

# OC-3/STM-1 Access Module

SDH/SONET access for service migration in Metro networks

## MODULE



The 4-port OC-3/STM-1 Access Module enables seamless service integration and migration of SDH/SONET services to IP/Ethernet.

The 4-port OC-3/STM-1 Access Module for the Nimbra 300 series of multiservice switches enables seamless service integration and migration in Metro networks.

The OC-3/STM-1 Access Module is a 4-port plug-in unit for the Nimbra 300 Series of multi-service switches. The module features four independent bi-directional Small Form-factor Pluggable ports (SFP) that can be fitted with various optical modules for different media.

OC-3/STM-1 is a commonly used universal interface in the telecom community. The OC-3/STM-1 Access Module is a highly versatile access solution, suitable for various applications, including:

- DSLAM backhaul
- POS router interconnect
- Voice exchange interconnect
- Interconnect of ATM switches
- SDH/SONET network bridging
- Distributed cross-connect

### Multi-service Transport

The Nimbra platform provides integrated transport of SDH/SONET services in addition to transport of IP/Ethernet and native audio/video services, over the same infrastructure. This allows for efficient and flexible service integration and migration solutions where SDH/SONET services are transported side-by-side IP/Ethernet and native Audio/Video services.

Nimbra customers can utilize their Nimbra network for a variety of different transport applications and can easily offer their customers new and exciting services on the same infrastructure without risking quality of service.

Each interface provides a channelized ITS transport with hard resource allocation throughout the Nimbra network. The Nimbra platform features full switching support and both unicast and multicast transport is provided with 100% QoS, guaranteed.

### Unprecedented Availability

The 4 x OC-3/STM-1 Access Module has extensive fault and performance monitoring options and supports dynamic network restoration and in-service hot swap for highest availability. It is easily managed by means of CLI, Web GUI and SNMP.

# KEY FEATURES

## Standards compliant.

The ports complies to applicable SONET / SDH / DTM standards.

## 4 or 12 independent channels.

4 (STS-3c SPE / VC-4) or 12 (STS-1 SPE) independent bi-directional channels that can be directed to different end destinations.

## Pluggable optics.

Each of the 4 OC-3 / STM-1 ports is equipped with a Small Form-factor Pluggable (SFP) housing that can be fitted with SFP modules for different distances and fiber media.

## 1+1 protection.

Support for 1+1 protection through network, with <50ms switching time.

## Multicast support.

An OC-3 / STM-1 stream can be multicasted in a point-to-multipoint fashion for e.g. media distribution services.

## Bandwidth effective.

Each stream uses only about 150 Mbps of network capacity.

## Performance monitoring.

Standard performance metrics with G.826 style presentation of performance.

## Hot swap.

Supports in-service swapping of the module for low unavailability.

## Ease of handling.

Managed by CLI, Web GUI or SNMP. Can also be managed by Nimbra Vision™ NMS.

# TECHNICAL SPECIFICATIONS

**Form factor:** Plug-in unit to Nimbra 300 series uses 1 slot

## Laser options:

Small Form-factor Pluggable (SFP)  
STM-1 I-1.1 / OC-3 SR-1 (MM,1310nm)  
STM-1 S-1.1 / OC-3 IR-1 (SM,1310nm)  
STM-1 L-1.1 / OC-3 LR-1 (SM,1310nm)  
STM-1 L-1.2 / OC-3 LR-2 (SM,1550nm)

## Framing:

OC-3: STS-3c, ANSI T1.105  
STM-1: STM-1; ITU-T Rec G.707

## Mapping:

SONET: STS-3c SPE / 3 x STS-1 SPE  
SDH: VC-4

## Fault management:

SONET/SDH: LOS, LOF, LOP, SF, AIS, RDI (LED and Element Manager)

## Performance management:

ITU-T G.826 based  
Bins: 24h, 15min  
Parameters: ES, SES, BBE, UAS

## Maintenance:

Hardware: Hot swap  
Firmware: Remote download

**Power consumption:** <15W

## Management:

SNMP: v1/v2c/v3  
ElementManager: Web GUI, CLI  
Network Manager: Nimbra Vision

## Timing modes:

Loop-timing: Slaved to SDH/SONET network  
Source-timing: Slaved to on-board oscillator:  
Standard option: SMC/G.813 option 2  
Stratum option: Stratum 3/ G.813 option 1

## Environmental conditions:

Operating temp: 0 to 50 °C (32 to 122 °F)  
Storage temp: -30 to 65°C (-22 to 149 °F)  
Relative humid: 10% to 90% (non-condensing)

## Regulatory compliance:

Safety: UL60950  
EN60950  
Laser safety: CFR 21 1040.10/11  
EMC: FCC 15 Class A  
EN 300 386  
CE marking: 93/68/EEC

## Ordering information:

NPS0020-3S31 OC-3/STM-1 Access Module  
NPA0016-SS11 SFP-module OC-3/STM-1 SR  
NPA0016-LJ11 SFP-module OC-3/STM-1 IR  
NPA0016-LL11 SFP-module OC-3/STM-1 LR1  
NPA0016-VL21 SFP-module OC-3/STM-1 LR2

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