



2 and 4 Wire SHDSL

Up to 2.3Mbps

E1 / Nx64 / Ethernet

FlexDSL Orion 1

TDM Based SHDSL



Features

- 2 and 4 Wire SHDSL (TC-PAM16)
- Up to 2.3Mbps
- E1 (G.703/704, balanced/unbalanced)
- Nx64 (V.35, V.36, X.21, V.24)
- Ethernet Bridge (10/100BaseT)
- 4 or 8 Analog Voice Ports (FXS, FXO)
- Multi-Service Operation
- Point-to-Point and Point-to-Multipoint
- Console Port, Telnet, SNMP Management
- 48VDC Powered
- Remote Power Support
- Repeater/Regenerator Support

FlexDSL Orion 1 comprises a wide range of SHDSL modems targeted to meet both typical carrier applications as well as access network needs. FlexDSL Orion 1 modems are based on industrial components and manufactured according to highest quality standards providing additional value due to extended temperature range and high reliability.

Supporting E1 (G.703/704) with a choice of 120 Ohm balanced or 75 Ohm unbalanced, the FlexDSL Orion 1 SHDSL modem additionally offers a universal Nx64 interface that can be adapted to V.35, V.36, X.21 and even V.24 (RS232) interfaces. The Line Termination Unit (LTU) even supports Ethernet bridging by presenting a 10/100BaseT Ethernet interface. E1 as well as Nx64 and Ethernet interfaces can be operated simultaneously by easy software configuration. Both, NTU and LTU can be configured to operate either in master or slave mode providing maximum flexibility. While the LTU offers the opportunity to remotely power the NTU over the SHDSL line, it even has the ability to remotely power additional FlexDSL Orion SHDSL repeaters. Optional Point-to-Multipoint support allows not only simple Point-to-Point campus applications, but also provides the opportunity to serve two different sites from one single FlexDSL Orion 1 modem.

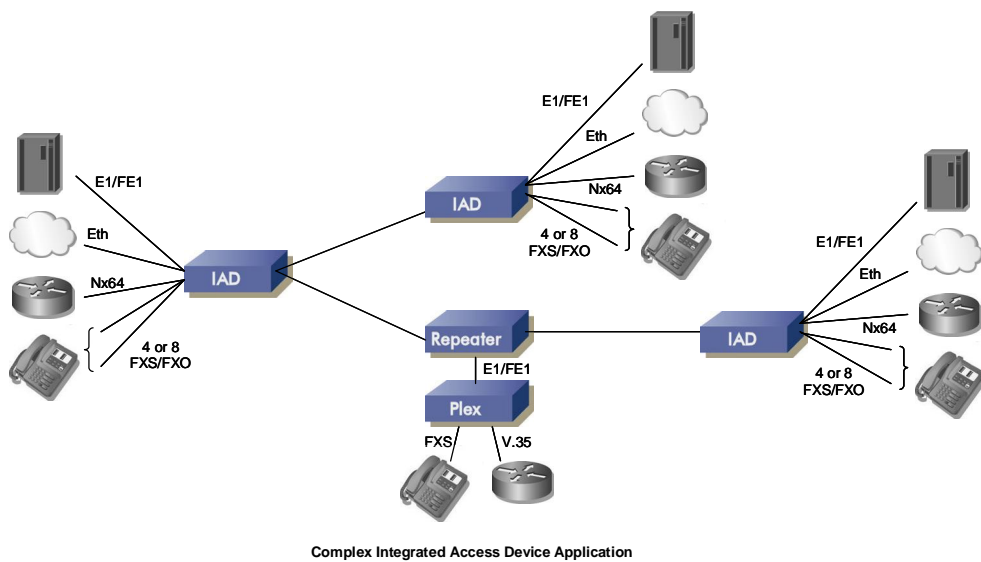
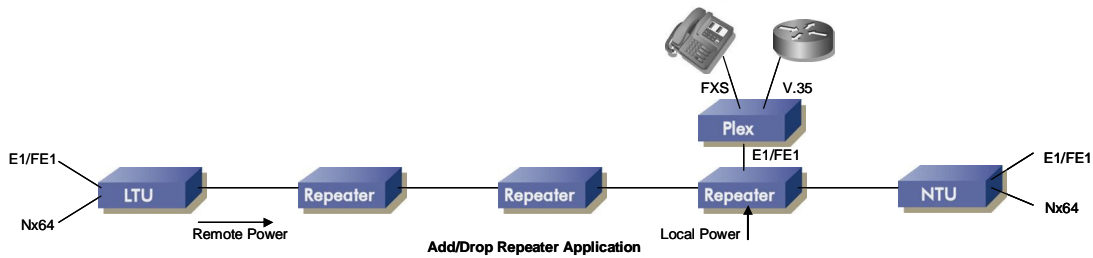
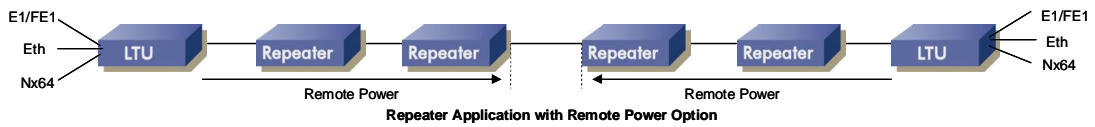
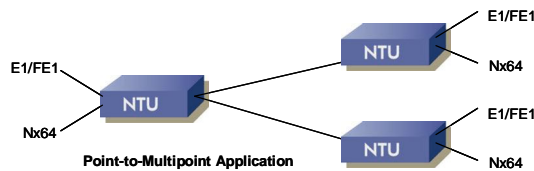
With an analog voice port extension (FXS/FXO) the FlexDSL Orion 1 modems can easily be upgraded to a comprehensive Integrated Access Device (IAD) for complete, easy, and reliable voice and data convergence.

