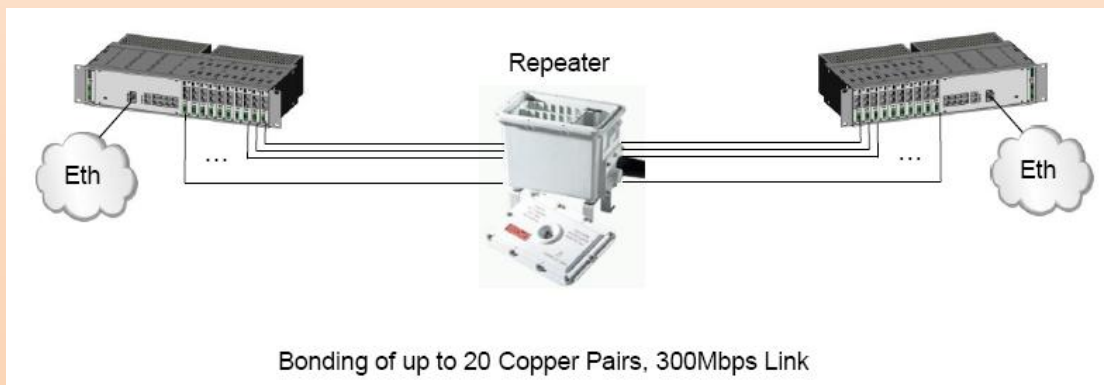
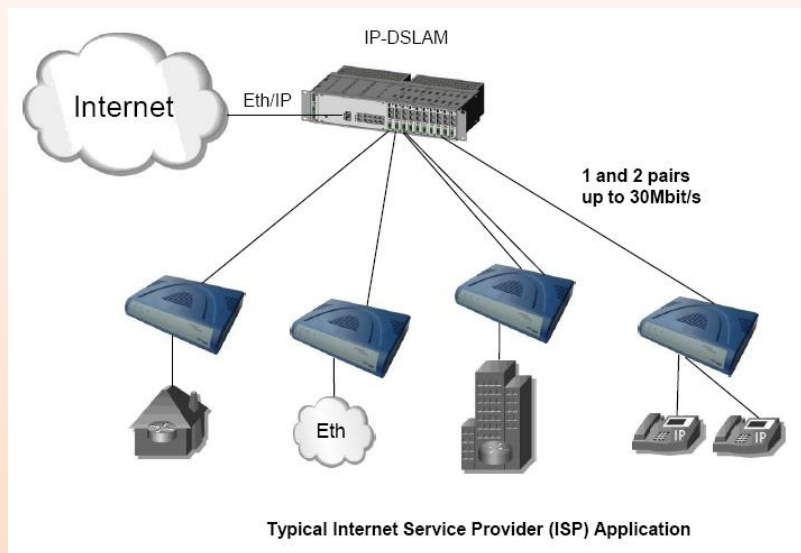


<b>SHDSL.bis</b>
<b>Up to 300 Mbps</b>
<b>Ethernet</b>

## Features

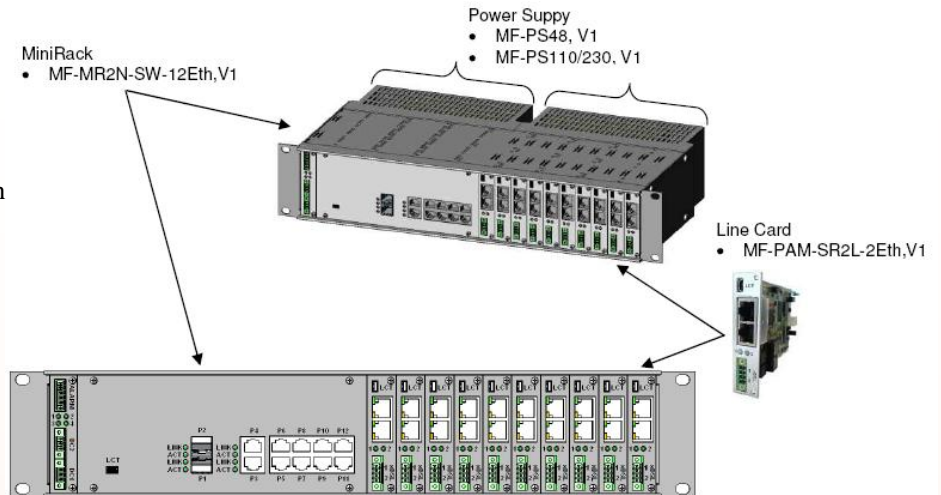
- SHDSL and SHDSL. Bis (TC-PAM16/32/64/128)
- Upto15.2Mbps over single and up to 300Mbps over 20 copper pairs
- Integrated Layer 2 managed Ethernet Switch:-4x Gigabit Ethernet Uplink (2x TP / 2x SFP)-8x 10/100Mbps
- Rapid Spanning Tree, Ethernet Ring Protection, Link Aggregation, VLAN, QoS
- Point-to-Point, Point-to-Multipoint and Ring
- Console Port, Telnet, Web, SNMP Management
- 24/48VDCand110/230VACRedundantPower
- Repeater supported and available
- 19”with2U height

## FlexDSL MiniFlex Applications



The MiniFlex consists of the following devices:

- Mini-rack with integrated managed Ethernet switch and alarm/DC power front access
- DC or AC power supplies (redundancy is possible)
- Line card SHDSL bis extended



## Mini-Rack with Integrated Switch

The Mini-Rack is designed for a 19" rack and has a height of 2U (89mm). The depth is 180mm without any power supply and 248mm with the power supply equipped. All connections (except AC power!) are accessible in the front.

