



8-WIRE (4-PAIR) G.SHDSL MINI-PHYSICAL INTERFACE MODULE (MINI-PIM)

Product Overview

The 8-wire (4-pair) G.SHDSL Mini-Physical Interface Module (Mini-PIM) is 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. This mini-PIM supports Annex A, Annex B, Annex F, and Annex G with maximum speed up to 22.784 Mbps.

Product Description

Juniper Networks® G.SHDSL Mini-PIM provides the physical connection to G.SHDSL network media types, receiving incoming packets from the network and transmitting outgoing packets to the network. The G.SHDSL Mini-PIM forwards packets for processing while performing framing and line speed signaling. The 8-wire RJ-45 port on the PIM can be split into 4 RJ11 telephone ports using the supplied adapter.

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

G.SHDSL DSLAM	CHIPSET
Adtran ATM DSLAM [Annex A]	Infineon
Paradyne IP DSLAM [Annex A and Annex B]	Broadcom
Lucent DSLAM	Globspan
Cisco DSLAM	Globspan
ZyXel IES-5005 IP DSLAM	Infineon

Features and Benefits

- 2-wire (4-port 2-wire) mode, 4-wire (2-port 4-wire) mode, and 8-wire (1-port 8-wire) mode support
- Annex A, Annex B, Annex F, and Annex G support
- Virtual circuits per mini-PIM (8 maximum)
- ATM-over-G.SHDSL framing
- ATM class-of-service (CoS) support
- ATM Operation, Administration, and Maintenance (OAM) support
- Dying Gasp support
- Multilink Point-to-Point Protocol (MLPPP) support on single interface and single link fragmentation and interleaving (LFI)
- Wetting current support
- Maximum transmission unit (MTU) size of 1496 bytes
- Noise margin support
- Point-to-Point Protocol over ATM (PPPoA) and Point-to-Point Protocol over Ethernet (PPPoE) over ATM encapsulation support
- Local loopback mode support

Product ships with an RJ45 to 4-port (2-wire) RJ11 adapter.

G.SHDSL DSLAM	CHIPSET	BENEFIT
8-wire (4-pair) G.SHDSL support	Same module can be used in 8-wire, 4-wire, or 2-wire environments.	Provides investment protection when upgrading WAN connectivity.
Dying Gasp support	Notifies the DSLAM, in the event of power loss, that Juniper Networks SRX Series Services Gateways for the branch are about to go offline.	Notifies the network whenever unplanned power outages occur.

SpecificationsG.SHDSL

Mini-PIM Data Rates

ANNEXES	OPERATING MODES	DATA RATES (MBPS)
Annex A and Annex B	2-wire (4 port 2-wire)	0.192 to 2.304
	4-wire (2 port 4-wire)	0.384 to 4.608
	8-wire (1 port 8-wire)	0.768 to 9.216
Annex F and Annex G	2-wire (4 port 2-wire)	0.768 to 5.696
	4-wire (2 port 4-wire)	1.536 to 11.392
	8-wire (1 port 8-wire)	3.072 to 22.784

Minimum Software Releases

- Juniper Networks Junos® operating system version 10.0: The G.SHDSL Mini-PIM with 8-wire functionality is supported on the SRX200 line.

Dimensions and Weight (W x H x D)

- 3.75 x 0.8 x 5.9 in (9.5 x 2.0 x 14.5 cm)
- 0.33 lb

Environmental

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

Diagnostics

Loopbacks

- Local loopback

Network Alarms

- Loss of signal defect
- Loss of sync word (LOSW)

Error Counters

- LOSW errors
- Cyclic redundancy check (CRC) errors
- Segment anomaly (SEGA) errors
- ES (errored seconds)
- SES (severely errored second)
- UAS (unavailable seconds)

LEDs

PIM LEDs indicate port status with the following LED states:

- STATUS – Green on means that port is online with no alarms or failures; amber blinking means that port is initializing; red on means that port has detected an alarm.
- LINE LEDs 0 -3 – Green is link active, blinking is training, off is link inactive.

Management Capabilities

- Telnet/Console/Juniper Networks J-Web Software: Remote and local configuration, monitoring, and troubleshooting

Standards and Compliance

Safety

- CAN/CSA-C22.2 No. 60950-1 Information Technology Equipment - Safety
- UL 60950-1 Information Technology Equipment - Safety
- EN 60950-1 Information Technology Equipment - Safety
- IEC 60950-1 Information Technology Equipment - Safety

EMC (Emissions)

- FCC Part 15 Class A (USA)
- EN 55022 Class A (Europe)
- AS 3548 Class A (Australia)
- 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

EI Standards

- ITU G.991.2 (G.SHDSL specification)
- ITU G.994.1 (G.hs specification)
- ITU G.997.1 (Physical Layer Management for DSL transceivers)

Juniper Networks Services and Support

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Ordering Information

PART NUMBER	DESCRIPTION
SRX-MP-8GSHDSL	8-wire (4-pair) G.SHDSL Mini-PIM

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.

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