The FlexDSL Orion 1 series is available in various types of housings and mechanics, not only for office use, but also for industrial environments.

Specifications are subject to change without notice

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FlexDSL Orion 1 SHDSL Applications



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2 and 4 Wire SHDSL

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FlexDSL Orion 1 SHDSL Standalone Modem



Model: FG-PAM-SAN-E1B, V31

DSL Version: SHDSL
Modulation: TC-PAM16
Data Rate: 64kbps - 2.3Mbps
Copper Pairs: 1
Modes: Master / Slave
Interface: 1x E1 (120 Ohm)
Power: -48VDC, accepts local and remote power
Physical Interfaces: DB15 (E1), RJ48 (SHDSL), Molex (Power), DB9 (Management)
Management: Console Port, Telnet and limited SNMP via TCU
Power Supply: Not Included (option FG-PAM-PA48x)
Special Version: FG-PAM-SAN-E1U, V31 offers E1 75Ohm BNC

Model: FG-PAM-SAN-N64, V33

DSL Version: SHDSL
Modulation: TC-PAM16
Data Rate: 64kbps - 2.3Mbps
Copper Pairs: 1
Modes: Master / Slave
Interface: 1x Nx64 (V.35, V.36, X.21, V.24)
Power: -48VDC, accepts local and remote power
Physical Interfaces: DB25 (Nx64), RJ48 (SHDSL), Molex (Power), DB9 (Management)
Management: Console Port, Telnet and limited SNMP via TCU
Power Supply: Not Included (option FG-PAM-PA48x)
Remarks: Requires adapter cable (V.35, V.36, X.21, V.24)

Model: FG-PAM-SAN-E1B/N64, V32

DSL Version: SHDSL
Modulation: TC-PAM16
Data Rate: 64kbps - 2.3Mbps
Copper Pairs: 1
Modes: Master / Slave
Interface: 1x E1 (120 Ohm), 1x Nx64 (V.35, V.36, X.21, V.24)
Power: -48VDC, accepts local and remote power
Physical Interfaces: DB15 (E1), DB25 (Nx64), RJ48 (SHDSL), Molex (Power), DB9 (Management)
Management: Console Port, Telnet and limited SNMP via TCU
Power Supply: Not Included (option FG-PAM-PA48x)
Remarks: Requires adapter cable (V.35, V.36, X.21, V.24)
Special Version: FG-PAM-SAN-E1U/N64, V32 offers E1 75Ohm BNC

Model: FG-PAM-SAN-E1B/N64-MP, V34

DSL Version: SHDSL
Modulation: TC-PAM16
Data Rate: 64kbps - 2.3Mbps
Copper Pairs: 2 (Multi-Point)
Interface: 1x E1 (120 Ohm), 1x Nx64 (V.35, V.36, X.21, V.24)
Power: -48VDC, accepts local and remote power
Physical Interfaces: DB15 (E1), DB25 (Nx64), RJ48 (SHDSL), Molex (Power), DB9 (Management)
Management: Console Port, Telnet and limited SNMP via TCU
Power Supply: Not Included (option FG-PAM-PA48x)
Remarks: Requires adapter cable (V.35, V.36, X.21, V.24)
Special Version: FG-PAM-SAN-E1U/N64-MP, V34 offers E1 75Ohm BNC

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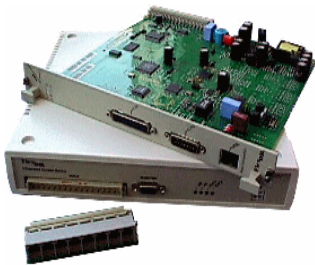
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FlexDSL Orion 1 SHDSL Standalone Integrated Access Device



