

SHDSL.bis

Up to 30.4Mbps

E1 / Ethernet

DAVANTEL

**FlexDSL**<sup>®</sup>  
Telecommunications AG

# FlexDSL Orion 2+ DIMEX bis

## TDM Based SHDSL.bis



### Features

- SHDSL and SHDSL.bis (TC-PAM16/32/64/128)
- Up to 11.4/15.2Mbps over single and up to 22.8/30.4Mbps over dual pair copper
- E1 (G.703/704, balanced/unbalanced)
- Ethernet Bridge (10/100BaseT)
- Multi-Service Operation
- Point-to-Point and Point-to-Multipoint
- Console Port, Telnet, Web, SNMP Management
- 48VDC Powered
- Remote Power Support
- Repeater/Regenerator Support

The FlexDSL Orion 2+ SHDSL.bis product family offers a broad range of products, which are based on the latest SHDSL.bis standard, while also being fully interoperable with existing SHDSL equipment. The FlexDSL Orion 2+ supports TC-PAM8, TC-PAM16, and the new TC-PAM32/64/128 line coding. The support of these line codes ensures compatibility with existing SHDSL equipment, that is already installed, in order to protect customer investments, while at the same time providing an upgrade path to the newest DSL technologies.

SHDSL.bis allows symmetrical data and voice transmission at speeds up to 11.4/15.2Mbps over a single pair of copper. In addition, the FlexDSL Orion 2+ SHDSL.bis modem range also supports DSL channel bonding for up to 2 copper pairs in order to achieve speeds to 22.8/30.4Mbps! FlexDSL Orion 2+ SHDSL.bis modems can provide up to 4 complete E1 interfaces, which support framed and unframed services (G.703/G.704). An optional integrated 4 port Ethernet switch (10/100BaseT) ensures connectivity with bridge functionality. This makes FlexDSL Orion 2+ SHDSL.bis modems a perfect solution for a wide range of applications in which TDM and IP services need to be transmitted over copper wires.

Like all FlexDSL Orion products the FlexDSL Orion 2+ SHDSL.bis modems are based on industrial components and manufactured according to highest quality standards providing additional value due to the extended temperature ranges and higher reliability. The combination of comprehensive functions providing maximum flexibility together with the higher quality of the FlexDSL Orion 2+ SHDSL.bis product family make it the perfect choice for all your DSL needs.

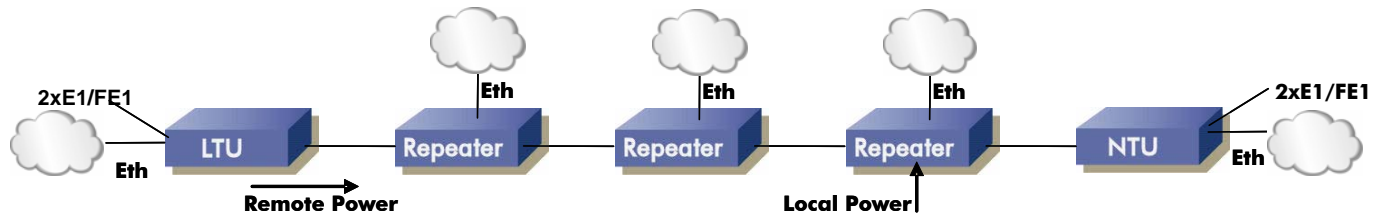
Specifications are subject to change without notice

