Product Overview

The Juniper Networks single-port VDSL2 Mini-Physical Interface Module (Mini-PIM) for the Juniper Networks SRX200 line provides VDSL2/ADSL2+/ADSL2 WAN connectivity ideal for remote branch deployments requiring high-speed WAN access for asymmetrical transmission rates up to 100 Mbps.

Product Description

The VDSL2 Annex A Mini-PIM is for use with the SRX200 line consisting of the Juniper Networks® SRX210 Services Gateway, SRX220 Services Gateway, and SRX240 Services Gateway products. The VDSL2 Mini-PIM supports Annex A over plain old telephone service (POTS), which includes one physical very high bit-rate digital subscriber line (VDSL) port. The VDSL2 Annex A (over POTS) Mini-PIM supports ADSL, ADSL2, or ADSL2+ fallback standards to provide the flexibility to support multiple DSL options.

The VDSL2 Mini-PIM has interoperability with the following DSLAM vendor products. For the complete and latest list, please refer to Juniper Networks technical publications.

<table>
<thead>
<tr>
<th>VDSL2 DSLAM</th>
<th>CHIPSET</th>
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<tbody>
<tr>
<td>ZyXEL IES-5005 IP DSLAM (Annex A and Annex B)</td>
<td>Broadcom</td>
</tr>
<tr>
<td>Alcatel 7302 DSLAM</td>
<td>Ikanos</td>
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</table>

Features and Benefits

- One RJ-11 VDSL2 interface
- ADSL/ADSL2/ADSL2+ backward compatibility with Annex A, Annex M support
- PTM or EFM (802.3ah) support
- Operation, Administration, and Maintenance (OAM) support for ADSL/ADSL/ADSL2+ mode
- Multilink Point-to-Point Protocol (MLPPP)—supported only when the VDSL2 Mini-PIM is operating in ADSL2 mode
- Support for maximum of 10 permanent virtual connections (PVCs)—only in ADSL/ADSL2/ADSL2+ mode
- Dying Gasp support (ADSL and VDSL2 mode)
- ATM quality of service (QoS)—ATM Adaptation Layer 5 (AAL5) with constant bit rate (CBR); variable bit rate, nonreal time (VBR-NRT); and unspecified bit rate (UBR) traffic types
Table 1: VDSL Features and Benefits

<table>
<thead>
<tr>
<th>FEATURE</th>
<th>FEATURE DESCRIPTION</th>
<th>BENEFIT</th>
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<tbody>
<tr>
<td>VDSL2 support</td>
<td>Up to 50 Mbps Upstream and up to 100 Mbps Downstream</td>
<td>Provides high-speed DSL WAN connectivity</td>
</tr>
<tr>
<td>ADSL/ADSL2/ADSL2+ fallback support</td>
<td>Same module can be used in ADSL, ADSL2, and ADSL2+ environments</td>
<td>Provides investment protection when upgrading WAN connectivity</td>
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<tr>
<td>Automatic configuration</td>
<td>Automatically configures the DSL line after negotiating with the DSL access multiplexer (DSLAM)</td>
<td>Minimizes configuration and support overhead</td>
</tr>
<tr>
<td>Dying Gasp support</td>
<td>Notifies the DSLAM, in the event of power loss, that the SRX Series is about to go offline</td>
<td>Notifies the network whenever unplanned power outages occur</td>
</tr>
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</table>

Specifications

ADSL-Supported Operating Modes
- ANNEX A
  - Auto
  - ANSI-DMT (ANSI T1.413)
  - ITU-DMT (G.992.1)
  - ITU-DMT-BIS (G.992.3)
  - ADSL2+ (G.992.5)
- ANNEX M
  - ITU-DMT-BIS (G.992.3)
  - ADSL2+ (G.992.5)

VDSL2 Profiles
- 8a, 8b, 8c, 8d: 50 Mbps
- 12a, 12b: 68 Mbps
- 17a: 100 Mbps
- Auto: Auto mode (default)

