

# Juniper Networks T1 Mini-PIM



The Juniper Networks optional single-port T1 Mini Physical Interface Modules (Mini-PIM) for the SSG 20 platform complement the five on-board 10/100 Ethernet interfaces with expanded WAN connectivity. The T1 Mini-PIMs include one physical T1 port with an integrated CSU/DSU.

The combination of a T1 modem and an integrated CSU/DSU eliminates the need to deploy several separate external devices, thereby consolidating devices to reduce capital expenditures, saving valuable space and simplifying management.

## Features

- Fully integrated CSU/DSU
- Full and fractional T1 capabilities
- 56K & 64K modes support
- ANSI T1.102, T1.107, T1.403 T1 support
- Independent Clock
- Loopback, BERT, FDL, and Long Buildout diagnostics
- Complete configuration and management by CLI, WebUI, or NetScreen Security-Manager

## Specifications

Product Number	Description
JXM-1T1-S	1 port T1 Mini Physical Interface Module

### ScreenOS Software Release

The T1 Mini PIM is supported in ScreenOS 5.4 on the SSG 20

### Network Interface Specifications

<b>Transmit bit rate:</b>	1.544 Mbps
<b>Receive bit rate:</b>	1.544 Mbps
<b>Line encoding:</b>	AMI B8ZS
<b>Modes:</b>	Framed Clear Channel Fractional
<b>Framing:</b>	Superframe (D4/SF) Extended Superframe (ESF)

### HDLC Features

- N x 64 Kbps or N x 56 Kbps, nonchannelized data rates (T1:N = 1 to 24)
- CRC 16/32
- Shared Flag
- Idle flag/fill
- Counters: Runts, Giants, FCS, Error, Abort Error, Align Error

### Interface Connector

- RJ-48

### System timing

- External (network recovered clocks)

### Dimensions (W x L x H) and Weight

- 3.75" x 5.9" x 0.80"
- 9.5 cm x 14.5 cm x 2.0 cm
- 0.18 lb. (81.6g)

## Environmental

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

## 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 2^20-1, with 14 zero suppression)
- PRBS 2^7-1
- PRBS 2^9-1 (as specified in ITU-T O.153)
- PRBS 2^11-1 (as specified in ITU-T O.153)/2047 pattern
- PRBS 2^15-1 (as specified in ITU-T O.151/O.153)
- PRBS 2^20-1 (as specified in ITU-T O.153)
- Programmable word or 32-bit programmable pattern
- Network (T1) alarms
- LOS, LOF, AIS, 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 LED's 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 sync'ed

## Standards and Compliance

### Agency/Regulatory 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

#### ETSI

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

#### Telecom

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

#### T1 Standards

- ANSI T1.102
- ANSI T1.107
- ANSI T1.403
- Telcordia GR-499-CORE



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