

Possible Management of Orion1 & Orion2 Equipment

Good to Know about Orion's

Orion1 and Orion2 (as well as Orion2+) Modems from FlexDSL have always some more features than corresponding products from competitors. Here again the most important points, that are of prime importance:

- Components have industrial temperature range (-40°C to +85°C)
- Components never run on the limit because of better specification
- Programmable, flexible and intelligent design, using High-class chipsets
- Complete solution design, including repeaters, including remote power
- Best performance and low power, long life, high quality design

The **FlexDSL** Orion1 and Orion2 DSL modems and systems are based on the G.SHDSL standard (ITU Rec. G.991.2), what represents the best of several symmetric DSL technologies that have been combined into a single industry standard providing rate adaptation, greater reach and performance, spectral compatibility, lower power and application flexibility.

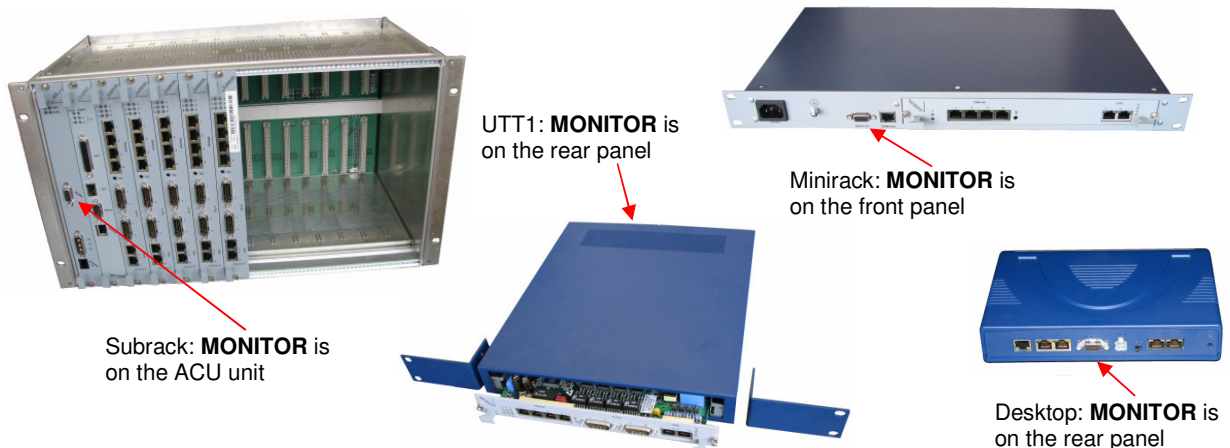
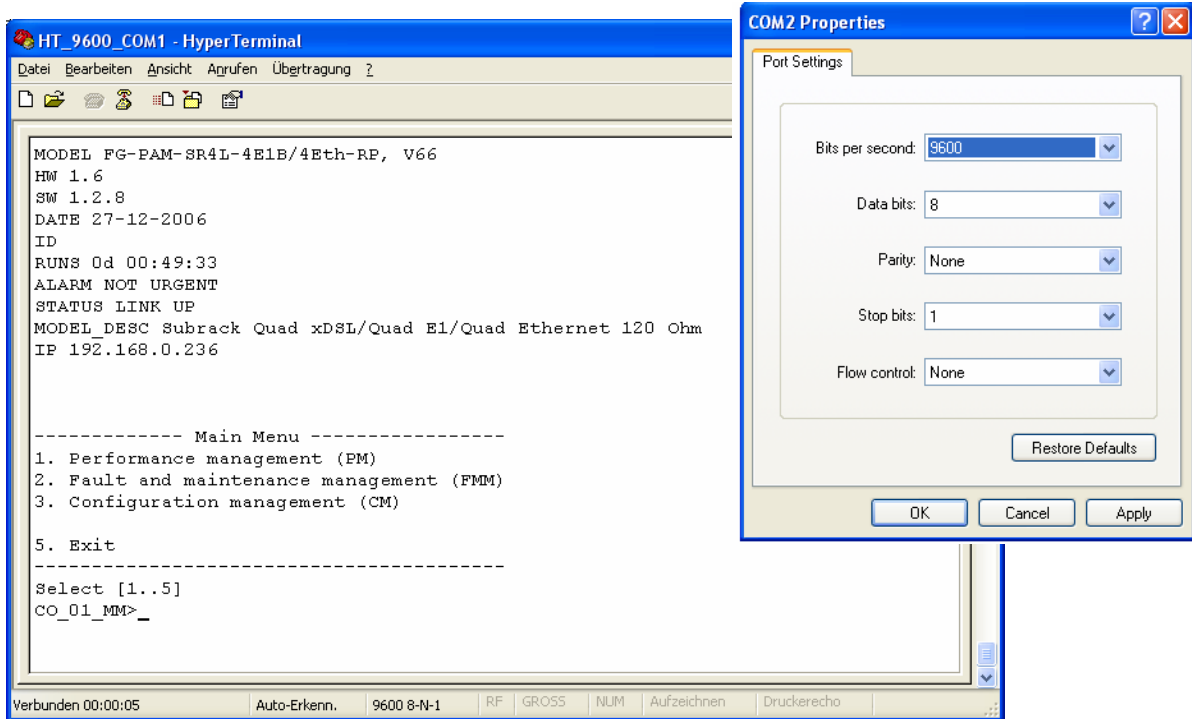
FlexDSL Orion1 & Orion2 Modem Management Chart

