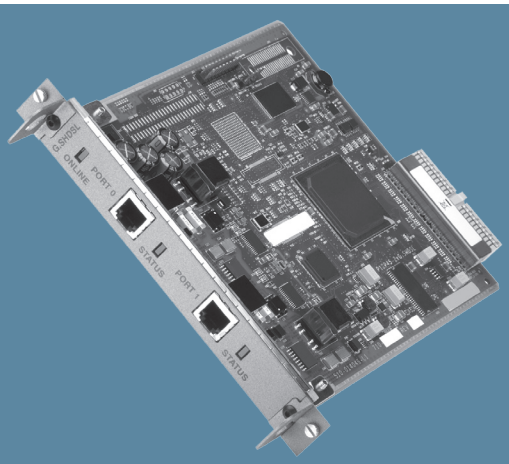

G.SHDSL PHYSICAL INTERFACE MODULE

Product Overview

The G.SHDSL Physical Interface Module (PIM) is for use with Juniper Networks SSG Series Secure Services Gateway including the SSG140, SSG320M, SSG350M, SSG520M and SSG550M and the Juniper Networks J Series Service Routers including the J2320, J2350, J4350, J6300 and J6350. This PIM can be configured as two ports of 2-wire or one port of 4-wire mode and supports Annex A and Annex B.

Product Description

Juniper Networks® G.SHDSL 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 PIM forwards packets for processing while performing framing and line-speed signaling.

Features and Benefits

Table 1: G.SHDSL PIM Features and Benefits

FEATURE	FEATURE DESCRIPTION	BENEFIT
2-wire and 4-wire G.SHDSL support	Same module can be used in 2-wire and 4-wire environments	Provides investment protection when upgrading WAN connectivity
Automatic configuration	Automatically configures the asymmetric digital subscriber line (ADSL) after negotiating with the DSL access multiplexer (DSLAM)	Minimizes configuration and support overhead
Dedicated network processor	Provides additional processing resources	Helps maintain predictable WAN performance by offloading the J Series or SSG Series CPU
Dying gasp support	Notifies the DSLAM, in the event of power loss, that the SSG Series or J Series is about to go offline	Notifies the network upon unplanned power outages

Specifications

- ATM over G.SHDSL framing
- EOC support for STU-R
- Noise margin support
- IP quality of service (QoS)
- ATM class of service (CoS) (only unspecified bit rate)
- Virtual circuits per PIM (30 max)
- Dying gasp

Wire Line Rates

- 2-wire line rate: 192 Kbps to 2.312 Mbps
- 4-wire line rate: 384 Kbps to 4.6 Mbps

Minimum Software Releases

- Juniper Networks Junos® operating system 7.4: The G.SHDSL PIM with 2-wire functionality is supported on J Series routers.
- Junos OS 7.6: G.SHDSL 4-wire functionality is supported on

J Series routers.

- ScreenOS 6.0: The G.SHDSL PIM with 2-wire and 4-wire functionality is supported on the SSG140 and SSG300 line.
- ScreenOS 6.0r2: The G.SHDSL PIM with 2-wire and 4-wire functionality is supported on the SSG300 line.

Dimensions and Weight (H x W x D)

- 0.63 x 5.45 x 6.5 in (1.6 x 13.8 x 16.5 cm)

Environmental

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

Diagnostics

Loopbacks

- Local loopback at GS2237
- Remote loopback at GS2237 towards line side

Network Alarms

- Loss of signal defect
- Loss of SYNC word

Error Counters

- Loss of sync word (LOSW) errors
- Cyclic redundancy check (CRC) errors
- Segment anomaly (SEGA) errors
- ES (error seconds)
- SES (severely error seconds)
- UAS (unavailable seconds)

LEDs

PIM LEDs indicate port status with the following LED states:

• Green	On steadily	Online with no alarms or failures
• Red	On steadily	Active with a local alarm; router has detected a failure

Management Capabilities

Telnet/Console/JWeb: Remote and local configuration, monitoring, and troubleshooting

Standards and Compliance

Safety

- CAN/CSA-C22.2 No. 60950/UL 60950 Third Edition, Safety of Information Technology Equipment
- EN 60950 (2000) Third Edition - Safety of Information Technology Equipment
- IEC 60950 (1999) Third edition - Safety of Information Technology Equipment

EMC (Emissions)

- FCC Part 15 Class B (USA)
- EN 55022 Class B (Europe)
- AS 3548 Class B (Australia)
- VCCI Class B (Japan)
- BSMI Class B (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

E1 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 Service 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

PART NUMBER	DESCRIPTION
JX-2SHDSL-S	2 Port 2-wire or 1 Port 4-wire G.SDHSL PIM - Spare

About Juniper Networks

Juniper Networks is in the business of network innovation. From devices to data centers, from consumers to cloud providers, Juniper Networks delivers the software, silicon and systems that transform the experience and economics of networking. The company serves customers and partners worldwide. Additional information can be found at **www.juniper.net**.

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