

OC-48/STM-16 Trunk Module

High quality SDH/SONET trunk for the Nimbra 600 series

MODULE



The 4-port OC-48/STM-16 Trunk Module enables high-quality multiservice transport over standard OC-48/STM-16 links.

The OC-48/STM-16 Trunk Module for the Nimbra 600 series of multiservice switches enables high-quality transport of video, audio and data over standard OC-48/STM-16 links.

The 4-port OC-48/STM-16 Trunk Module is a high capacity plug-in interface for the Nimbra 600 of multiservice switches. It features the same high quality transport found on all Nimbra trunk modules and enables trouble-free service transport of real-time sensitive media services, with guaranteed QoS.

The module provides a synchronous switched transport layer over OC-48/STM-16 infrastructure for efficient media transport. It features on-board circuitry to eliminate jitter and wander impairments from e.g. pointer justifications in the underlying transport layer.

Highest Bandwidth Utilization

The OC-48/STM-16 Trunk Module enables service multiplexing with granular bandwidth allocation in steps of 0,5 Mbps to provide true multi-service transport of video, audio and data, with hard QoS requirements, over SDH/SONET links.

With a link overhead of only 1.5% and support for non-hierarchical service switching/multiplexing, the Nimbra architecture provides industry leading network utilization.

Multi-service Transport

The OC-48/STM-16 Trunk Module features 4 independent Small Form-factor Ports (SFPs) that can be fitted with various optical modules for different media. The module is suitable for all network topologies, including ring, point-point, bus, and mesh.

The different Nimbra SDH/SONET trunk modules provide a very flexible core multi-service switching system for demanding video, audio and data applications, with guaranteed 100% QoS.

Unprecedented Availability

The 4 x OC-48/STM-16 Trunk Module provides extensive ITU-T G.826 compliant fault and performance monitoring options and supports dynamic network restoration and in-service hot swap for high availability. It is easily managed through CLI, Web GUI and SNMP.

KEY FEATURES

Standards compliant.

The port complies with applicable SONET / SDH / DTM standards.

Pluggable optics.

Each of the 4 OC-48/STM-16 ports is equipped with a Small Form-factor Pluggable (SFP) housing that can be fitted with SFP modules for different distances and fiber media.

Very high utilization.

Each trunk port can carry up to 2359,296 Mbps payload. This corresponds to a link overhead of only 1.5% as compared to for example the ATM cell tax of 10%. Non-hierarchical switching/multiplexing of services enhances utilization significantly.

Carrier class.

The Nimbra 680/688 and its modules are designed to meet NEBS level 3 specifications for trouble-free operation.

Multiservice operation.

Each port can carry any mix of data, video, audio and voice traffic.

Multicast support.

The trunk module supports QoS guaranteed multicast of all service streams (i.e. Ethernet, DVB-ASI MPEG, 270 Mbps SDI, PDH etc.)

Extremely low jitter and wander.

The module has on-board circuitry to eliminate jitter and wander impairments from e.g. pointer justifications in the underlying transport layer.

Performance monitoring.

Standard performance metrics with G.826 style presentation of performance for a consolidated link performance view.

Hot swap.

Supports in-service swapping of the module for high availability.

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 600 series, uses 1 slot

Laser options:

Small Form-factor: STM-16 I-16 / OC-48 SR-1 (SM,1310nm, 2 km)
Pluggable (SFP): STM-16 S-16.1 / OC-48 IR-1 (SM,1310nm, 15 km)
STM-16 L-16.1 / OC-48 LR-1 (SM,1310nm, 40 km)
STM-16 L-16.2 / OC-48 LR-2 (SM,1550nm, 80 km)
CWDM 8 wavelengths (SM, 1470-1610nm, 80km)

Framing:

OC-48: STS-48c, ANSI T1.105
STM-16: STM-16, ITU-T Rec G.707

Mapping:

SONET: STS-48c SPE
SDH: VC-4-16c
DTM: VC synchronous; ETSI ES 201 803-4

Fault management:

SONET/SDH: LOS, LOF, LOP, AIS, DEG, EXC, PLM, TIM, UNEQ, 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: < 40W

Management:

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

Timing and Synchronization:

Timing modes:
Locked: OC-48/STM-16; DTM network sync
Hold-over:
Free-running: <4.6 ppm
Built-in oscillator: Stratum 3 / G.813 option 1

Environmental conditions:

Operating temp: 5 to 40 °C (41 to 104 °F)
(short term): -5 to 55 °C (23 to 131 °F)
Storage temp: -40 to 70°C (-40 to 156 °F)
Relative humid: 10% to 90% (non-condensing)

Regulatory compliance:

Safety: UL60950-1
EN60950-1
Laser safety: CFR 21 1040.10/11
EMC: FCC 15 Class A
EN 300 386
CE marking: 93/68/EEC

Ordering information:

NPS0025-6001 4 x OC-48/STM-16 Trunk Module
NPA0022-LS11 SFP-module OC-48/STM-16 SR
NPA0022-LJ11 SFP-module OC-48/STM-16 IR
NPA0022-LL11 SFP-module OC-48/STM-16 LR1
NPA0022-VL21 SFP-module OC-48/STM-16 LR2
NPA0023-XXXX SFP Module STM-1/4/16 LR CWDM XXXX
(XXXX = 1470, 1490, . . . , 1610)

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