Model: FG-PAM-SAN-E1B/N64/Eth/FXx, V37

DSL Version: SHDSL
Modulation: TC-PAM16
Data Rate: 64kbps - 2.3Mbps
Copper Pairs: 1
Modes: Master / Slave
Interface: 1x E1 (120 Ohm), 1x Nx64 (V.35, V.36, X.21, V.24), 1x Ethernet Bridge (10/100BaseT),
Power: -48VDC, accepts local and remote power
Physical Interfaces: DB15 (E1), DB25 (Nx64), RJ48 (SHDSL), Molex (Power), 1x DIN41612D (Voice), DB9 (Management)
Management: Console Port, Telnet and limited SNMP via TCU
Power Supply: Not Included (option FG-PAM-PA48x)
Remarks: Requires adapter cable (V.35, V.36, X.21, V.24)
Optional 8x RJ11 adapter for voice interface (FG-IAD-8V)
Special Version: FG-PAM-SAN-E1U/N64/Eth/FXx, V37 offers E1 75Ohm BNC

Model: FG-PAM-SA2N-E1B/N64/Eth/FXx-MP, V42SA

DSL Version: SHDSL
Modulation: TC-PAM16
Data Rate: 64kbps - 2.3Mbps
Copper Pairs: 2 (Multi-Point)
Modes: Dual Master / Single Slave
Interface: 1x E1 (120 Ohm), 1x Nx64 (V.35, V.36, X.21, V.24), 1x Ethernet Bridge (10/100BaseT), 4x or 8x FXO or FXS
Power: -48VDC, accepts local and remote power
Physical Interfaces: DB15 (E1), DB25 (Nx64), RJ48 (SHDSL), Molex (Power), 1x DIN41612D (Voice), DB9 (Management)
Management: Console Port, Telnet and limited SNMP via TCU
Power Supply: Not Included (option FG-PAM-PA48x)
Remarks: Requires adapter cable (V.35, V.36, X.21, V.24)
Optional 8x RJ11 adapter for voice interface (FG-IAD-8V)
Special Version: No E1 75Ohm Version available

Model: FG-PAM-SA2N-E1B/N64/Eth/FXO-MP-RP, V42M

DSL Version: SHDSL
Modulation: TC-PAM16
Data Rate: 64kbps - 2.3Mbps
Copper Pairs: 2 (Multi-Point)
Modes: Dual Master / Single Slave
Interface: 1x E1 (120 Ohm), 1x Nx64 (V.35, V.36, X.21, V.24), 1x Ethernet Bridge (10/100BaseT), 4x or 8x FXO only
Power: -48VDC, remote power source, accepts local and remote power
Physical Interfaces: DB15 (E1), DB25 (Nx64), RJ48 (SHDSL), Molex (Power), 1x DIN41612D (Voice), DB9 (Management)
Management: Console Port, Telnet and limited SNMP via TCU
Power Supply: Not Included (option FG-PAM-PA48x)
Remarks: Requires adapter cable (V.35, V.36, X.21, V.24)
Optional 8x RJ11 adapter for voice interface (FG-IAD-8V)
Special Version: No E1 75Ohm Version available

Specifications are subject to change without notice

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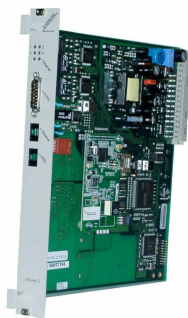
2 and 4 Wire SHDSL

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FlexDSL Orion 1 SHDSL Sub Rack Module



Model: FG-PAM-SRL-E1B, V25

DSL Version: SHDSL
Modulation: TC-PAM16
Data Rate: 64kbps - 2.3Mbps
Copper Pairs: 1
Modes: Master / Slave
Interface: 1x E1 (120 Ohm)
Power: -48VDC, local power
Physical Interfaces: DB15 (E1), RJ48 (SHDSL), DB9 (Management)
Management: Console Port, Telnet and SNMP via TCU
Power Supply: Not Included (FG-ACU-SR, optional FG-TCU-SR)
Special Version: FG-PAM-SRL-E1U, V25 offers E1 75Ohm BNC

Model: FG-PAM-SR2L-E1B-MP-RP, V36

DSL Version: SHDSL
Modulation: TC-PAM16
Data Rate: 64kbps - 2.3Mbps
Copper Pairs: 2 (Multi-Point)
Modes: Dual Master / Dual Slave
Interface: 2x E1 (120 Ohm)
Power: -48VDC, remote power source, local power
Physical Interfaces: DB15 (E1), RJ48 (SHDSL), DB9 (Management)
Management: Console Port, Telnet and SNMP via TCU
Power Supply: Not Included (FG-ACU-SR, optional FG-TCU-SR)
Special Version: FG-PAM-SR2L-E1U-MP-RP, V36 offers E1 75Ohm BNC

