

SHDSL.bis

Up to 60Mbps

E1 / Ethernet / Nx64

FlexDSL Orion3

TDM Based SHDSL.bis

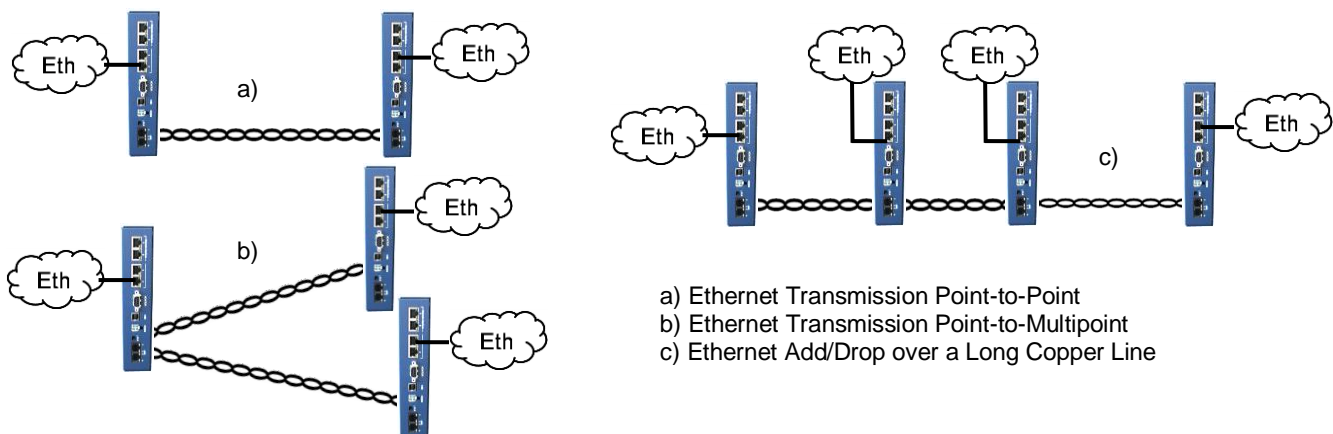


Features

- Up to 15.2Mbps Data Transmission per Copper Pair
- SHDSL and SHDSL.bis, TC-PAM16/32
- Additional TC-PAM4/8/64/128 Available
- 60.8 Mbps over Quadruple Copper Pair
- E1 (G.703/704) and Nx64 (V.35, V.36, X.21)
- Ethernet with Integrated Layer 2 managed Ethernet Switch supports VLAN, RSTP and QoS
- RS-232 and RS-485 Daughterboards
- Multiservice Operation
- Point-to-Point, Point-to-Multipoint & Ring Operation
- Console Port, Telnet, Web, SNMP Management
- 24/48VDC Powered, Low Power Consumption
- Remote Power Support 120/200VDC
- Included Primary Protection
- Repeater supported and available
- 19", Plastic or Robust DIN-Rail Metal Enclosure
- Industrial Temperature Range Available

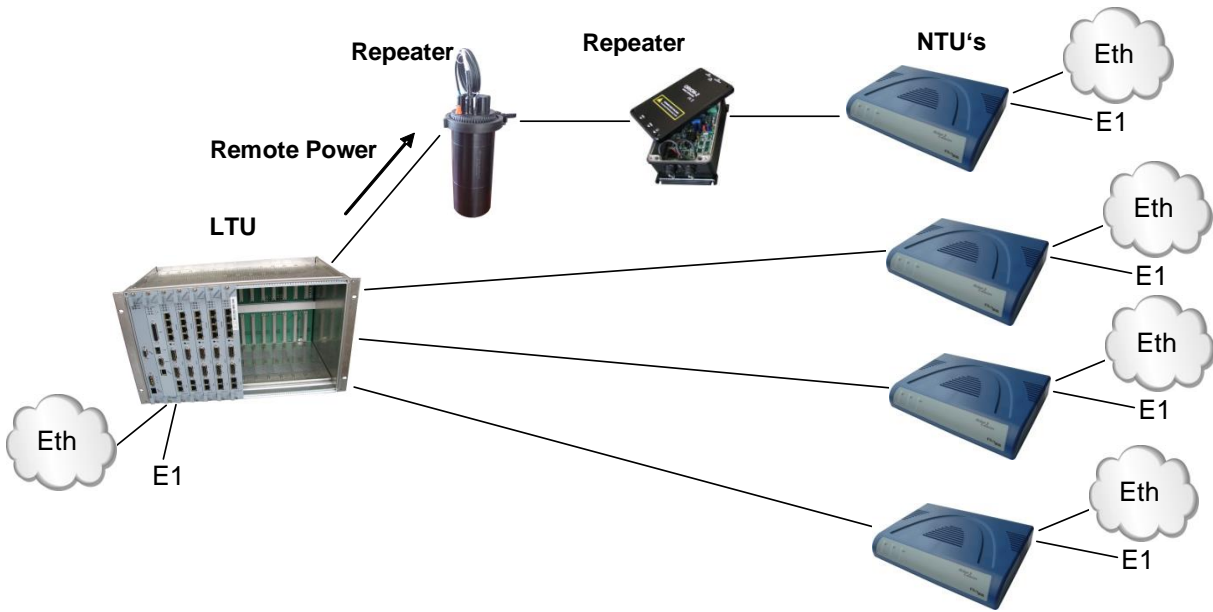
The FlexDSL Orion3 SHDSL.bis Extended product family offers a broad range of products, which are based on the latest SHDSL.bis standards (ITU-T G.991.2 & ETS TS 101 524), while also being fully interoperable with all our existing SHDSL equipment (Orion1, Orion2 & MiniFlex). The FlexDSL Orion3 supports TC-PAM16/32 and the new TC-PAM4/8/64/128 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 Extended allows symmetrical data and voice transmission at speeds up to 15.2Mbps over a single pair of copper. In addition, the FlexDSL Orion3 modem range also supports DSL channel bonding for up to 4 copper pairs in order to achieve speeds to 60.8Mbps! This incredible speed makes Fiber installations in a lot of places needless. FlexDSL Orion3 SHDSL.bis Extended modems can provide up to 4 complete E1 interfaces, which support framed and unframed services (G.703/G.704). An integrated 2 or 4 port Ethernet layer 2 managed switch with VLAN, RSTP and QoS support (10/100BaseT) ensures connectivity to IP services. Beside of E1 and Ethernet we have additional interfaces like Nx64 (that can be configured to be a V.35, V.36, X.21 or V.24 interface by software) and RS-232/485. This makes FlexDSL Orion3 SHDSL.bis Extended 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 & MiniFlex products, the Orion3 SHDSL.bis Extended modems family is based on industrial components and is 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 Orion3 SHDSL.bis Extended product family make it the perfect choice for all your DSL needs.