Supported MTU
- 1496 bytes

Dimensions (W x H X D) and Weight
- 3.75 x 0.8 x 5.9 in (9.5 x 2.0 x 14.5 cm)
- 0.25 lb

Environmental
- Operating temperature: 0° to 45° C
- Storage temperature: -40° to 70° C
- Relative humidity: 5% to 90% noncondensing

Diagnostics
- OAM F4 far loopback test
- OAM F4 near loopback test
- OAM F5 far loopback test
- OAM F5 near loopback test

LEDs
Mini-PIM LEDs indicate port status with the following LED states:
- SYNC—Green steady indicates that the DSL interface is trained; green blinking indicates training is in progress.
- TX/RX—Green blinking indicates that traffic is passing through; off indicates that no traffic is passing through.

Management Capabilities
- Telnet/Console/Web/Juniper Networks Network and Security Manager: Remote and local configuration, monitoring, and troubleshooting

Standards and Compliance

Safety
- CAN/CSA-C22.2 No. 60950-1-03/UL 60950-1 Third Edition, Safety of Information Technology Equipment
- EN 60950-1:2001+A11, Safety of Information Technology Equipment

EMC (Emissions)
- AS/NZS CISPR22 Class A
- EN-61000-3-2 Harmonic current emissions
- EN-61000-3-3 Voltage fluctuations
- FCC Part 15 Class A (USA)
- EN 55022 Class A (Europe)

Immunity
- EN 55024
- EN-61000-4-2 ESD
- EN-61000-4-3 Radiated Immunity
- EN-61000-4-4 EFT
- EN-61000-4-5 Surge
- EN-61000-4-6 RF Conducted Immunity
- EN-61000-4-11 Voltage Dips and Sags

European Telecommunications Standardization Institute (ETSI)
- ETSI EN-300 386-2: Telecommunication Network Equipment Electromagnetic Compatibility Requirements

Telecom
- FCC Part 68/TIA-968
- IC CS-03

Standards
- ANSI T1.413 II compliant (vendor version 1)
- G994.1 (G.HS) Version 05/03 + Amendment 1 (02/04)
  - Annex A (POTS overlay)
  - Appendix 1 (ATM Interface – Utopia)
- G992.1 (G.DMT; ADSL)
  - Annex A (POTS Overlay)
  - Appendix 1 (ATM Interface-Utopia)
- G992.3 (G.DMTbis; ADSL2) + Amendment 1, 2
  - Annex A (POTS overlay)
  - Appendix 1 (ATM Interface – Utopia)
- G992.5 (ADSL2+) + Corrigendum 1 + Amendment 2
  - Annex A (POTS overlay)
  - Appendix 1 (ATM Interface – Utopia)
Juniper Networks Services and Support

Juniper Networks is the leader in performance-enabling services and support, which are designed to accelerate, extend, and optimize your high-performance network. Our services allow you to bring revenue-generating capabilities online faster so you can realize bigger productivity gains and faster rollouts of new business models and ventures. At the same time, Juniper Networks ensures operational excellence by optimizing your network to maintain required levels of performance, reliability, and availability. For more details, please visit www.juniper.net/us/en/products-services/.

Ordering Information

<table>
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<tr>
<th>PART NUMBER</th>
<th>DESCRIPTION</th>
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<tr>
<td>SRX-MP-1VDSL2-A</td>
<td>1-port VDSL2 mini-PIM supporting Annex A, with fallback to ADSL2/ADSL2+</td>
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Juniper Networks Junos® Operating System Release

ADSL2/2+ Annex A and Annex B functionality is supported on the Juniper Networks SRX200 line in Junos OS 10.1 and later releases.

About Juniper Networks

Juniper Networks, Inc. is the leader in high-performance networking. Juniper offers a high-performance network infrastructure that creates a responsive and trusted environment for accelerating the deployment of services and applications over a single network. This fuels high-performance businesses. Additional information can be found at www.juniper.net.