D500 OC-3/STM-1 Trunk Unit

Transmission Rate: 155 Mbps

Key Applications: Provides a high bit rate optical connection and physical interface to the network.

The Nokia D500 Multiservice Access Platform provides the industry's most powerful balance of performance, scalability, and solutions for evolving networks. The high-density, high-capacity D500 supports a wide range of services from Fast Internet access to emerging higher bandwidth multimedia/entertainment services such as video on demand, digital broadcast TV, and interactive TV. The D500 is designed to provide operators with the ability to evolve their networks from ATM to IP in a seamless manner, as IP becomes the prevalent protocol in the access network.

OC-3/STM-1 Trunk Unit

As part of the family of D500 trunk units, the OC-3/STM-1 trunk unit meets the needs of network operators by offering an interface that provides a high bit rate optical connection from the D500 or D500 RAM over single mode optical fiber towards a co-located or remote network switches or transmission systems such as ATM switches and SONET/SDH nodes.

The OC-3/STM-1 trunk unit integrates the control unit (combined unit), which contains the network management processor and system processor along with the ATM Port Controller (ATM QoS traffic management matrix) and ATM switching fabric (5Gbps non-blocking). The control unit supports ATM circuit aggregation, ATM VC Cross Connection, and full ATM QoS in a

redundant configuration, offering 1+1 hot standby protection with both facility protection and unit protection. ATM QoS enables service providers to differentiate DSL-based services to their business customers by prioritizing data, voice, and video traffic across their networks. ATM QoS helps service providers enhance their network cost structure and profitably grow their business.

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The OC-3/STM-1 trunk unit is offered in short haul, long haul, and multimode optical versions thus offering a variety of reach options for the operator. Typical reach of this unit, over single mode fiber, is approximately 15 km (50 Kft) for the short haul version or approximately 40 km (130 Kft) for the long haul version. This particular version of the trunk card enables remote operation through remote cabinets. The multimode version can support connections over a 2 km (6.5 Kft) range and is typically used for connections within a CO, as multimode fiber is not generally available in street-fiber cable networks outside of the CO. The trunk unit is user configurable to operate in either the OC-3 (SONET) mode or the STM-1 (SDH) mode.

Optical Interface

The three variants of the OC-/STM-1 interface are:
- OC-3/STM-1 S1.1 single mode (short haul)
- OC-3/STM-1 L1.1 single mode (long haul)
- OC-3/STM-1 multimode

Industry Specifications

The trunk unit adheres to the following industry specifications:
- ITU-T G.703
- ITU-T G.707
- ITU-T G.813
- ITU-T G.841
- ITU-T G.957
- GR-253-CORE

Environmental Conformance

The trunk unit conforms to the following environmental requirements:
- NEBS GR-63-CORE
- ETS 300 019-1-1: Class 1.2
- ETS 300 019-1-2: Class 2.3
- ETS 300 019-1-3: Class 3.1E

Electromagnetic Conformance

The trunk unit conforms to the following electromagnetic requirements:
- TOSS Tk-10/95E/c EN
- GR-1089-CORE
- EN 300 386
- EN 55022

ATM QoS Flavors

CBR, VBR-rt, VBR-nrt, UBR, UBR+

Provisioning Parameters

The following provisioning parameters are supported for the OC-3/STM-1 trunk unit.
- Facility type – default is SONET for the ANSI subrack and SDH for the ETSI subrack

Performance Monitoring

The OC-3/STM-1 trunk unit supports the following performance monitoring test parameters for both near-end and far-end thresholds:
- Section Severely Errored Framing seconds
- Line Errored seconds
- Line Severely Errored seconds
- Line Code Violation-Path
- Line Unavailable seconds
- Path Errored seconds
- Path Severely Errored seconds
- Path Code Violations
- Path Unavailable seconds

Physical Specifications

Interfaces per card
One interface per trunk unit, with one unit supporting up to 19 line cards for the ANSI subrack and 15 line cards for the ETSI subrack.

Variants
TRK155SH – OC-3/STM-1 trunk unit, single mode, short haul

TRK155LH – OC-3/STM-1 trunk unit, single mode, long haul

TRK155MM – OC-3/STM-1 trunk unit, multimode

Connector types
LC: Single mode interfaces

MTRJ: Multimode interface

Card dimensions
1.0 in. wide x 15.75 in. high x 8.27 in. deep (25 mm x 400 mm x 210 mm)

Card weight
~ 4 lbs

Operating humidity
0 to 95% (non-condensing)

Operating temperature
–40° F to 149° F Hardened for central office installation, outdoor cabinet, and other harsh environments (-40° C to 65° C)

Power consumption
Short haul: 45 watts per card

Long haul: 45 watts per card

Multimode: 45 watts per card

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