Possible Application: Point-to-Point & Point-to-Multipoint

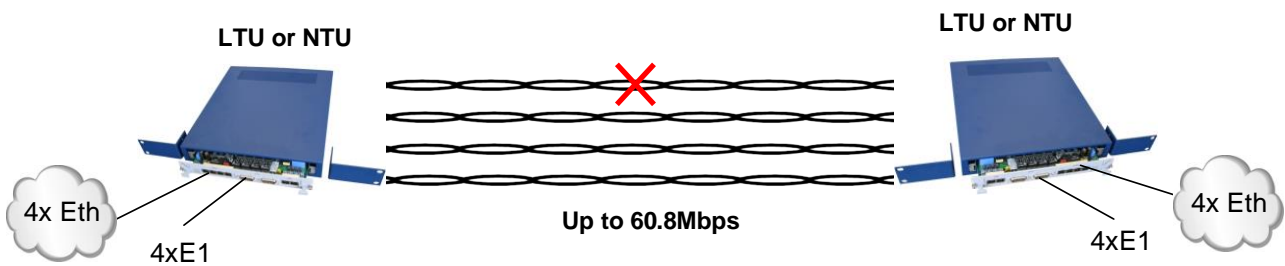


- a) Ethernet Transmission Point-to-Point
 b) Ethernet Transmission Point-to-Multipoint
 c) Ethernet Add/Drop over a Long Copper Line

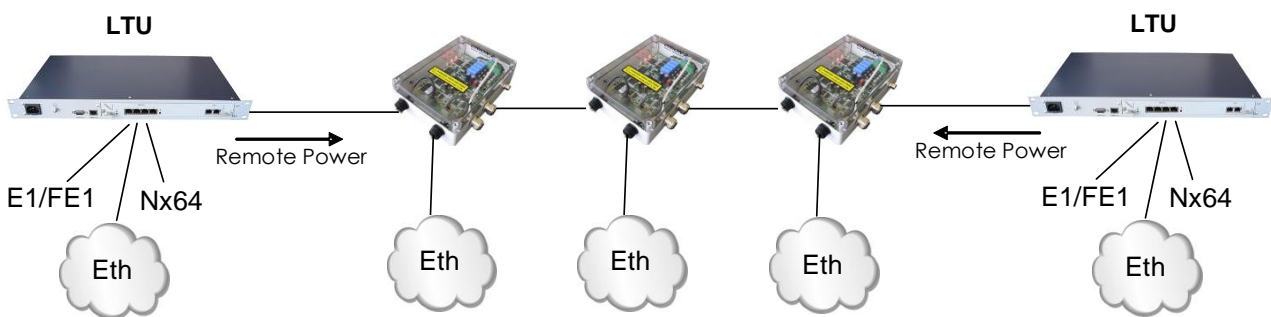
Possible Application: Typical Service Provider Application



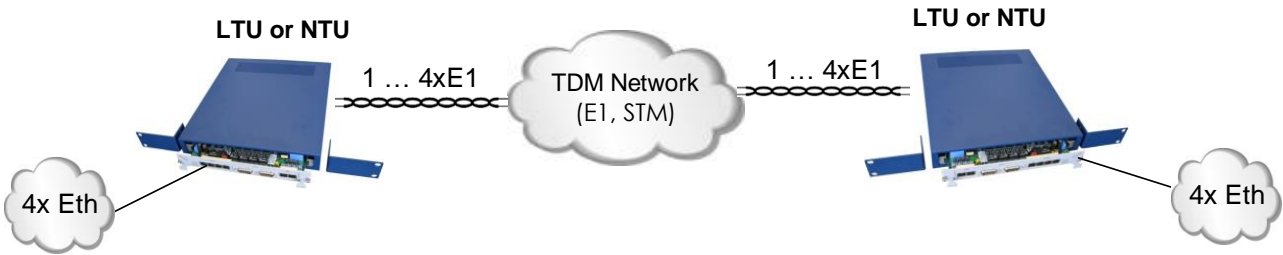
Possible Application: Point-to-Point Application with Failure Protection



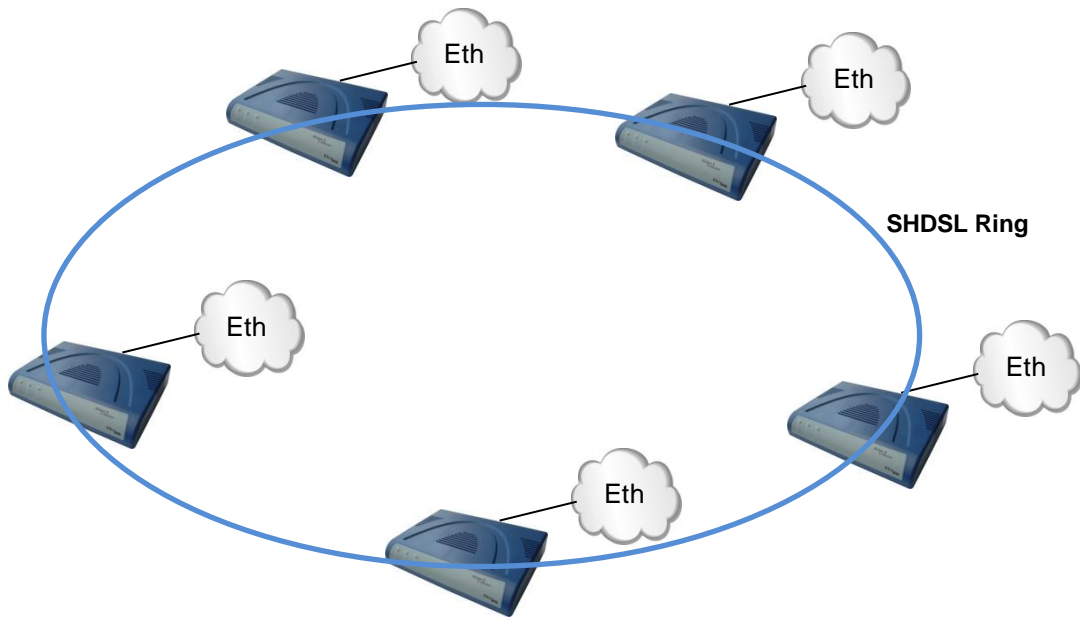
Possible Application: Ethernet Add/Drop Repeater Application with Remote Power