SHDSL.bis  
Up to 30.4Mbps  
E1 / Ethernet

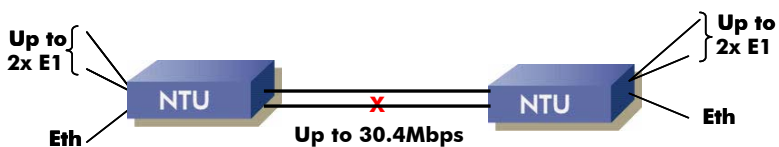
DAVANTEL

FlexDSL<sup>®</sup>  
Telecommunications AG

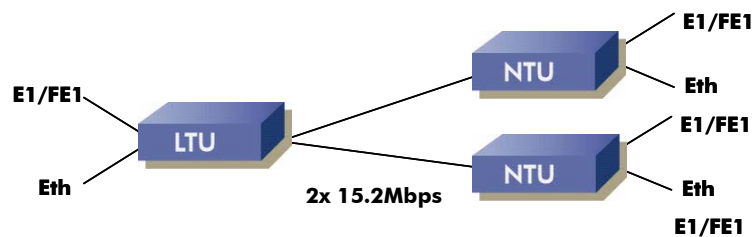
FlexDSL Orion 2+ SHDSL.bis Applications



Ethernet Add/Drop Repeater Application with Remote Power



Point-to-Point Bonding Application with Failure Protection



Point-to-Multipoint Application

Specifications are subject to change without notice

Desarrollos AVANZados en TELEcomunicaciones, S.L.  
C/ Pardo, 6-8 bajos  
08027 Barcelona  
SPAIN

Tel: +34 933408712  
Fax: +34 933401399  
info@davantel.com  
www.davantel.com

DS\_200608\_Orion2

SHDSL.bis

Up to 30.4Mbps

E1 / Ethernet

DAVANTEL

**FlexDSL**<sup>®</sup>  
Telecommunications AG

## FlexDSL Orion 2+ SHDSL.bis Standalone Modem



### Model: FG-PAM-SAN-E1B/Eth, V50

DSL Version: SHDSL / SHDSL.bis  
Modulation: TC-PAM16 / TC-PAM32  
Data Rate: 192kbps - 11.4/15.2Mbps  
Copper Pairs: 1  
Modes: Master / Slave  
Interface: 1x E1 (120 Ohm), 1x Ethernet Bridge (10/100BaseT)  
Power: -48VDC, accepts local and remote power  
Physical Interfaces: RJ48 (E1), RJ45 (Ethernet), RJ48 (SHDSL), Molex (Power), DB9 (Management)  
Management: Console Port, Telnet , HTTP, and SNMP  
Power Supply: Not Included (option FG-PAM-PA48x)

### Model: FG-PAM-SA2N-2E1B/Eth, V51

DSL Version: SHDSL / SHDSL.bis  
Modulation: TC-PAM16 / TC-PAM32  
Data Rate: 192kbps - 22.8/30.4Mbps  
Copper Pairs: 2  
Modes: Master / Slave  
Interface: 2x E1 (120 Ohm), 1x Ethernet Bridge (10/100BaseT)  
Power: -48VDC, accepts local and remote power  
Physical Interfaces: RJ48 (E1), RJ45 (Ethernet), RJ48 (SHDSL), Molex (Power), DB9 (Management)  
Management: Console Port, Telnet , HTTP, and SNMP  
Power Supply: Not Included (option FG-PAM-PA48x)  
Remarks: 2x 5.7Mbps or 1x 11.4Mbps

### Model: FG-PAM-SAN-Eth, V52

DSL Version: SHDSL / SHDSL.bis  
Modulation: TC-PAM16 / TC-PAM32  
Data Rate: 192kbps - 11.4/15.2Mbps  
Copper Pairs: 1  
Modes: Master / Slave  
Interface: 1x Ethernet Bridge (10/100BaseT)  
Power: -48VDC, accepts local and remote power  
Physical Interfaces: RJ45 (Ethernet), RJ48 (SHDSL), Molex (Power), DB9 (Management)  
Management: Console Port, Telnet , HTTP, and SNMP  
Power Supply: Not Included (option FG-PAM-PA48x)

### Model: FG-PAM-SA2N-Eth, V53

DSL Version: SHDSL / SHDSL.bis  
Modulation: TC-PAM16 / TC-PAM32  
Data Rate: 192kbps - 22.8/30.4Mbps  
Copper Pairs: 2  
Modes: Master / Slave  
Interface: 1x Ethernet Bridge (10/100BaseT)  
Power: -48VDC, accepts local and remote power  
Physical Interfaces: RJ45 (Ethernet), RJ48 (SHDSL), Molex (Power), DB9 (Management)  
Management: Console Port, Telnet , HTTP, and SNMP  
Power Supply: Not Included (option FG-PAM-PA48x)  
Remarks: 2x 5.7Mbps or 1x 11.4Mbps

