

SHDSL.bis and Fiber

Up to 300 Mbps

Ethernet

DAVANTEL

FlexDSL[®]
Telecommunications AG

FlexDSL MiniFlex

SHDSL.bis and Optical Mini DSLAM



Features

- SHDSL and SHDSL.bis (TC-PAM16/32/64/128)
- Up to 15.2Mbps over single and up to 300Mbps over 20 copper pairs
- 100 Mbps Fiber Optical tributary interface
- Integrated Layer 2 managed Ethernet Switch:
 - 4x Gigabit Ethernet Uplink (2x TP / 2x SFP)
 - 8x 10/100Mbps
- Rapid Spanning Tree, Ethernet Ring Protection, Link Aggregation, VLAN, QoS
- Point-to-Point, Point-to-Multipoint and Ring
- Console Port, Telnet, Web, SNMP Management
- 24/48VDC and 110/230VAC Redundant Power
- Repeater supported and available
- 19" with 2U height

- The FlexDSL **MiniFlex** platform is a special part of the **Orion3** product family. Beside of having up to 10 dual **Orion3 SHDSL.bis Extended** line cards there is a feature-rich managed layer 2 Ethernet switch included. This switch has 8 auto-sensing front accessible 10/100Base-T ports as well as 2 gigabit Ethernet ports with fiber connectivity (SFP) and 2 gigabit Ethernet ports with copper connectivity (RJ-45). The inside backplane connect this switch to all Orion3 line cards through additional 10 Ethernet 10/100 Base-T ports.
- The FlexDSL Orion3 SHDSL.bis Extended product family offers a broad range of products, which are based on the latest SHDSL.bis standards (ITU-T G.991.2 & ETS TS 101 524), while also being fully interoperable with all our existing SHDSL equipment (Orion1 & Orion2).
- SHDSL.bis Extended allows symmetrical data transmission at speeds up to 15.2Mbps over a single pair of copper. In addition, the dual Orion3 line card also supports DSL channel bonding for 2 copper pairs in order to achieve speeds to 30.4Mbps! Using the link aggregation feature of the additional integrated switch, the FlexDSL MiniFlex can transmit up to 300Mbps over 20 copper pairs. This incredible speed makes Fiber installations in a lot of places needless.
- In addition to SHDSL.bis, the **MiniFlex** platform support subscriber access over Fiber Optic. The optical line card has build-in SFP jack for standard 100 Mbps Ethernet module. The protocol is compatible with third-party switches, media converters, etc.
- Like all FlexDSL Orion products, the MiniFlex and its line cards are based on industrial components and are manufactured according to highest quality standards providing additional value due to the extended temperature range and higher reliability. The combination of comprehensive functions providing maximum flexibility together with the higher quality of the FlexDSL MiniFlex make it the perfect choice for your access needs.

Specifications are subject to change without notice

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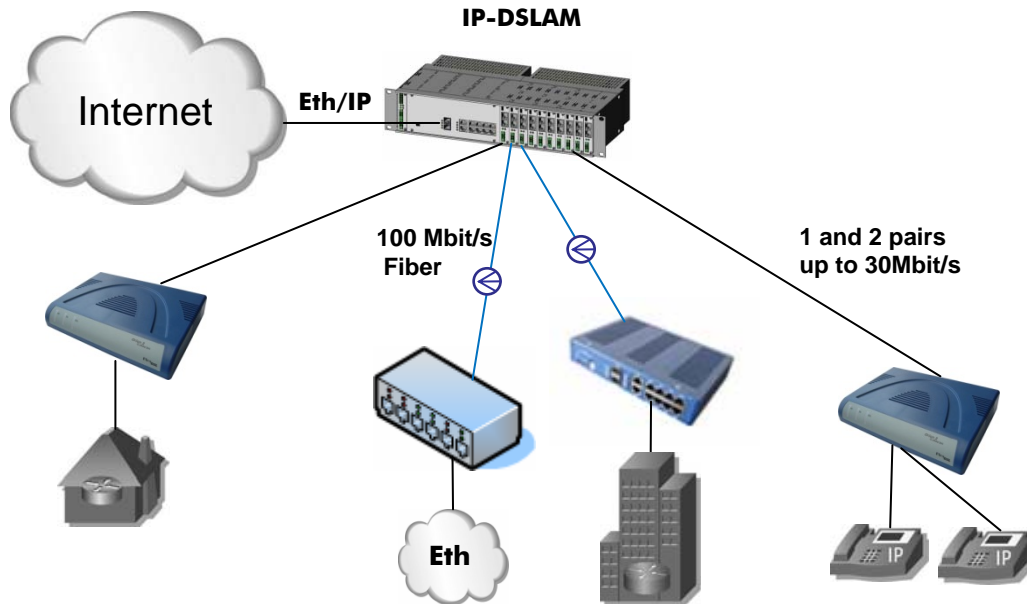
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FlexDSL MiniFlex Applications