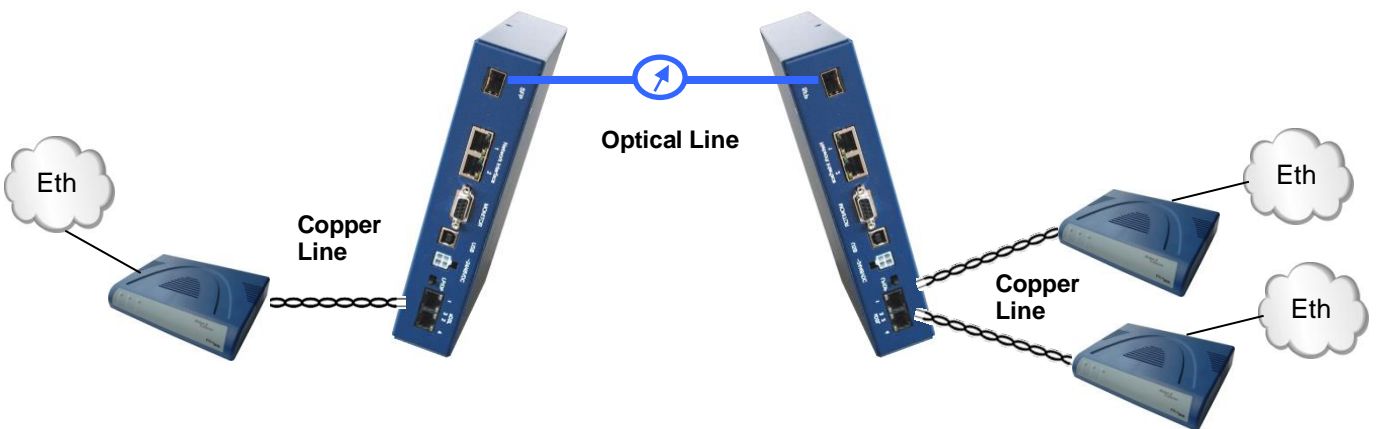
Possible Application: Ethernet to E1 Converter



Possible Application: Ring Application



Possible Application: Copper to Fiber Converter with V84S



Orion3 SHDSL Standalone Modem



Model: FG-PAM-SAN-2E1B/2Eth,V80
FG-PAM-SAN-2E1B/2Eth-24V,V80

DSL Version: SHDSL / SHDSL.bis / Extended
Modulation: TC-PAM16/32 and with Licence TC-PAM4/8/16/32/64/128
Data Rate: 128kbps - 15.232Mbps
Copper Pairs: 1 with Modes Master / Slave / Auto
Interface: 2x E1 (120Ohm), 2x Ethernet 10/100BaseT (Layer 2 Managed Switch)
Power: 36 to 230VDC, accepts local and remote power, 2.8W Typ.
18 to 230VDC, no remote power when FG-PAM-SAN-2E1B/2Eth-24V,V80
Physical Interfaces: RJ48 (E1), RJ45 (Ethernet), RJ48 (SHDSL), Molex (Power), DB9/USB (LCT)
Management: Console Port, Telnet, HTTP and SNMP
Power Supply: 90-260VAC option with FG-PAM-PA48G (not included)
Temperature: Standard: -5 to +45°C, Extended: -20 to +80°C



Model: FG-PAM-SA2N-2E1B/2Eth,V81
FG-PAM-SA2N-2E1B/2Eth-24V,V81

DSL Version: SHDSL / SHDSL.bis / Extended
Modulation: TC-PAM16/32 and with Licence TC-PAM4/8/16/32/64/128
Data Rate: 128kbps - 30.464Mbps, 2x 15.232Mbps
Copper Pairs: 2 with Modes Master / Slave / Auto / Multipoint / Multipair
Interface: 2x E1 (120Ohm), 2x Ethernet 10/100BaseT (Layer 2 Managed Switch)
Power: 36 to 230VDC, accepts local and remote power, 3.6W Typ.
18 to 230VDC, no remote power when FG-PAM-SA2N-2E1B/2Eth-24V,V81
Physical Interfaces: RJ48 (E1), RJ45 (Ethernet), RJ48 (SHDSL), Molex (Power), DB9/USB (LCT)
Management: Console Port, Telnet, HTTP and SNMP
Power Supply: 90-260VAC option with FG-PAM-PA48G (not included)
Temperature: Standard: -5 to +45°C, Extended: -20 to +80°C



Model: FG-PAM-SAN-2Eth,V82
FG-PAM-SAN-2Eth-24V,V82

DSL Version: SHDSL / SHDSL.bis / Extended
Modulation: TC-PAM16/32 and with Licence TC-PAM4/8/16/32/64/128
Data Rate: 128kbps - 15.232Mbps
Copper Pairs: 1 with Modes Master / Slave / Auto
Interface: 2x Ethernet 10/100BaseT (Layer 2 Managed Switch)
Power: 36 to 230VDC, accepts local and remote power, 2.3W Typ.
18 to 230VDC, no remote power when FG-PAM-SAN-2Eth-24V,V82
Physical Interfaces: RJ45 (Ethernet), RJ48 (SHDSL), Molex (Power), DB9/USB (LCT)
Management: Console Port, Telnet, HTTP and SNMP
Power Supply: 90-260VAC option with FG-PAM-PA48G (not included)
Temperature: Standard: -5 to +45°C, Extended: -20 to +80°C



Model: FG-PAM-SA2N-2Eth,V83
FG-PAM-SA2N-2Eth-24V,V83

DSL Version: SHDSL / SHDSL.bis / Extended
Modulation: TC-PAM16/32 and with Licence TC-PAM4/8/16/32/64/128
Data Rate: 128kbps - 30.464Mbps, 2x 15.232Mbps
Copper Pairs: 2 with Modes Master / Slave / Auto / Multipoint / Multipair
Interface: 2x Ethernet 10/100BaseT (Layer 2 Managed Switch)
Power: 36 to 230VDC, accepts local and remote power, 3.1W Typ.
18 to 230VDC, no remote power when FG-PAM-SA2N-2Eth-24V,V83
Physical Interfaces: RJ45 (Ethernet), RJ48 (SHDSL), Molex (Power), DB9/USB (LCT)
Management: Console Port, Telnet, HTTP and SNMP
Power Supply: 90-260VAC option with FG-PAM-PA48G (not included)
Temperature: Standard: -5 to +45°C, Extended: -20 to +80°C

