metro-campus aggregator

The Nokia WaveLite Metro 20 provides efficient aggregation of enterprise services onto 10 Gbps uplinks for enterprise network extension. Supporting Ethernet, Fibre Channel digital video, SDH/SONET or OTN, it is a simple and secure solution for enterprise connectivity and data center interconnect (DCI).

Applications for the WaveLite Metro 20 include:
• Enterprise campus or metro-area network service aggregation and fiber use optimization
• Network extension to enterprise operations, offices and data centers
• Service provider networks offering enterprise DCI or corporate WAN connectivity

Part of Nokia’s WaveLite family of private optical networking solutions, it is highly effective for use in enterprise DCI and campus extension or WAN applications where growing capacity needs have challenged the limits of embedded networks.

Features
• Compact 1RU chassis with low power consumption
• Flexible-field replaceable fan units and 1+1 redundant AC/DC power supply
• Central office practice (left-to-right airflow)
• Line-side interface: Two 10 Gbps XFP ports (DWDM or Black & White)
• Client side interfaces: Ethernet, Fibre Channel, SONET/SDH
• Optional ESCNP protection (via enforced license)

Benefits
• Multiple service or data rate aggregation and transport through a single, compact platform
• Flexible deployment options
• Fast, plug-and-play service activation
• High service availability and resilience
• Highly efficient
• Low total cost of ownership
The platform supports a mix of 10/100/1000 Ethernet, 1/2/4G Fibre Channel, DVB-ASI, SD-SDI, HD-SDI, 3G HD-SDI, SDH/SONET or OTN clients using industry-standard MSA SFP modules. On the line side, the platform utilizes two OTU-2 XFP transceiver modules, allowing for simple line-side configuration.

The WaveLite family is configured through a user-friendly, web-based GUI, allowing for rapid network turn-up. It also can be managed through the Nokia Network Services Platform (NSP) or by direct command line interface (CLI) commands.

Technical specifications

<table>
<thead>
<tr>
<th>Product configurations</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Dual 10G OTU2 muxponder</td>
<td>Up to 16 multiservice clients mapped over two independent OTU2 line-side links</td>
</tr>
<tr>
<td>Single, protected 10G OTU2 uplink</td>
<td>Up to 16 multiservice clients mapped over one, protected OTU2 line-side link</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Line-side characteristics</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Line rate</td>
<td>10.7092G (OTU-2)</td>
</tr>
<tr>
<td>Optical interface</td>
<td>2 x XFP transceiver modules (DWDM or Black &amp; White)</td>
</tr>
<tr>
<td>OTN support</td>
<td>ODU1 VCAT mapping into OTU2</td>
</tr>
<tr>
<td>FEC</td>
<td>ITU-T G.709 GFEC (RS-FEC); G.975.1 I.4 - G.975.1 I.7</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Client interfaces</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Service type</td>
<td>• Optical or copper 100/1000M Ethernet</td>
</tr>
<tr>
<td></td>
<td>• FC/FICON 1G, 2G or 4G</td>
</tr>
<tr>
<td></td>
<td>• STM1, STM4, STM16</td>
</tr>
<tr>
<td></td>
<td>• OC3, OC12, OC48</td>
</tr>
<tr>
<td></td>
<td>• DVB-ASI (270M)</td>
</tr>
<tr>
<td></td>
<td>• HD-SDI (1.485G), HD-SDI NTSC (1.483G), 3G-SDI (2.97G), 3G-SDI NTSC (2.967G), SD-SDI (270M)</td>
</tr>
<tr>
<td>Optical/copper interface</td>
<td>16 pluggable SFP transceivers</td>
</tr>
<tr>
<td>FEC (for OTN clients)</td>
<td>Zero FEC (for low-latency use) - Standards-based G709 FEC (GFEC)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Protection</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Line</td>
<td>1+1 ESCNP non-revertive protection (optional via activating license)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Network management</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Protocols</td>
<td>FTP, HTTP, HTTPS, ICMP, SNMPv1/v2c/v3, SSH, Syslog, Telnet</td>
</tr>
<tr>
<td>User interface</td>
<td>• Web browser over HTTP/HTTPS</td>
</tr>
<tr>
<td></td>
<td>• NSP over SNMP</td>
</tr>
<tr>
<td></td>
<td>• CLI over RS-232 or Telnet/SSH</td>
</tr>
<tr>
<td>Operations, administration and</td>
<td>• Facility loopback</td>
</tr>
<tr>
<td>maintenance (OAM)</td>
<td>• PRBS, event log</td>
</tr>
<tr>
<td></td>
<td>• Alarms</td>
</tr>
<tr>
<td></td>
<td>• Automatic laser shutdown (ALS)</td>
</tr>
<tr>
<td></td>
<td>• External alarms</td>
</tr>
<tr>
<td>Performance monitoring</td>
<td>• Intervals of Layer-1 errors, current and previous day errors</td>
</tr>
<tr>
<td></td>
<td>• Layer 1 PM for all services</td>
</tr>
<tr>
<td></td>
<td>• OTN PM for uplinks</td>
</tr>
<tr>
<td></td>
<td>• Optical power RX/TX levels for all optical ports</td>
</tr>
<tr>
<td></td>
<td>• Optical power RX/TX levels</td>
</tr>
</tbody>
</table>
### Visual indicators
- LED status indicators for optical ports
- Management and LAN ports, system
- Critical/Major/Minor and Power Supply alarms

