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SINGLE-PORT ADSL2/2+ MINI-PHYSICAL INTERFACE MODULES (MINI-PIM)

Product Overview

The ADSL2/2+ Mini-Physical Interface Modules (Mini-PIMs) are for use with the Juniper Networks SRX200 line, which consists of Juniper Networks SRX210 Services Gateway, SRX220 Services Gateway, and SRX240 Services Gateway secure router products. The ADSL2/2+ Mini-PIMs, one supporting Annex A over plain old telephone service (POTS) and the other Annex B over ISDN, each include one physical asymmetric digital subscriber line (ADSL) port.

Product Description

Juniper Networks® single-port ADSL2/2+ Mini-PIMs for the SRX200 line can be used to provide ADSL WAN connectivity. The ADSL2/2+ Annex A (over POTS) and ADSL2/2+ Annex B (over ISDN) support ADSL, ADSL2, and ADSL2+ standards.

The ADSL2/2+ Mini-PIM has interoperability with the digital subscriber line access multiplexer (DSLAM) vendor products.

ADSL DSLAM	Chipset
Alcatel 7300 DSAM ATM DSLAM [Annex A]	ALCB
Adtran Total Access 1000 ATM DSLAM [Annex A]	Infinion
Paradyne BITSTORM 2600 IP DSLAM [Annex A and Annex B]	Broadcom
ZyXEL IES-1000 IP DSLAM [Annex A and Annex B]	TSTC [TI chipset]
ZyXEL IES-5005 IP DSLAM [Annex A and Annex B]	Broadcom

Features and Benefits

- Automatic detection of DSL line with DSLAM
- One RJ-11 (Annex A) or RJ-45 (Annex B) ADSL interface
- Supports ADSL, ADSL2, and ADSL2+ standards on the same interface card
- Dying Gasp support
- Single link fragmentation and interleaving (LFI) Multilink Point-to-Point Protocol (MLPPP)
- Supports ATM Adaption Layer 5 (AAL5) with constant bit rate (CBR), variable bit rate nonreal time (VBR-NRT), and unspecified bit rate (UBR) traffic types
- Support of latency modes fast and interleave
- Support for 10 permanent virtual circuits (PVCS)

Table 1: ADSL/ADSL2/ADSL2+ Features and Benefits

Feature	Feature Description	Benefit
ADSL/ADSL2/ADSL2+ support for Annex A, Annex B, and Annex M	Same module can be used in ADSL, ADSL2, and ADSL2+ environments.	Provides investment protection when upgrading WAN connectivity.
Automatic configuration	Automatically configures the ADSL line after negotiating with the DSL access multiplexer (DSLAM).	Minimizes configuration and support overhead.
Dying Gasp support	Notifies the DSLAM, in the event of power loss, that Juniper Networks SRX Series Services Gateways are about to go offline.	Notifies the network whenever unplanned power outages occur.

Specifications

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 B
  - Auto
  - ITU-DMT (G.992.1)
  - ITU-DMT-BIS (G.992.3)
  - ADSL2+ (G.992.5)
  - ITU-ANNEXB-UR2
- ANNEX M
  - ITU-DMT-BIS (G.992.3)
  - ADSL2+ (G.992.5)

Supported Maximum Speed

- For ANSI discrete multitone (DMT) modulation, 8 Mbps downstream and 896 Kbps upstream
- For G.992.1, 8 Mbps downstream and 1.2 Mbps upstream
- For G.992.3, 12 Mbps (Annex A) or 10 Mbps (Annex B) downstream and 1.2 Mbps upstream
- For G.992.5, 24 Mbps downstream and 1.2 Mbps upstream

ATM

- ATM Adaptation Layer 5 (AAL5)
- Quality of service (QoS) (CBR, VBR-NRT, and UBR)

Supported Maximum Transmission Unit (MTU)

- 1512[1] bytes

Supported Encapsulation

- ATM-PVC
- Ethernet-over-ATM

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)
- 0.17 lb

Environmental

- Operating temperature: 32º to 104º F (0º to 40º C)
- Storage temperature: –40º to 158º F (–40º to 70º C)
- Relative humidity: 5% to 90% noncondensing

Diagnostics

- Operation, Administration, and Maintenance (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 on indicates that the ADSL interface is trained; blinking means that training is in progress; off means that the interface is idle
- TX/RX – Green blinking indicates that traffic is passing through; off means that no traffic is passing through

Management Capabilities

- Telnet/Console/Web: Remote and local configuration, monitoring, and troubleshooting

Standards and Compliance

Safety

- CAN/CSA-C22.2 No. 60950-1 Information Technology Equipment
- UL 60950-1 Information Technology Equipment
- EN 60950-1 Information Technology Equipment
- IEC 60950-1 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)
- VCCI Class A (Japan)
- BSMI Class A (Taiwan)

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 Low Frequency Common Immunity
- EN-61000-4-11 Voltage Dips and Sags

European Telecommunications Standardization Institute (ETSI)

- ETSI EN-300386-2: Telecommunication Network Equipment Electromagnetic Compatibility Requirements

Telecom

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

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[1]Supported MTU is 1496 for Junos OS 9.5 release and 1512 for Junos OS releases 10.0 or higher.

Standards

- ANSI T1.413 II compliant (vendor version 1)
- G992.1 (G.DMT; ADSL)
  - Annex A (POTS overlay)
  - Annex B (ISDN overlay)
  - Appendix 1 (ATM Interface – Utopia)
- G992.3 (G.DMTbis; ADSL2) + Amendment 1,2
  - Annex A (POTS overlay)
  - Annex B (ISDN overlay)
  - Annex M
  - Appendix 1 (ATM Interface – Utopia)
- G992.5 (ADSL2+) + Corrigendum 1 + Amendment 2
  - Annex A (POTS overlay)
  - Annex B (ISDN overlay)
  - Annex M
  - Appendix 1 (ATM Interface – Utopia)

ADSL Performance

- ADSL performance varies according to a variety of factors, including DSLAM line card type, DSLAM software version, training rate, line noise, and loop length.

Juniper Networks Services and Support

Juniper Networks is the leader in performance-enabling services that are designed to accelerate, extend, and optimize your high-performance network. Our services allow you to maximize operational efficiency while reducing costs and minimizing risk, achieving a faster time to value for your network. Juniper Networks ensures operational excellence by optimizing the network to maintain required levels of performance, reliability, and availability. For more details, please visit **www.juniper.net/us/en/ products-services**.

Ordering Information

Model Number	Description
SRX-MP-1ADSL2-A	1-port ADSL2+ Mini-PIM supporting ADSL/ADSL2/ADSL2+ Annex A, Annex M
SRX-MP-1ADSL2-B	1-port ADSL2+ Mini-PIM supporting ADSL/ADSL2/ADSL2+ Annex B

Juniper Networks Junos Operating System Release

ADSL2/2+ Annex A and Annex B functionality is supported on the Juniper Networks SRX200 line of services gateways in Juniper Networks Junos® operating system 9.5 and higher releases.

About Juniper Networks

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