Orion3 SHDSL Standalone Modem



Model: **FG-PAM-SA4N-4Eth,V84** **FG-PAM-SA4N-4Eth-24V,V84**

DSL Version: SHDSL / SHDSL.bis / Extended
Modulation: TC-PAM16/32 and with Licence TC-PAM4/8/16/32/64/128
Data Rate: 128kbps - 60.928Mbps, 4x 15.232Mbps
Copper Pairs: 4 with Modes Master / Slave / Auto / Multipoint / Multipair
Interface: 4x Ethernet 10/100BaseT (Layer 2 Managed Switch)
Power: 36 to 230VDC, accepts local and remote power, 5.1W Typ.
18 to 230VDC, no remote power when FG-PAM-SA4N-4Eth-24V,V84
Physical Interfaces: RJ45 (Ethernet), RJ48 (SHDSL), Molex (Power), DB9/USB (LCT)
Management: Console Port, Telnet, HTTP and SNMP
Power Supply: 90-260VAC option with FG-PAM-PA48G (not included)
Temperature: Standard: -5 to +45°C, Extended: -20 to +80°C



Model: **FG-PAM-SA4N-2E1B/2Eth,V84E** **FG-PAM-SA4N-2E1B/2Eth-24V,V84E**

DSL Version: SHDSL / SHDSL.bis / Extended
Modulation: TC-PAM16/32 and with Licence TC-PAM4/8/16/32/64/128
Data Rate: 128kbps - 60.928Mbps, 4x 15.232Mbps
Copper Pairs: 4 with Modes Master / Slave / Auto / Multipoint / Multipair
Interface: 2x E1 (120Ohm), 2x Ethernet 10/100BaseT (Layer 2 Managed Switch)
Power: 36 to 230VDC, accepts local and remote power, 5.3W Typ.
18 to 230VDC, no remote power when FG-PAM-SA4N-2E1B/2Eth-24V,V84E
Physical Interfaces: RJ48 (E1), RJ45 (Ethernet), RJ48 (SHDSL), Molex (Power), DB9/USB (LCT)
Management: Console Port, Telnet, HTTP and SNMP
Power Supply: 90-260VAC option with FG-PAM-PA48G (not included)
Temperature: Standard: -5 to +45°C, Extended: -20 to +80°C



Model: **FG-PAM-SA4N-3Eth,V84S** **FG-PAM-SA4N-3Eth-24V,V84S**

DSL Version: SHDSL / SHDSL.bis / Extended
Modulation: TC-PAM16/32 and with Licence TC-PAM4/8/16/32/64/128
Data Rate: 128kbps - 60.928Mbps, 4x 15.232Mbps
Copper Pairs: 4 with Modes Master / Slave / Auto / Multipoint / Multipair
Interface: 2x Ethernet 10/100BaseT, 1x Ethernet SFP 100BaseFX (Managed Switch)
Power: 36 to 230VDC, accepts local and remote power, 5.1W Typ.
18 to 230VDC, no remote power when FG-PAM-SA4N-3Eth-24V,V84S
Physical Interfaces: RJ45/SFP (Ethernet), RJ48 (SHDSL), Molex (Power), DB9/USB (LCT)
Management: Console Port, Telnet, HTTP and SNMP
Power Supply: 90-260VAC option with FG-PAM-PA48G (not included)
Temperature: Standard: -5 to +45°C, Extended: -20 to +80°C



Model: **FG-PAM-SAN-N64/2E1B,V85** **FG-PAM-SAN-N64/2E1B-24V,V85**

DSL Version: SHDSL / SHDSL.bis / Extended
Modulation: TC-PAM16/32 and with Licence TC-PAM4/8/16/32/64/128
Data Rate: 128kbps - 15.232Mbps
Copper Pairs: 1 with Modes Master / Slave / Auto
Interface: 2x E1 (120Ohm), 1x Nx64 (V.35,V.36,X.21)
Power: 36 to 230VDC, accepts local and remote power, 2.8W Typ.
18 to 230VDC, no remote power when FG-PAM-SAN-N64/2E1B-24V,V85
Physical Interfaces: RJ48 (E1), DB26 (Nx64), RJ48 (SHDSL), Molex (Power), DB9/USB (LCT)
Management: Console Port, Telnet, HTTP and SNMP
Power Supply: 90-260VAC option with FG-PAM-PA48G (not included)
Temperature: Standard: -5 to +45°C, Extended: -20 to +80°C

Orion3 SHDSL Standalone Modem



Model: FG-PAM-SA2N-N64/2E1B,V86
FG-PAM-SA2N-N64/2E1B-24V,V86

DSL Version: SHDSL / SHDSL.bis / Extended
Modulation: TC-PAM16/32 and with Licence TC-PAM4/8/16/32/64/128
Data Rate: 128kbps - 30.464Mbps, 2x 15.232Mbps
Copper Pairs: 2 with Modes Master / Slave / Auto / Multipoint / Multipair
Interface: 2x E1 (120Ohm), 1x Nx64 (V.35,V.36,X.21)
Power: 36 to 230VDC, accepts local and remote power, 3.6W Typ
18 to 230VDC, no remote power when FG-PAM-SA2N-N64/2E1B-24V,V86
Physical Interfaces: RJ48 (E1), DB26 (Nx64), RJ48 (SHDSL), Molex (Power), DB9/USB (LCT)
Management: Console Port, Telnet, HTTP and SNMP
Power Supply: 90-260VAC option with FG-PAM-PA48G (not included)
Temperature: Standard: -5 to +45°C, Extended: -20 to +80°C



Model: FG-PAM-SAN-N64/2Eth,V87
FG-PAM-SAN-N64/2Eth-24V,V87

DSL Version: SHDSL / SHDSL.bis / Extended
Modulation: TC-PAM16/32 and with Licence TC-PAM4/8/16/32/64/128
Data Rate: 128kbps - 15.232Mbps
Copper Pairs: 1 with Modes Master / Slave / Auto
Interface: 1x Nx64 (V.35,V.36,X.21), 2x Ethernet 10/100BaseT (Layer2 Manag. Switch)
Power: 36 to 230VDC, accepts local and remote power, 2.8W Typ.
18 to 230VDC, no remote power when FG-PAM-SAN-N64/2Eth-24V,V87
Physical Interfaces: DB26 (Nx64), RJ45 (ETH), RJ48 (SHDSL), Molex (Power), DB9/USB (LCT)
Management: Console Port, Telnet, HTTP and SNMP
Power Supply: 90-260VAC option with FG-PAM-PA48G (not included)
Temperature: Standard: -5 to +45°C, Extended: -20 to +80°C



