SHDSL.bis

Up to 30.4Mbps

E1 / Ethernet

Flex DSL ®
Telecommunications AG

FlexDSL Orion 2+

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.
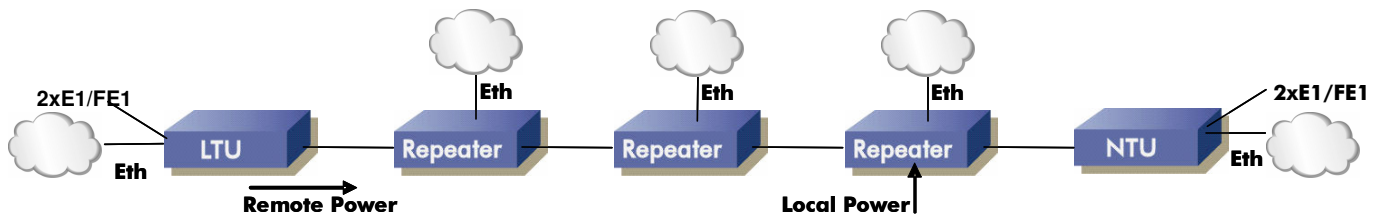
SHDSL.bis allows symmetrical data and voice transmission at speeds up to 11.4/15.2Mbps over a single pair of copper. In addition, the FlexDSL Orion 2+ SHDSL.bis modem range also supports DSL channel bonding for up to 2 copper pairs in order to achieve speeds to 22.8/30.4Mbps! FlexDSL Orion 2+ SHDSL.bis 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.
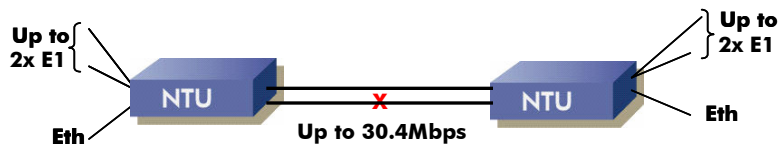
FlexDSL Orion 2+ SHDSL.bis Applications

2xE1/FE1

Eth

Eth

Eth

2xE1/FE1

LTU   Repeater   Repeater   Repeater   NTU

Eth

Eth

Remote Power   **Local Power**

Ethernet Add/Drop Repeater Application with Remote Power

Up to
2x E1

NTU   NTU

Up to
2x E1

Eth   **Up to 30.4Mbps**   Eth

x

Point-to-Point Bonding Application with Failure Protection

E1/FE1

NTU

Eth

E1/FE1

E1/FE1

LTU

NTU

E1/FE1

Eth   **2x 15.2Mbps**   Eth

E1/FE1
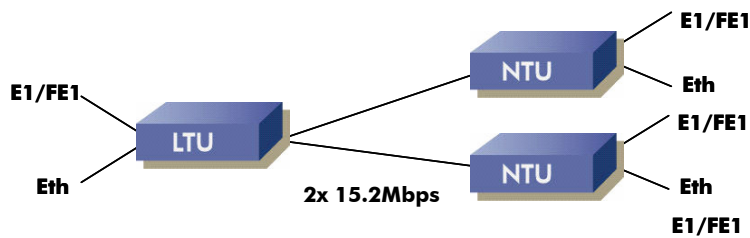
Point-to-Multipoint Application

Specifications are subject to change without notice

DS_200608_Orion2

Flex DSL®
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

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

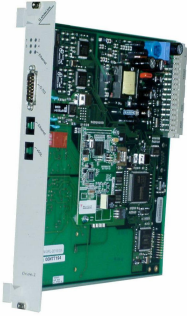| Model:	FG-PAM-SR2L-2E1B/4Eth-RP, V63
DSL Version:	SHDSL / SHDSL.bis
Modulation:	TC-PAM16 / TC-PAM32
Data Rate:	192kbps - 22.8/30.4Mbps
Copper Pairs:	2
Modes:	Master / Slave
Interface:	2x E1 (120 Ohm), 4x Ethernet Bridge (10/100BaseT)
Power:	-48VDC, remote power source, local power
Physical Interfaces:	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

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

DS_200608_Orion2

FlexDSL Orion 2+ SHDSL Overview

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 (120Ohm)	Optional E1 (75Ohm)	Ethernet Bridge	Multi-Service	Cross Connect	Remote Power Receiver	Remote Power Source	Console Port Management	Telnet Management	Web Management	SMNP 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

SHDSL.bis

Up to 30.4Mbps

E1 / Ethernet