### Software upgrade
- Hitless, dual image

### Management ports and interfaces
<table>
<thead>
<tr>
<th>Port Type</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control port</td>
<td>RS-232 (DB-9)</td>
</tr>
<tr>
<td>LAN port</td>
<td>1 x RJ-45 port (10/100MBaseT)</td>
</tr>
<tr>
<td>Management ports (MNG1 &amp; MNG2)</td>
<td>1x SFP (100Base-FX)</td>
</tr>
<tr>
<td>External alarms</td>
<td>1-input, 1 output (DB-9) port</td>
</tr>
</tbody>
</table>

### Physical and environmental
<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power supply</td>
<td>AC (100-240 VAC) and/or DC (-36 to -72 VDC), 68W max.</td>
</tr>
<tr>
<td></td>
<td>Single or dual feed, 1+1 redundant field-replaceable and hot-swappable units</td>
</tr>
<tr>
<td>Power consumption</td>
<td>56W typical (steady state), 64W maximum (at turn-up) under full load</td>
</tr>
<tr>
<td>Cooling unit</td>
<td>Hot-swappable fan unit</td>
</tr>
<tr>
<td>Operating temperature</td>
<td>5°C to +50°C</td>
</tr>
<tr>
<td>Operating relative humidity</td>
<td>5% to 85%</td>
</tr>
<tr>
<td>Chassis dimensions</td>
<td>- Height: 45 mm (1.77 in), 1 RU</td>
</tr>
<tr>
<td></td>
<td>- Width: 440 mm (17.32 in)</td>
</tr>
<tr>
<td></td>
<td>- Depth: 230 mm (9.05 in)</td>
</tr>
<tr>
<td>Weight</td>
<td>5.5 kg (12.1 lb) (max)</td>
</tr>
<tr>
<td>Mounting</td>
<td>19 in, ETSI, and 23 in</td>
</tr>
<tr>
<td>Design standards and compliance approvals</td>
<td>CE, FCC, RoHS, REACH, NEBS</td>
</tr>
</tbody>
</table>

### About Nokia
We create the technology to connect the world. Powered by the research and innovation of Nokia Bell Labs, we serve communications service providers, governments, large enterprises and consumers, with the industry’s most complete, end-to-end portfolio of products, services and licensing.

From the enabling infrastructure for 5G and the Internet of Things, to emerging applications in digital health, we are shaping the future of technology to transform the human experience. [networks.nokia.com](http://networks.nokia.com)

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.

Nokia is a registered trademark of Nokia Corporation. Other product and company names mentioned herein may be trademarks or trade names of their respective owners.

© 2019 Nokia

Nokia Oyj
Karaportti 3
FI-02610 Espoo, Finland
Tel. +358 (0) 10 44 88 000

Document code: SR1909037892EN (September) CID 201249