Model: FG-PAM-SA2N-N64/2Eth,V88
FG-PAM-SA2N-N64/2Eth-24V,V88

DSL Version: SHDSL / SHDSL.bis / Extended
Modulation: TC-PAM16/32 and with Licence TC-PAM4/8/16/32/64/128
Data Rate: 128kbps - 30.464Mbps, 2x 15.232Mbps
Copper Pairs: 2 with Modes Master / Slave / Auto / Multipoint / Multipair
Interface: 1x Nx64 (V.35,V.36,X.21), 2x Ethernet 10/100BaseT (Layer2 Manag. Switch)
Power: 36 to 230VDC, accepts local and remote power, 3.6W Typ.
18 to 230VDC, no remote power when FG-PAM-SA2N-N64/2Eth-24V,V88
Physical Interfaces: DB26 (Nx64), RJ45 (ETH), RJ48 (SHDSL), Molex (Power), DB9/USB (LCT)
Management: Console Port, Telnet, HTTP and SNMP
Power Supply: 90-260VAC option with FG-PAM-PA48G (not included)
Temperature: Standard: -5 to +45°C, Extended: -20 to +80°C

Attention: All units having an interface like N64 (V.35,V.36,X.21), V24 (RS-232, V.24), 485 (RS-485), 703 (G.703, E0) and 4140 can be adapted to any of these interfaces.

Orion3 SHDSL DIN Rail Modem



Model: FG-PAM-RAIL2N-2E1B/2Eth, V81 FG-PAM-RAIL2N-2E1B/2Eth-24V, V81

DSL Version: SHDSL / SHDSL.bis / Extended
Modulation: TC-PAM16/32 and with Licence TC-PAM4/8/16/32/64/128
Data Rate: 128kbps - 30.464Mbps, 2x 15.232Mbps
Copper Pairs: 2 with Modes Master / Slave / Auto / Multipoint / Multipair
Interface: 2x E1 (120Ohm), 2x Ethernet 10/100BaseT (Layer 2 Managed Switch)
Power: 36 to 230VDC, accepts local and remote power, 3.6W Typ.
18 to 230VDC, no remote power when FG-PAM-RAIL2N-2E1B/2Eth-24V, V81
Physical Interfaces: RJ48 (E1), RJ45 (Ethernet), RJ48 (SHDSL), Molex (Power), DB9/USB (LCT)
Management: Console Port, Telnet, Web, SNMP and SD-Card support
Power Supply: 90-260VAC option with FG-PAM-PA48G (not included)
Temperature: Standard: -5 to +45°C, Extended: -20 to +80°C



Model: FG-PAM-RAIL2N-2Eth, V83 FG-PAM-RAIL2N-2Eth-24V, V83

DSL Version: SHDSL / SHDSL.bis / Extended
Modulation: TC-PAM16/32 and with Licence TC-PAM4/8/16/32/64/128
Data Rate: 128kbps - 30.464Mbps, 2x 15.232Mbps
Copper Pairs: 2 with Modes Master / Slave / Auto / Multipoint / Multipair
Interface: 2x Ethernet 10/100BaseT (Layer 2 Managed Switch)
Power: 36 to 230VDC, accepts local and remote power, 3.1W Typ.
18 to 230VDC, no remote power when FG-PAM-RAIL2N-2Eth-24V, V83
Physical Interfaces: RJ45 (Ethernet), RJ48 (SHDSL), Molex (Power), DB9/USB (LCT)
Management: Console Port, Telnet, Web, SNMP and SD-Card support
Power Supply: 90-260VAC option with FG-PAM-PA48G (not included)
Temperature: Standard: -5 to +45°C, Extended: -20 to +80°C



Model: FG-PAM-RAIL4N-4Eth, V84 FG-PAM-RAIL4N-4Eth-24V, V84

DSL Version: SHDSL / SHDSL.bis / Extended
Modulation: TC-PAM16/32 and with Licence TC-PAM4/8/16/32/64/128
Data Rate: 128kbps - 60.928Mbps, 4x 15.232Mbps
Copper Pairs: 4 with Modes Master / Slave / Auto / Multipoint / Multipair
Interface: 4x Ethernet 10/100BaseT (Layer 2 Managed Switch)
Power: 36 to 230VDC, accepts local and remote power, 5.1W Typ.
18 to 230VDC, no remote power when FG-PAM-RAIL4N-4Eth-24V, V84
Physical Interfaces: RJ45 (Ethernet), RJ48 (SHDSL), Molex (Power), DB9/USB (LCT)
Management: Console Port, Telnet, Web, SNMP and SD-Card support
Power Supply: 90-260VAC option with FG-PAM-PA48G (not included)
Temperature: Standard: -5 to +45°C, Extended: -20 to +80°C



Model: FG-PAM-RAIL4N-2E1B/2Eth, V84E FG-PAM-RAIL4N-2E1B/2Eth-24V, V84E

DSL Version: SHDSL / SHDSL.bis / Extended
Modulation: TC-PAM16/32 and with Licence TC-PAM4/8/16/32/64/128
Data Rate: 128kbps - 60.928Mbps, 4x 15.232Mbps
Copper Pairs: 4 with Modes Master / Slave / Auto / Multipoint / Multipair
Interface: 2x E1 (120Ohm), 2x Ethernet 10/100BaseT (Layer 2 Managed Switch)
Power: 36 to 230VDC, accepts local and remote power, 5.3W Typ.
18 to 230VDC, no remote power when FG-PAM-SA4N-2E1B/2Eth-24V, V84E
Physical Interfaces: RJ48 (E1), RJ45 (Ethernet), RJ48 (SHDSL), Molex (Power), DB9/USB (LCT)
Management: Console Port, Telnet, Web, SNMP and SD-Card support
Power Supply: 90-260VAC option with FG-PAM-PA48G (not included)
Temperature: Standard: -5 to +45°C, Extended: -20 to +80°C