Model: FG-PAM-SRL-E1B/N64/Eth/FXx, V39

DSL Version: SHDSL
Modulation: TC-PAM16
Data Rate: 64kbps - 2.3Mbps
Copper Pairs: 1
Modes: Master / Slave
Interface: 1x E1 (120 Ohm), 1x Nx64 (V.35, V.36, X.21, V.24), 1x Ethernet Bridge (10/100BaseT), 4x or 8x FXO or FXS
Power: -48VDC, local power
Physical Interfaces: DB15 (E1), DB25 (Nx64), RJ48 (SHDSL), DB9 (Management)
Management: Console Port, Telnet and SNMP via TCU
Power Supply: Not Included (FG-ACU-SR, optional FG-TCU-SR)
Remarks: Requires adapter cable (V.35, V.36, X.21, V.24)
Special Version: FG-PAM-SRL-E1U/N64/Eth/FXx, V39 offers E1 75Ohm BNC

Model: FG-PAM-SRL-E1B/N64/Eth/FXO-RP, V39RP

DSL Version: SHDSL
Modulation: TC-PAM16
Data Rate: 64kbps - 2.3Mbps
Copper Pairs: 1
Modes: Master / Slave
Interface: 1x E1 (120 Ohm), 1x Nx64 (V.35, V.36, X.21, V.24), 1x Ethernet Bridge (10/100BaseT), 4x or 8x FXO only
Power: -48VDC, remote power source, local power
Physical Interfaces: DB15 (E1), DB25 (Nx64), RJ48 (SHDSL), DB9 (Management)
Management: Console Port, Telnet and SNMP via TCU
Power Supply: Not Included (FG-ACU-SR, optional FG-TCU-SR)
Remarks: Requires adapter cable (V.35, V.36, X.21, V.24)
Special Version: FG-PAM-SRL-E1U/N64/Eth/FXO-RP, V39RP offers E1 75Ohm BNC

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FlexDSL Orion 1 SHDSL Sub Rack Module (continued)

Model: FG-PAM-SR2L-E1B/N64/Eth/FXx-MP, V42

DSL Version: SHDSL
 Modulation: TC-PAM16
 Data Rate: 64kbps - 2.3Mbps
 Copper Pairs: 2 (Multi-Point)
 Modes: Dual Master / Dual Slave
 Interface: 1x E1 (120 Ohm), 1x Nx64 (V.35, V.36, X.21, V.24), 1x Ethernet Bridge (10/100BaseT), 4x or 8x FXO or FXS
 Power: -48VDC, local power
 Physical Interfaces: DB15 (E1), DB25 (Nx64), RJ48 (SHDSL), DB9 (Management)
 Management: Console Port, Telnet and SNMP via TCU
 Power Supply: Not Included (FG-ACU-SR, optional FG-TCU-SR)
 Remarks: Requires adapter cable (V.35, V.36, X.21, V.24)
 Special Version: No E1 75Ohm Version available

FlexDSL Orion 1 SHDSL Overview

FlexDSL Orion 1 Model \ Functionality	Standalone	Subrack Module	Single Pair	Dual Pair	2.3Mbps	E1 (120Ohm)	Optional E1 (75Ohm)	Nx64 (V.35V.36/X.21)	V.24 (RS232)	Ethernet Bridge	Multi-Point	Multi-Service	FXS	FXO	Remote Power Receiver	Remote Power Source	Console Port Management	Telnet Management	Optional SNMP Management
FG-PAM-SAN-E1B, V31																		*2	*2
FG-PAM-SAN-N64, V33																		*2	*2
FG-PAM-SAN-E1B/N64, V32																		*2	*2
FG-PAM-SAN-E1B/N64-MP, V34																		*2	*2
FG-PAM-SAN-E1B/N64/Eth/FXx, V37																		*2	*2
FG-PAM-SA2N-E1B/N64/Eth/FXx-MP, V42SA																		*2	*2
FG-PAM-SA2N-E1B/N64/Eth/FXO-MP-RP, V42M																		*2	*2
FG-PAM-SRL-E1B, V25																		*2	*2
FG-PAM-SR2L-E1B-MP-RP, V36																		*2	*2
FG-PAM-SRL-E1B/N64/Eth/FXx, V39							*1											*2	*2
FG-PAM-SRL-E1B/N64/Eth/FXO-RP, V39RP							*1											*2	*2
FG-PAM-SR2L-E1B/N64/Eth/FXx-MP, V42							*1											*2	*2

*1 Single E1 75Ohm BNC Only

*2 Optional (through management module)

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