Typical Internet Service Provider (ISP) Application



Bonding of up to 20 Copper Pairs, 300Mbps Link

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MiniFlex Rack with included Switch



Model: MF-MR2N-SW-12Eth,V1

Switch Interfaces: 8x Ethernet 10/100BaseT (Auto Sensing)

2x Gigabit Ethernet 1000Base-T

2x Gigabit Ethernet SFP

1x USB 2.0 (Local Console Port)

10x Ethernet 10/100BaseT on Backplane to Line Card

Physical Interfaces: RJ45 (Ethernet), SFP (Ethernet), Mini-B (USB)

Management: Local Console Port, Telnet/SSH, Web, SNMP v1 and V2c

L2 Features: **Spanning Tree and Ethernet Ring**

IEEE 802.1D Spanning Tree Protocol (STP)

IEEE 802.1w Rapid Spanning Tree Protocol (RSTP)

IEEE 802.1s Multiple Spanning Tree Protocol (MSTP)

Ethernet Ring Protection Mechanism, 50ms rapid In switching and protection

Port Mirroring, Jumbo Frames support (up to 9216 bytes)

VLAN

4K IEEE 802.1q VLANs

Port-based VLAN, MAC-Based VLAN, Private VLAN

GVRP, Q-in-Q, VLAN Translation

Link Aggregation

Static Trunk, Dynamic Trunk, IEEE 802.3ad LACP, Load Balancing

Multicast Features

IGMP v1, v2, v3, IGMP Snooping, IGMP Groups

Multicast VLAN

Qos: **Quality of Service**

8 Priority Queues/port

WRR, Strict Priority

WRR/WDDR+Strict Priority

802.1p

Port-Based CoS

CoS based on MAC DA/SA

Bandwidth Control per Port

Access Control List

MAC+Port Binding, VLAN+Port Binding

Security: **Port Security**

Trust Port, Port Blocking, Private VLAN, Port Powering Off

MAC address learning limit per port

DoS check, Management IP list

Alarm Interface: Major and Minor Alarm Relais

Model: MF-PS48, V1

Voltage Input Range: 18 - 72 VDC

Temperature Range: -20 to +70°C

Power Consumption: max. 90 Watts

Connector: 3 Pin Phoenix Mini Combicom connector (Front access)

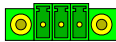
Model: MF-PS110/230, V1

Voltage Input Range: 90 - 264 VAC, 47 - 63 Hz

Temperature Range: -20 to +70°C

Power Consumption: max. 90 Watts

Connector: IEC 60320 Appliance Inlet C14 (Back access)



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MiniFlex SHDSL.bis Line Card

Model: MF-PAM-SR2L-2Eth,V1

DSL Version: SHDSL / SHDSL.bis / Extended

Modulation: TC-PAM4 / TC-PAM8 / TC-PAM16 / TC-PAM32 / TC-PAM64 / TC-PAM128

Data Rate: 128kbps - 30.464Mbps, 2x 15.232Mbps

Copper Pairs: 2

Modes: Master / Slave / Auto / Multipoint / Multipair

Interfaces: 1x Ethernet 10/100BaseT on Backplane to Switch

1x USB 2.0 (Local Console Port)

Physical Interfaces: Phoenix Mini Combicom (SHDSL), Mini-B (USB)

Management: Console Port, Telnet, Web, SNMP



MiniFlex Fiber Optic Line Card

Model: MF-FOM-SRL,V1

Fiber Optic standard: 100Base-FX

Data Rate: 100 Mbps

Line Budget: Dependent on SFP module type

Number of Fibre: 1 or 2, depending on the SFP module type

Modes: Auto

Interfaces: 1x Ethernet 10/100BaseT on Backplane to Switch

1x Ethernet 100Base-FX (SFP) on the front panel

1x USB 2.0 (Local Console Port)

Physical Interfaces: SFP cage, Mini-B (USB)

Management: Console Port, Telnet, Web, SNMP

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