Orion3 SHDSL DIN Rail Modem



Model: **FG-PAM-RAIL2N-V24/2Eth, V88** **FG-PAM-RAIL2N-V24/2Eth-24V, V88**

DSL Version:	SHDSL / SHDSL.bis / Extended
Modulation:	TC-PAM16/32 and with Licence TC-PAM4/8/16/32/64/128
Data Rate:	128kbps - 30.464Mbps, 2x 15.232Mbps
Copper Pairs:	2 with Modes Master / Slave / Auto / Multipoint / Multipair
Interface:	1x RS-232 (V.24), 2x Ethernet 10/100BaseT (Layer 2 Managed Switch)
Power:	36 to 230VDC, accepts local and remote power, 3.6W Typ. 18 to 230VDC, no remote power when FG-PAM-RAIL2N-V24/2Eth-24V, V88
Physical Interfaces:	DB26 (RS-232), RJ45 (Ethernet), RJ48 (SHDSL), Molex (Power), DB9 (LCT)
Management:	Console Port, Telnet, Web, SNMP and SD-Card support
Power Supply:	90-260VAC option with FG-PAM-PA48G (not included)
Temperature:	Standard: -5 to +45°C, Extended: -20 to +80°C



Model: **FG-PAM-RAIL4N-3Eth, V84S** **FG-PAM-RAIL4N-3Eth-24V, V84S**

DSL Version:	SHDSL / SHDSL.bis / Extended
Modulation:	TC-PAM16/32 and with Licence TC-PAM4/8/16/32/64/128
Data Rate:	128kbps - 60.928Mbps, 4x 15.232Mbps
Copper Pairs:	4 with Modes Master / Slave / Auto / Multipoint / Multipair
Interface:	2x Ethernet 10/100BaseT, 1x Ethernet SFP 100BaseFX (Managed Switch)
Power:	36 to 230VDC, accepts local and remote power, 5.1W Typ. 18 to 230VDC, no remote power when FG-PAM-RAIL4N-3Eth-24V, V84S
Physical Interfaces:	RJ45/SFP (Ethernet), RJ48 (SHDSL), Molex (Power), DB9/USB (LCT)
Management:	Console Port, Telnet, Web, SNMP and SD-Card support
Power Supply:	90-260VAC option with FG-PAM-PA48G (not included)
Temperature:	Standard: -5 to +45°C, Extended: -20 to +80°C



Model: **FG-PAM-RAIL4N-4Eth-24V, V84I**

DSL Version:	SHDSL / SHDSL.bis / Extended
Modulation:	TC-PAM16/32 and with Licence TC-PAM4/8/16/32/64/128
Data Rate:	128kbps - 60.928Mbps, 4x 15.232Mbps
Copper Pairs:	4 with Modes Master / Slave / Auto / Multipoint / Multipair
Interface:	4x Ethernet 10/100BaseT (Layer 2 Managed Switch)
Power:	18 to 230VDC, no remote power
Physical Interfaces:	RJ45 (Ethernet), Combicon (SHDSL & Power), DB9/USB (LCT)
Management:	Console Port, Telnet, Web, SNMP and SD-Card support
Power Supply:	90-260VAC option with FG-PAM-PA48G (not included)
Temperature:	Standard: -5 to +45°C, Extended: -20 to +80°C



Model: **FG-PAM-RAIL4N-4Eth-24V, V84IS**

DSL Version:	SHDSL / SHDSL.bis / Extended
Modulation:	TC-PAM16/32 and with Licence TC-PAM4/8/16/32/64/128
Data Rate:	128kbps - 60.928Mbps, 4x 15.232Mbps
Copper Pairs:	4 with Modes Master / Slave / Auto / Multipoint / Multipair
Interface:	2x Ethernet 10/100BaseT, 2x Ethernet SFP 100BaseFX (Managed Switch)
Power:	18 to 230VDC, no remote power
Physical Interfaces:	RJ45/SFP (Ethernet), Combicon (SHDSL & Power), DB9/USB (LCT)
Management:	Console Port, Telnet, Web, SNMP and SD-Card support
Power Supply:	90-260VAC option with FG-PAM-PA48G (not included)
Temperature:	Standard: -5 to +45°C, Extended: -20 to +80°C

Attention: All units having an interface like N64 (V.35, V.36, X.21), V24 (RS-232, V.24), 485 (RS-485), 703 (G.703, E0) and 4140 can be adapted to any of these interfaces.

Orion3 SHDSL Sub Rack Module



Model: FG-PAM-SRL-2E1B/4Eth-RP,V90

DSL Version: SHDSL / SHDSL.bis / Extended
Modulation: TC-PAM16/32 and with Licence TC-PAM4/8/16/32/64/128
Data Rate: 128kbps - 15.232Mbps
Copper Pairs: 1
Modes: Master / Slave / Auto
Interface: 2x E1 (120Ohm), 4x Ethernet 10/100BaseT (Layer 2 Managed Switch)
Power: 36 to 72VDC local power, 120/200VDC remote power source
Physical Interfaces: DB15 (E1), RJ45 (Ethernet), RJ48 (SHDSL), DIN41612 (Backplane)
Management: Telnet, HTTP, SNMP, SD-Card support and Console Port via ACU/TCU
Temperature: Standard: -5 to +45°C, Extended: -20 to +80°C



Model: FG-PAM-SRL-2E1B/N64/4Eth-RP,V91

DSL Version: SHDSL / SHDSL.bis / Extended
Modulation: TC-PAM16/32 and with Licence TC-PAM4/8/16/32/64/128
Data Rate: 128kbps - 15.232Mbps
Copper Pairs: 1
Modes: Master / Slave / Auto
Interface: 2x E1 (120Ohm), 1x Nx64 (V.35,V.36,X.21), 4x Ethernet 10/100BaseT
Power: 36 to 72VDC local power, 120/200VDC remote power source
Physical Interfaces: DB15 (E1), DB26 (Nx64), RJ45 (Ethernet), RJ48 (SHDSL), DIN41612 (Back)
Management: Telnet, HTTP, SNMP, SD-Card support and Console Port via ACU/TCU
Temperature: Standard: -5 to +45°C, Extended: -20 to +80°C



Model: FG-PAM-SR2L-4E1B/4Eth-RP,V93

DSL Version: SHDSL / SHDSL.bis / Extended
Modulation: TC-PAM16/32 and with Licence TC-PAM4/8/16/32/64/128
Data Rate: 128kbps - 30.464Mbps, 2x 15.232Mbps
Copper Pairs: 2
Modes: Master / Slave / Auto / Multipoint / Multipair
Interface: 4x E1 (120Ohm), 4x Ethernet 10/100BaseT (Layer 2 Managed Switch)
Power: 36 to 72VDC local power, 120/200VDC remote power source
Physical Interfaces: DB15 (E1), RJ45 (Ethernet), RJ48 (SHDSL), DIN41612 (Backplane)
Management: Telnet, HTTP, SNMP, SD-Card support and Console Port via ACU/TCU
Temperature: Standard: -5 to +45°C, Extended: -20 to +80°C



