



E1 MINI-PIM

Product Overview

The Juniper Networks single-port E1 Mini-Physical Interface Modules (Mini-PIMs) for the Juniper Networks SSG20 Secure Services Gateway complement the five on-board 10/100 Ethernet interfaces with expanded WAN connectivity by providing an optional E1 Interface with integrated CSU/DSU and RJ48 connector.

Product Description

The Juniper Networks® E1 Mini-PIM includes one physical E1 port with an integrated channel service unit/data service unit (CSU/DSU). The combination of an E1 modem and an integrated CSU/DSU eliminates the need to deploy several separate external devices, reducing capital expenditures, saving valuable space, and simplifying management

Features and Benefits

- Fully integrated CSU/DSU
- Full and fractional E1 capabilities
- 56K and 64K modes support
- G.703, G.704, and G.706 E1 support
- Independent clock
- Loopback, bit error rate test (BERT), and long build out diagnostics
- Complete configuration and management by command-line interface (CLI), Web user interface, or Juniper Networks Network and Security Manager (NSM)

Specifications

Network Interface Specifications

- Transmit bit rate: 2.048 Mbps
- Receive bit rate: 2.048 Mbps
- Line encoding: HDB3
- Modes: Framed clear channel, unframed clear channel, framed fractional
- Framing: G704, G704 without CRC4, unframed

High-Level Data Link Control (HDLC)

- N x 64 Kbps or N x 56 Kbps, non channelized data rates (E1:N=1 to 31)
- CRC 16/32
- Shared flag
- Idle flag/fill
- Counters: Runts, giants, frame check sequence (FCS), error, abort error, align error

Interface Connector

- RJ-48

Specifications (continued)

System Timing

- External (network recovered clocks)

Dimensions (W x H x D) and Weight

- 3.75 x 0.8 x 5.9 in (9.5 x 2 x 14.5 cm)
- 0.18 lb (81.6 g)

Environmental

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

Loopback Diagnostics

- Local, remote, payload
- Test patterns (BERT)
- All ones
- All zeros
- Alternating ones and zeros (AA/55)
- 1:3 or 1 in 4 pattern
- 1:7 or 1 in 8 pattern
- 3:24 - 3 bits set in every 24 bits
- QRSS20 (Modified PRBS 2²⁰-1, with 14 zero suppression)
- PRBS 2⁷-1
- PRBS 2⁹-1 (as specified in ITU-T O.153)
- PRBS 2¹¹-1 (as specified in ITU-T O.153)/2047 pattern
- PRBS 2¹⁵-1 (as specified in ITU-T O.151/O.153)
- PRBS 2²⁰-1 (as specified in ITU-T O.153)
- Programmable word or 32-bit programmable pattern
- Loss of signal (LOS), loss of framing (LOF), alarm indication signal (AIS), yellow alarm (YLW)

Error Counters

- Controlled slipped seconds (CSS or CS)
- Line errored seconds (LES)
- Errored seconds (ES)
- Bursty errored seconds (BES)
- Severely errored seconds (SES)
- Severely errored framing seconds (SEFS)
- Loss of signal seconds (LOS)
- Loss of framing seconds (LOFS)
- UAS unavailable seconds (UAS)

LEDs

PIM LEDs indicate port status with the following LED states:

- Alarm – solid yellow
- Loopback – solid yellow when loopback enabled
- CD (Carrier Detect) – solid green when line is synchronized

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
- IEC 60950-1:2001 First Edition, Safety of Information Technology Equipment

EMC (Emissions)

- FCC Part 15 Class B
- EN 55022 Class B
- AS/NZS 3548 Class B
- VCCI Class B

Immunity

- 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

European Telecommunications Standardization Institute (ETSI)

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

Telecom

- TBR12/13
- ACA TS 016

E1 Standards

- ITU-T G.703
- ITU-T G.704
- ITU-T G.706
- ITU-T G.823
- ITU-T G.826

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
JXM-1E1-S	1-port E1 Mini-Physical Interface Module

The E1 Mini-PIM is supported in Juniper Networks ScreenOS® Software 5.4 or higher on the SSG20.

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.

Corporate and Sales Headquarters

Juniper Networks, Inc.
1194 North Mathilda Avenue
Sunnyvale, CA 94089 USA
Phone: 888.JUNIPER (888.586.4737)
or 408.745.2000
Fax: 408.745.2100
www.juniper.net

APAC Headquarters

Juniper Networks (Hong Kong)
26/F, Cityplaza One
1111 King's Road
Taikoo Shing, Hong Kong
Phone: 852.2332.3636
Fax: 852.2574.7803

EMEA Headquarters

Juniper Networks Ireland
Airside Business Park
Swords, County Dublin, Ireland
Phone: 35.31.8903.600
EMEA Sales: 00800.4586.4737
Fax: 35.31.8903.601

To purchase Juniper Networks solutions, please contact your Juniper Networks representative at 1-866-298-6428 or authorized reseller.

Copyright 2011 Juniper Networks, Inc. All rights reserved. Juniper Networks, the Juniper Networks logo, Junos, NetScreen, and ScreenOS are registered trademarks of Juniper Networks, Inc. in the United States and other countries. All other trademarks, service marks, registered marks, or registered service marks are the property of their respective owners. Juniper Networks assumes no responsibility for any inaccuracies in this document. Juniper Networks reserves the right to change, modify, transfer, or otherwise revise this publication without notice.