**Please order Orion2 model plus  
+ UPGRADE-ORION2+, 11Mbit/s  
+ UPGRADE-ORION2+, 15Mbit/s**

Specifications are subject to change without notice

Desarrollos AVANZADOS en TELEcomunicaciones, S.L.  
C/ Pardo, 6-8 bajos  
08027 Barcelona  
SPAIN

Tel: +34 933408712  
Fax: +34 933401399  
info@davantel.com  
www.davantel.com

SHDSL.bis

Up to 30.4Mbps

E1 / Ethernet

DAVANTEL

**FlexDSL**<sup>®</sup>  
Telecommunications AG

## FlexDSL Orion 2+ SHDSL.bis Sub Rack Module



### Model: FG-PAM-SRL-E1B/4Eth-RP, V60

DSL Version: SHDSL / SHDSL.bis  
Modulation: TC-PAM16 / TC-PAM32  
Data Rate: 192kbps - 11.4/15.2Mbps  
Copper Pairs: 1  
Modes: Master / Slave  
Interface: 1x E1 (120 Ohm), 4x Ethernet Bridge (10/100BaseT)  
Power: -48VDC, remote power source, local power  
Physical Interfaces: RJ48 (E1), RJ45 (Ethernet), RJ48 (SHDSL), Molex (Power), DB9 (Management)  
Management: Console Port, Telnet, HTTP, and SNMP

### Model: FG-PAM-SRL-4Eth-RP, V61

DSL Version: SHDSL / SHDSL.bis  
Modulation: TC-PAM16 / TC-PAM32  
Data Rate: 192kbps - 11.4/15.2Mbps  
Copper Pairs: 1  
Modes: Master / Slave  
Interface: 4x Ethernet Bridge (10/100BaseT)  
Power: -48VDC, remote power source, local power  
Physical Interfaces: RJ45 (Ethernet), RJ48 (SHDSL), Molex (Power), DB9 (Management)  
Management: Console Port, Telnet, HTTP, and SNMP via TCU

### Model: FG-PAM-SRL-2E1B/4Eth-RP, V62

DSL Version: SHDSL / SHDSL.bis  
Modulation: TC-PAM16 / TC-PAM32  
Data Rate: 192kbps - 11.4/15.2Mbps  
Copper Pairs: 1  
Modes: Master / Slave  
Interface: 2x E1 (120 Ohm), 4x Ethernet Bridge (10/100BaseT)  
Power: -48VDC, remote power source, local power  
Physical Interfaces: RJ48 (E1), RJ45 (Ethernet), RJ48 (SHDSL), Molex (Power), DB9 (Management)  
Management: Console Port, Telnet, HTTP, and SNMP via TCU

### Model: FG-PAM-SR2L-2E1B/4Eth-RP, V63

DSL Version: SHDSL / SHDSL.bis  
Modulation: TC-PAM16 / TC-PAM32  
Data Rate: 192kbps - 22.8/30.4Mbps  
Copper Pairs: 2  
Modes: Master / Slave  
Interface: 2x E1 (120 Ohm), 4x Ethernet Bridge (10/100BaseT)  
Power: -48VDC, remote power source, local power  
Physical Interfaces: RJ48 (E1), RJ45 (Ethernet), RJ48 (SHDSL), Molex (Power), DB9 (Management)  
Management: Console Port, Telnet, HTTP, and SNMP via TCU  
Power Supply: Not Included (FG-ACU-SR, optional FG-TCU-SR)

**Please order Orion2 model plus  
+ UPGRADE-ORION2+, 11Mbit/s  
+ UPGRADE-ORION2+, 15Mbit/s**

Specifications are subject to change without notice

Desarrollos AVANZados en TELEcomunicaciones, S.L.  
C/ Pardo, 6-8 bajos  
08027 Barcelona  
SPAIN