Model: FG-PAM-SR2L-2E1B/N64/4Eth-RP,V94

DSL Version: SHDSL / SHDSL.bis / Extended
Modulation: TC-PAM16/32 and with Licence TC-PAM4/8/16/32/64/128
Data Rate: 128kbps - 30.464Mbps, 2x 15.232Mbps
Copper Pairs: 2
Modes: Master / Slave / Auto / Multipoint / Multipair
Interface: 2x E1 (120Ohm), 1x Nx64 (V.35,V.36,X.21), 4x Ethernet 10/100BaseT
Power: 36 to 72VDC local power, 120/200VDC remote power source
Physical Interfaces: DB15 (E1), DB26 (Nx64), RJ45 (Ethernet), RJ48 (SHDSL), DIN41612 (Back)
Management: Telnet, HTTP, SNMP, SD-Card support and Console Port via ACU/TCU
Temperature: Standard: -5 to +45°C, Extended: -20 to +80°C

Orion3 SHDSL Sub Rack Module



Model: FG-PAM-SR2L-2E1B/V24/4Eth-RP,V94

DSL Version: SHDSL / SHDSL.bis / Extended
Modulation: TC-PAM16/32 and with Licence TC-PAM4/8/16/32/64/128
Data Rate: 128kbps - 30.464Mbps, 2x 15.232Mbps
Copper Pairs: 2
Modes: Master / Slave / Auto / Multipoint / Multipair
Interface: 2x E1 (120Ohm), 1x RS-232 (V.24), 4x Ethernet 10/100BaseT
Power: 36 to 72VDC local power, 120/200VDC remote power source
Physical Interfaces: DB15 (E1), DB26 (RS-232), RJ45 (Ethernet), RJ48 (SHDSL), DIN41612 (Backplane)
Management: Telnet, HTTP, SNMP, SD-Card support and Console Port via ACU/TCU
Temperature: Standard: -5 to +45°C, Extended: -20 to +80°C



Model: FG-PAM-SR4L-4E1B/4Eth-RP,V96

DSL Version: SHDSL / SHDSL.bis / Extended
Modulation: TC-PAM16/32 and with Licence TC-PAM4/8/16/32/64/128
Data Rate: 128kbps - 60.928Mbps, 4x 15.232Mbps
Copper Pairs: 4
Modes: Master / Slave / Auto / Multipoint / Multipair
Interface: 4x E1 (75/120Ohm), 4x Ethernet 10/100BaseT (Layer 2 Managed Switch)
Power: 36 to 72VDC local power, 120/200VDC remote power source
Physical Interfaces: DB15 (E1), RJ45 (Ethernet), RJ48 (SHDSL), DIN41612 (Backplane)
Management: Telnet, HTTP, SNMP, SD-Card support and Console Port via ACU/TCU
Temperature: Standard: -5 to +45°C, Extended: -20 to +80°C



Model: FG-PAM-SR4L-4Eth,V98

DSL Version: SHDSL / SHDSL.bis / Extended
Modulation: TC-PAM16/32 and with Licence TC-PAM4/8/16/32/64/128
Data Rate: 128kbps - 60.928Mbps, 4x 15.232Mbps
Copper Pairs: 4
Modes: Master / Slave / Auto / Multipoint / Multipair
Interface: 4x Ethernet 10/100BaseT (Layer 2 Managed Switch)
Power: 36 to 72VDC local power
Physical Interfaces: RJ45 (Ethernet), RJ48 (SHDSL), DIN41612 (Backplane)
Management: Telnet, HTTP, SNMP, SD-Card support and Console Port via ACU/TCU
Temperature: Standard: -5 to +45°C, Extended: -20 to +80°C



Model: FG-PAM-SR4L-2V24/4Eth,V98

DSL Version: SHDSL / SHDSL.bis / Extended
Modulation: TC-PAM16/32 and with Licence TC-PAM4/8/16/32/64/128
Data Rate: 128kbps - 60.928Mbps, 4x 15.232Mbps
Copper Pairs: 4
Modes: Master / Slave / Auto / Multipoint / Multipair
Interface: 2x RS-232 (V.24), 4x Ethernet 10/100BaseT (Layer 2 Managed Switch)
Power: 36 to 72VDC local power
Physical Interfaces: DB26 (RS-232), RJ45 (Ethernet), RJ48 (SHDSL), DIN41612 (Backplane)
Management: Telnet, HTTP, SNMP, SD-Card support and Console Port via ACU/TCU
Temperature: Standard: -5 to +45°C, Extended: -20 to +80°C

Orion3 SHDSL Sub Rack Module



Model: **FG-PAM-SR4L-4Eth-RP,V98**

DSL Version: SHDSL / SHDSL.bis / Extended
Modulation: TC-PAM16/32 and with Licence TC-PAM4/8/16/32/64/128
Data Rate: 128kbps - 60.928Mbps, 4x 15.232Mbps
Copper Pairs: 4
Modes: Master / Slave / Auto / Multipoint / Multipair
Interface: 4x Ethernet 10/100BaseT (Layer 2 Managed Switch)
Power: 36 to 72VDC local power, 120/200VDC remote power source
Physical Interfaces: RJ45 (Ethernet), RJ48 (SHDSL), DIN41612 (Backplane)
Management: Telnet, HTTP, SNMP, SD-Card support and Console Port via ACU/TCU
Temperature: Standard: -5 to +45°C, Extended: -20 to +80°C



Model: **FG-PAM-SR4L-2V24/4Eth-RP,V98**

DSL Version: SHDSL / SHDSL.bis / Extended
Modulation: TC-PAM16/32 and with Licence TC-PAM4/8/16/32/64/128
Data Rate: 128kbps - 60.928Mbps, 4x 15.232Mbps
Copper Pairs: 4
Modes: Master / Slave / Auto / Multipoint / Multipair
Interface: 2x RS-232 (V.24), 4x Ethernet 10/100BaseT (Layer 2 Managed Switch)
Power: 36 to 72VDC local power, 120/200VDC remote power source
Physical Interfaces: DB26 (RS-232), RJ45 (Ethernet), RJ48 (SHDSL), DIN41612 (Backplane)
Management: Telnet, HTTP, SNMP, SD-Card support and Console Port via ACU/TCU
Temperature: Standard: -5 to +45°C, Extended: -20 to +80°C

Attention: All units having an interface like N64 (V.35,V.36,X.21), V24 (RS-232, V.24), 485 (RS-485), 703 (G.703, E0) and 4140 can be adapted to any of these interfaces.

