D500 VDSL Line Card

Line Speeds: Up to 10 Mbps (symmetric), Up to 22 Mbps downstream and 3 Mbps upstream (asymmetric)

Key Applications: High-end LAN Interconnection, Video on Demand, Digital Broadcast TV, and Interactive TV.

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.

VDSL

As part of the family of D500 line cards, the 24-port VDSL DMT line card provides high-speed service solutions for business and residential customers, meeting their bandwidth-intensive requirements. VDSL allows operators to support a diverse range of services including household media services such as Video on Demand, Digital Broadcast TV, and interactive TV, and improved business services for Small to Medium Enterprises and Small Office Home Office businesses such as high-end LAN interconnection.

The VDSL line card is standards compliant for the ANSI and ETSI markets and provides twenty-four lines offering symmetric and asymmetric services and can be provisioned in 64 Kbps increments. The VDSL line card is designed to provide multiple bandplans including 3 band or 4 band, 997 and 998 bandplans, and an optional bandplan to address ADSL+ "like" services. The line card is DMT based offering greater potential for backward compatibility of ADSL (DMT) Customer Premises Equipment in the field thus reducing stranded investments.

The VDSL line card is offered with front connectors for front cabling access designed specifically for use in the 19" (ETSI) mechanics version of the D500 subrack or the D500 RAM (for ANSI and ETSI markets). The VDSL line card can be ordered in an Annex D (for ANSI markets) or Annex E (for ETSI markets) variant to satisfy the needs of individual operators.

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Standards Compliant

The VDSL24 line cards are compliant with the following standards:
- ITU-T G.993.1
- ANSI T1E1.4 / Annex D
- ETSI TS 101270 / Annex E

Electromagnetic standards:
- GR-1089-CORE
- EN 300 386
- EN 55022

Environmental standards:
- 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

Performance Parameters

24-port VDSL line card performance parameters are as follows (all parameters are for 24 AWG cable):
- Downstream (CO to end-user): 64 Kbps to 22 Mbps in 64 Kbps increments.
- Upstream (end-user to network): 64 Kbps to 3 Mbps in 64 Kbps increments.
- Symmetric: 64 Kbps to 10 Mbps in 64 Kbps increments.

Provisioning Parameters

The following provisioning parameters are supported for the 24-port VDSL line card:

Data Transport
- Fast path & Interleaved operation
- EOC support
- Minimum and maximum fast path rate
- Target noise margin
- Minimum noise margin
- Interleave percentage

Provisioning Modes
- Rate Adaptive training
- Fixed Rate training
- Power backoff

Signal Quality Measurements
- Terminal loopback test
- Noise margin
- Loop attenuation
- Maximum achievable rate
- Best maximum achievable rate
- Transmitted blocks
- Received blocks
- Cells Transmitted (VTU-O)
- Cells Received (VTU-O)

Physical Specifications

Interfaces per card

24 ports per card for a total of 456 ports per ANSI system and 360 ports per ETSI system

Variants

VDSL24df – 24-port VDSL line card with Annex D, front access

VDSL24ef – 24-port VDSL line card with Annex E, front access

Card dimensions

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

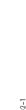Card weight

~ 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

~ 2 watts per line

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