Tel: +34 933408712  
Fax: +34 933401399  
info@davantel.com  
www.davantel.com

SHDSL.bis

Up to 30.4Mbps

E1 / Ethernet

DAVANTEL

**FlexDSL**<sup>®</sup>  
Telecommunications AG

## FlexDSL Orion 2+ SHDSL Sub Rack Module (continued)



### Model: FG-PAM-SR2L-4Eth-RP, V64

DSL Version: SHDSL / SHDSL.bis  
Modulation: TC-PAM16 / TC-PAM32  
Data Rate: 192kbps - 22.8/30.4Mbps  
Copper Pairs: 2  
Modes: Master / Slave  
Interface: 4x Ethernet Bridge (10/100BaseT)  
Power: -48VDC, remote power source, local power  
Physical Interfaces: RJ45 (Ethernet), RJ48 (SHDSL), Molex (Power), DB9 (Management)  
Management: Console Port, Telnet, HTTP, and SNMP

### Model: FG-PAM-SR2L-4E1B/4Eth-RP, V65

DSL Version: SHDSL / SHDSL.bis  
Modulation: TC-PAM16 / TC-PAM32  
Data Rate: 192kbps - 22.8/30.4Mbps  
Copper Pairs: 2  
Modes: Master / Slave  
Interface: 4x E1 (120 Ohm), 4x Ethernet Bridge (10/100BaseT)  
Power: -48VDC, remote power source, local power  
Physical Interfaces: RJ48 (E1), RJ45 (Ethernet), RJ48 (SHDSL), Molex (Power), DB9 (Management)  
Management: Console Port, Telnet, HTTP, and SNMP

## FlexDSL Orion 2+ SHDSL DIN Rail Modem



### Model: FG-PAM-RAIL2N-2E1B/Eth, V51

DSL Version: SHDSL / SHDSL.bis  
Modulation: TC-PAM16 / TC-PAM32  
Data Rate: 192kbps - 22.8/30.4Mbps  
Copper Pairs: 2  
Modes: Master / Slave  
Interface: 2x E1 (120 Ohm), 1x Ethernet Bridge (10/100BaseT)  
Power: 18 - 36VDC or -48VDC, accepts local and remote power  
Physical Interfaces: RJ48 (E1), RJ45 (Ethernet), RJ48 (SHDSL), Molex (Power), DB9 (Management)  
Management: Console Port, Telnet, HTTP, and SNMP  
Power Supply: Not Included (option FG-PAM-PA48x)

**Please order Orion2 model plus  
+ UPGRADE-ORION2+, 11Mbit/s  
+ UPGRADE-ORION2+, 15Mbit/s**

Specifications are subject to change without notice

Desarrollos AVANZADOS en TELEcomunicaciones, S.L.  
C/ Pardo, 6-8 bajos  
08027 Barcelona  
SPAIN

Tel: +34 933408712  
Fax: +34 933401399  
info@davantel.com  
www.davantel.com

SHDSL.bis

Up to 30.4Mbps

E1 / Ethernet

DAVANTEL

FlexDSL<sup>®</sup>  
Telecommunications AG

### FlexDSL Orion 2+ SHDSL Overview

Functionality FlexDSL Orion 2 Model	Standalone	Rail Mounting	Subrack Module	Single Pair	Dual Pair Bonding	Triple Pair Bonding	Quadruple Pair Bonding	Point-to-Point	Point-to-Multipoint	E1 (1200hm)	Optional E1 (750hm)	Ethernet Bridge	Multi-Service	Cross Connect	Remote Power Receiver	Remote Power Source	Console Port Management	Telnet Management	Web Management	SNMP Management	
FG-PAM-SAN-E1B/Eth, V50																					
FG-PAM-SA2N-2E1B/Eth, V51																					
FG-PAM-SAN-Eth, V52																					
FG-PAM-SA2N-Eth, V53																					
FG-PAM-RAIL2N-2E1B/Eth, V51																					
FG-PAM-SRL-E1B/4Eth-RP, V60																					
FG-PAM-SRL-4Eth-RP, V61																					
FG-PAM-SRL-2E1B/4Eth-RP, V62																					
FG-PAM-SR2L-2E1B/4Eth-RP, V63																					
FG-PAM-SR2L-4Eth-RP, V64																					
FG-PAM-SR2L-4E1B/4Eth-RP, V65																					

Specifications are subject to change without notice

Desarrollos AVANzados en TELEcomunicaciones, S.L.  
C/ Pardo, 6-8 bajos  
08027 Barcelona  
SPAIN

Tel: +34 933408712  
Fax: +34 933401399  
info@davantel.com  
www.davantel.com