Orion3 SHDSL Repeater



Model: **FG-PAM-RGN-Eth-PL, V83** **FG-PAM-RG2N-Eth-PL, V84**

DSL Version:	SHDSL / SHDSL.bis / Extended
Modulation:	TC-PAM16/32 and with Licence TC-PAM4/8/16/32/64/128
Data Rate:	128kbps - 15.232Mbps 128kbps - 30.464Mbps, 2x 15.232Mbps
Copper Pairs:	1 (FG-PAM-RGN-Eth-PL, V83) 2 (FG-PAM-RG2N-Eth-PL, V84)
Modes:	Master / Slave / Auto
Interface:	2/4x Ethernet 10/100BaseT (Layer 2 Managed Switch)
Power:	36 to 230VDC, accepts local and remote power
Physical Interfaces:	RJ45 (Ethernet), RJ48 (SHDSL), Molex (Power), DB9 (LCT)
Management:	Console Port, Telnet, HTTP and SNMP
Power Supply:	90-260VAC option with FG-PAM-PA48G (not included)
Temperature:	-25 to +80°C



Model: **FG-PAM-RGN-2Eth-RL, V81** **FG-PAM-RG2N-4Eth-RL, V84**

DSL Version:	SHDSL / SHDSL.bis / Extended
Modulation:	TC-PAM16/32 and with Licence TC-PAM4/8/16/32/64/128
Data Rate:	128kbps - 15.232Mbps 128kbps - 30.464Mbps, 2x 15.232Mbps
Copper Pairs:	1 (FG-PAM-RGN-2Eth-RL, V81) 2 (FG-PAM-RG2N-4Eth-RL, V84)
Modes:	Master / Slave / Auto
Interface:	2/4x Ethernet 10/100BaseT (Layer 2 Managed Switch)
Power:	36 to 230VDC, accepts local and remote power
Physical Interfaces:	RJ45 (Ethernet), RJ48 (SHDSL), Molex (Power), DB9 (LCT)
Management:	Console Port, Telnet, Web, SNMP and SD-Card support
Power Supply:	90-260VAC option with FG-PAM-PA48G (not included)
Temperature:	-25 to +80°C



Model: **FG-PAM-RGN-Eth-IPP, V83R** **FG-PAM-RG2N-Eth-IPP, V84R**

DSL Version:	SHDSL / SHDSL.bis / Extended
Modulation:	TC-PAM16/32 and with Licence TC-PAM4/8/16/32/64/128
Data Rate:	128kbps - 15.232Mbps 128kbps - 30.464Mbps, 2x 15.232Mbps
Copper Pairs:	1 (FG-PAM-RGN-Eth-IPP, V83R) 2 (FG-PAM-RG2N-Eth-IPP, V84R)
Modes:	Master / Slave / Auto
Interface:	1x Ethernet 10/100BaseT (Layer 2 Managed Switch)
Power:	36 to 230VDC, accepts local and remote power
Physical Interfaces:	RJ45 (Ethernet), Screwing Terminal (SHDSL, Power), RJ45 (LCT)
Management:	Console Port, Telnet, HTTP and SNMP
Power Supply:	90-260VAC option with FG-PAM-PA48G (not included)
Temperature:	-25 to +80°C

Orion3 SHDSL Repeater



Model: **FG-PAM-RGN-Eth-IPL, V83R** **FG-PAM-RG2N-Eth-IPL, V84R**

DSL Version:	SHDSL / SHDSL.bis / Extended
Modulation:	TC-PAM16/32 and with Licence TC-PAM4/8/16/32/64/128
Data Rate:	128kbps - 15.232Mbps 128kbps - 30.464Mbps, 2x 15.232Mbps
Copper Pairs:	1 (FG-PAM-RGN-Eth-IPL, V83R) 2 (FG-PAM-RG2N-Eth-IPL, V84R)
Modes:	Master / Slave / Auto
Interface:	1x Ethernet 10/100BaseT (Layer 2 Managed Switch)
Power:	36 to 230VDC, accepts local and remote power
Physical Interfaces:	RJ45 (Ethernet), Screwing Terminal (SHDSL, Power), RJ45 (LCT)
Management:	Console Port, Telnet, HTTP and SNMP
Power Supply:	90-260VAC option with FG-PAM-PA48G (not included)
Temperature:	-25 to +80°C



Model: **FG-PAM-RGN-Eth-IPH, V83R** **FG-PAM-RG2N-Eth-IPH, V84R**

DSL Version:	SHDSL / SHDSL.bis / Extended
Modulation:	TC-PAM16/32 and with Licence TC-PAM4/8/16/32/64/128
Data Rate:	128kbps - 15.232Mbps 128kbps - 30.464Mbps, 2x 15.232Mbps
Copper Pairs:	1 (FG-PAM-RGN-Eth-IPH, V83R) 2 (FG-PAM-RG2N-Eth-IPH, V84R)
Modes:	Master / Slave / Auto
Interface:	1x Ethernet 10/100BaseT (Layer 2 Managed Switch)
Power:	36 to 230VDC, accepts local and remote power
Physical Interfaces:	RJ45 (Ethernet), Screwing Terminal (SHDSL, Power), RJ45 (LCT)
Management:	Console Port, Telnet, HTTP and SNMP
Power Supply:	90-260VAC option with FG-PAM-PA48G (not included)
Temperature:	-25 to +80°C



Model: **FG-PAM-RGN-Eth-IPS, V83R** **FG-PAM-RG2N-Eth-IPS, V84R**

DSL Version:	SHDSL / SHDSL.bis / Extended
Modulation:	TC-PAM16/32 and with Licence TC-PAM4/8/16/32/64/128
Data Rate:	128kbps - 15.232Mbps 128kbps - 30.464Mbps, 2x 15.232Mbps
Copper Pairs:	1 (FG-PAM-RGN-Eth-IPS, V83R) 2 (FG-PAM-RG2N-Eth-IPS, V84R)
Modes:	Master / Slave / Auto
Interface:	1x Ethernet 10/100BaseT (Layer 2 Managed Switch)
Power:	36 to 230VDC, accepts local and remote power
Physical Interfaces:	RJ45 (Ethernet), Screwing Terminal (SHDSL, Power), RJ45 (LCT)
Management:	Console Port, Telnet, HTTP and SNMP
Power Supply:	90-260VAC option with FG-PAM-PA48G (not included)
Temperature:	-25 to +80°C