GX 550



Physical Interface Modules

- 4-port OC3/STM-1 Physical Interface Module
- Single-port OC12/STM-4 Physical Interface Module
- Single-port OC48/STM-16 Physical Interface Module

Module overview

The Ascend GX 550 Physical Interface Modules reside in the modular GX 550 platform and provide industry-standard SONET/SDH connections to external equipment. Up to four Physical Interface Modules are paired with a Base I/O Module that provides the higher layer ATM cell processing. Each Base I/O Module can host four 4-port OC3/STM-1 Physical Interface Modules, four single-port OC12/STM-4 Physical Interface Modules or one single-port OC48/STM-16 Physical Interface Module. For additional flexibility, each Base I/O can support a mix of 4-port OC3/STM-1 and single port OC12/STM-4 modules.

The GX 550 provides industry-leading port density with 160 OC3/STM-1, 40 OC12/STM-4, and 10 OC48/STM-16 ports per switch.

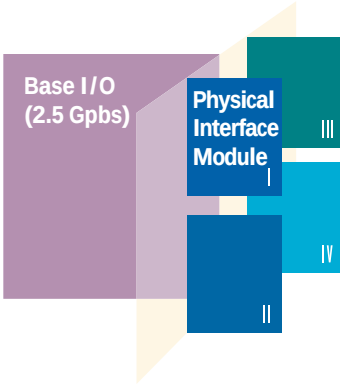
Ascend's Physical Interface Modules support 1+1 port and line card protection using Automatic Protection Switching (APS) that provides the GX 550 with the resiliency to maintain network integrity. Both port and line protection can span across Base I/O and Physical Interface Modules.

The Physical Interface Modules provide the flexibility for provisioning today's ATM networks. With Ascend's Logical Port assignments, each port is software-independently configurable as a User Network Interface (UNI 3.0, UNI 3.1, or UNI 4.0), Interim Inter-switch Signaling Protocol (IISP) Interface, Private Network Node Interface (PNNI), Broadband Inter-Carrier Interface (B-ICI), or Direct Trunk.

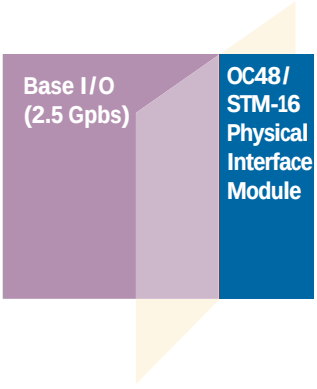
Operational features

- Four OC3/STM-1 interfaces at 155 Mbps
- Single OC12/STM-4 interface at 622 Mbps
- Single OC48/STM-16 interface at 2.5 Gbps
- SONET/SDH Performance Monitoring and Alarm Surveillance
- Per-port line card spanning protection through 1+1 APS
- Singlemode Fiber option: Laser-based Intermediate Reach and Long Reach fiber optic transceivers
- Multimode Fiber option: LED-based fiber optic transceiver
- Transmit clocking options for loop timed, local, and system timing references
- Hot removal and insertion

Physical Interface Module Support



Up to four Physical Interface Modules can be supported by a single Base I/O Module.



Single 1-port OC48/STM-16 Physical Interface Module

ASCEND

Specifications

Physical dimensions

4-port OC3/STM-1 Physical Interface Module
- Size: .9 in x 10 in x 5 in (2.25 cm x 25.4 cm x 12.7 cm)

1-port OC12/STM-4 Physical Interface Module
- Size: .9 in x 10 in x 5 in (2.25 cm x 25.4 cm x 12.7 cm)

1-port OC48/STM-16 Physical Interface Module
- Size: 1.8 in x 20 in x 5 in (4.6 cm x 59.8 cm x 12.7 cm)

Power requirements

- 4-port OC3/STM-1 Physical Interface Module: 18 watts
- 1-port OC12/STM-4 Physical Interface Module: 18 watts
- 1-port OC48/STM-16 Physical Interface Module: 45 watts

Temperature range

- 0-50°C (32-122°F)

Physical interfaces

- ATM cell bearing OC3/STM-1 (155.52 Mbps) port
- ATM cell bearing OC12/STM-4 (622.08 Mbps) port
- ATM cell bearing OC48/STM-16 (2.488 Gbps) port

Physical connections

Subscriber Connector (SC)

Signal distance levels

- Singlemode IR (Laser) Optics

	OC3/STM-1	OC12/STM-4	OC48/STM-4
	Up to 15 km	Up to 15 km	Up to 15 km
Tx Power	-8 dBm, -15 dBm	-8 dBm, -15 dBm	0 dBm, -5 dBm
Rx Sensitivity	-8 dBm, -28 dBm	-8 dBm, -28 dBm	0 dBm, -18 dBm
Loss Budget	0-12 dB	0-12 dB	0-12 dB

- Singlemode LR (Laser) Optics

	OC3/STM-1	OC12/STM-4
	Up to 40 km	Up to 40 km
Tx Power	0 dBm, -5 dBm	+2dBm, -3dBm
Rx Sensitivity	-10 dBm, -34 dBm	-8 dBm, -28 dBm
Loss Budget	10-28 dB	10-24 dB

- Multimode (LED) Optics:

	OC3/STM-1	OC12/STM-4
	Up to 2 km	Up to 500 m
Tx Power	-14 dBm, -20 dBm	-14 dBm, -20 dBm
Rx Sensitivity	-14 dBm, -30 dBm	-14 dBm, -26 dBm
Loss Budget	0-10 dB	0-6 dB

Status indications per module

LED State	Status
Good LED Lit	Normal Operation
Failed LED Lit	Module Failure

NEBS compliance

- GR-63-CORE
- GR-1089-CORE

Agency approvals

- EN55022 Class A (CISPR)
- EN50082-1
- EN61000-3.2, 3.3
- FDA and IEC Class 1
- FCC Part 15 Class A
- UL 1950 3rd edition

SONET standards (OC3, OC12, OC48)

- ATM Forum UNI 3.0/3.1/4.0
- ATM Forum AF-PHY-004600
- ANSI T1.105
- ANSI T1.106
- ANSI T1.231
- ANSI T1.646
- Bellcore TR-NWT-001112
- Bellcore GR-253-CORE
- RFC SONET 1595

SDH standards (STM-1, STM-4, STM-16)

- ATM Forum UNI 3.0/3.1/4.0
- ITU G.707
- ITU G.708
- ITU G.709
- ITU G.783
- ITU G.957

Ordering information

Description	Product code
4-port OC3/STM-1 SMF IR Physical Interface Module	11580
4-port OC3/STM-1 SMF LR Physical Interface Module	11581
4-port OC3/STM-1 MMF Physical Interface Module	11582
1-port OC12/STM-1 SMF IR Physical Interface Module	11590
1-port OC12/STM-1 SMF LR Physical Interface Module	11591
1-port OC12/STM-1 MMF Physical Interface Module	11592
1-port OC48/STM-16 SMF IR Physical Interface Module	11600

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Ascend markets the B-STDX, CBX, IP, MAX, Multiband, MultiDSL, Navis, Pipeline, SA, SecureConnect and STDX families of products. Ascend products are available in more than 30 countries worldwide.

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