Beside the connection to two DC power supplies and the alarm relay outputs, there is an integrated layer 2 managed Ethernet switch with the following main functionalities:

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

Quality of Service (QoS)

- 8 Priority Queues/port, Bandwidth Control per Port
- WRR, Strict Priority, WDRR, WRR/WDDR + Strict Priority
- 802.1p, Port-Based CoS, CoS based on MAC DA/SA

Access Control List

- MAC + Port Binding, VLAN + Port Binding

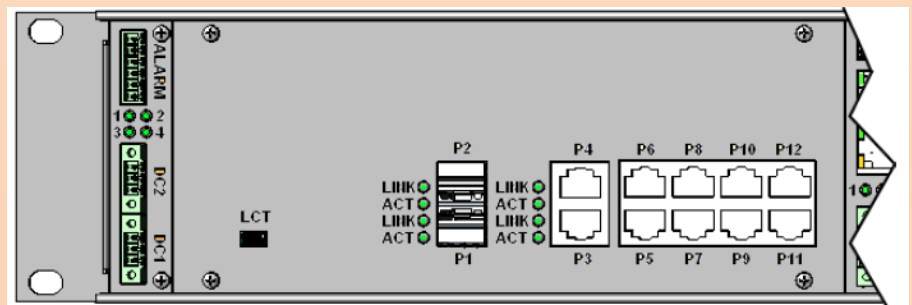
Port Security

- Trust Port, Port Blocking, Private VLAN, Port Powering Off
- MAC address learning limit per port, DoS check, Management IP list

Management

- Local Console Port (USB), Telnet/SSH, Web, SNMP v1 and V2c

Mini-Rack Front Panel



## Interfaces



### 1000Base-X Gigabit Ethernet (P1, P2)

Standard: IEEE-802.3, VLAN IEEE-802.1Q, QoS IEEE-802.1P

Data Rate 1000Base-X, Full/Half Duplex

Protocols Data, Telnet, SNMP, WEB

Connector Type SFP

Recommended 1.25Gbps SFP Transceiver (1000Base-LX interface):

· EOLS 1312-10D

· HSFP-24-3311S-22F

### 1000Base-T, Gigabit Ethernet (P3, P4)

Standard: IEEE-802.3, VLAN IEEE-802.1Q, QoS IEEE-802.1P

Data Rate 1000Base-T, Full/Half Duplex

Protocols Data, Telnet, SNMP, WEB

Signal Level Ethernet

MDI / MDI-X auto crossover Supported

Auto Negotiation Supported

Connector Type RJ45, 8 pin

### 10/100Base-T Ethernet (P5-P12, SHDSL Line Card)

Standard: IEEE-802.3, VLAN IEEE-802.1Q, QoS IEEE-802.1P

Data Rate 10/100Base-T, Full/Half Duplex

Protocols Data, Telnet, SNMP, WEB

Signal Level Ethernet

MDI / MDI-X auto crossover Supported

Auto Negotiation Supported

Connector Type RJ45, 8 pin

### SHDSL Line Interface

Specification ITU-T G.991.2-G.shdsl, ITU-T G.991.2-G.shdsl.bis

Line Code TC-PAM16/32, Extended: TC-PAM4/8/64/128

Impedance 135W

Transmit Power 13.5 (Annex A) or 14.5 (Annex B) dBm @ 135W

Number of Pairs 1 or 2

Bit Rate 192 to 5704kbit/s, Extended: 128 to 15232kbit/s

Connector Type Phoenix Mini Combicom 4 pin: MC 1, 5/4-GF-3, 5

Over voltage Protection ITU-T Rec. K.20/K.21

### Power Supply

Specification ETSI ETS 300 132-2

MF-PS48, V1

Input Voltage 18-72VDC

Connector Type Phoenix Mini Combicom 3 pin: MC 1, 5/3-GF-3, 5

MF-PS110/230, V1

Input Voltage 90-264VAC, 47-63Hz

Connector Type IEC 60320-1, C14, 10A/250VAC

UL 498, CSA C22.2 no. 42

Power Consumption

(All DSL links up, Ethernet on)

Typical. 15W for MiniFlex without SHDSL Line Cards

Typical. 3.5W for each SHDSL Line Card

Climatic Conditions

Storage: ETS 300 019-1-1 Class 1.2 (-25°C ... +55°C)

Transportation: ETS 300 019-1-2 Class 2.3 (-40°C ... +70°C)

Operation: ETS 300 019-1-3 Class 3.2 (-5°C ... +45°C)

Higher Operation Temperature range available on request (-20°C ... +70°C)

10.3.2 EMC and Safety Standards

EN 300386 V1.4.1:2008 EN 61000-4-2/A2:2001

EN 50121-4:2006 EN 61000-4-3:2006

EN 60950-1:2006 EN 61000-4-4:2004

EN 55022:2006, Class B EN 61000-4-5:2006

EN 55024/A2:2003 EN 61000-4-6:2007

EN 61000-4-6/A1:2001

### Physical Dimensions and Weight

Dimension with Power Supply:

482(W)x248(D)x89(H) mm

19" (W), 2U (H)

Weight without Line Cards < 4.4kg

Weight with 10 Line Cards < 5.5kg