	Visual Alarm	Monitor	Telnet	SNMP	Web
	Dry Contact and/or Led	RS-232 V.24/28	Ethernet 10/100BaseT	Ethernet 10/100BaseT	Ethernet 10/100BaseT
Orion1 LTU					
<ul style="list-style-type: none"> • FG-PAM-SRL-E1B, V25 • FG-PAM-SR2L-E1B-MP-RP, V36 • FG-PAM-SRL-E1B/N64/Eth/FXx, V39 • FG-PAM-SRL-E1B/N64/Eth/FXO-RP, V39RP • FG-PAM-SR2L-E1B/N64/Eth/FXx-MP-RP, V42RP 	-Subrack with ACU/TCU -UTT _x -Minirack	-Subrack with ACU/TCU -UTT _x -Minirack	-Subrack with TCU	-Subrack with TCU	Not Available
Orion1 NTU					
<ul style="list-style-type: none"> • FG-PAM-SAN-E1B, V31 • FG-PAM-SAN-E1B/N64, V32 • FG-PAM-SAN-N64, V33 • FG-PAM-SAN-E1B/N64-MP, V34 	Available	Available	Not Available	Not Available	Not Available
Orion2 LTU					
<ul style="list-style-type: none"> • 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 • FG-PAM-SR4L-4E1B/4Eth-RP, V66 • FG-PAM-SR4L-4Eth, V68 	-Subrack with ACU -UTT _x -Minirack	-Subrack with ACU -UTT _x -Minirack	-Subrack with ACU -UTT _x -Minirack	-Subrack with ACU -UTT _x -Minirack	-Subrack with ACU -UTT _x -Minirack
Orion2 NTU					
<ul style="list-style-type: none"> • FG-PAM-SAN-E1B/Eth, V50 • FG-PAM-SA2N-2E1B/Eth, V51 • FG-PAM-RAIL2N-2E1B/Eth, V51 • FG-PAM-SAN-Eth, V52 • FG-PAM-SA2N-Eth, V53 • FG-PAM-SA4N-Eth, V54 	Available	Available	Available	Available	Available
Orion2 Repeater					
<ul style="list-style-type: none"> • FG-PAM-RGN-Eth-PL, V51 • FG-PAM-RGN-Eth-RL, V51 • FG-PAM-RGN-Eth-IPP, V56 • FG-PAM-RG2N-Eth-IPP, V58 • FG-PAM-RGN-Eth-IPL, V56 • FG-PAM-RG2N-Eth-IPL, V58 • FG-PAM-RGN-Eth-IPH, V56 • FG-PAM-RG2N-Eth-IPH, V58 • FG-PAM-RGN-Eth-IPS, V56 • FG-PAM-RG2N-Eth-IPS, V58 	Available	Available	Available	Available	Available

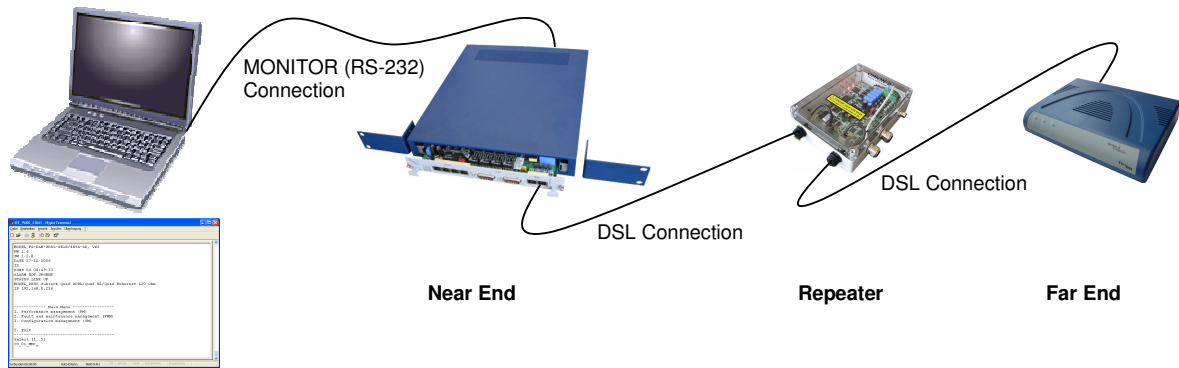
Management by Monitor Interface (RS-232)

The **MONITOR** interface (RS-232) of all **FlexDSL** Orion1 and Orion2 DSL modems can be connected to any management terminal (PC with VT100 terminal, for example the application HyperTerminal). The corresponding connector can be found either on the front or the rear panel of the devices.

The management and diagnostics functions allow to configure the devices and to receive additional information like G.826 parameters or any G.SHDSL link quality.



Please be aware that it is a standard functionality on our modems that also the repeaters and far end units can be managed through the near end unit (command `<CONNECT N:1..13/R>`) :



Management by Telnet

The **TELNET** (TELEcommunication NETwork) access is made through the ethernet network. With any computer and a program with the Telnet protocol all **FlexDSL** Orion2 DSL modems (they always have an ethernet interface) can be fully managed. The management and diagnostics functions allow to configure the devices and to receive additional information like G.826 parameters or any G.SHDSL link quality. After opening the Telnet session, there is a user authentication: "admin" users, who can change configurations and "user" users who can only view parameters and statistics. Initially passwords are empty. In this case the authentication is not performed and users automatically have the administrator rights. Only "admin" users can set passwords for both types of users.

The **FlexDSL** Orion1 DSL modems can also be supported by Telnet, if you use the subrack with a TCU management unit.

Example: The management through a Telnet session can be activated by a standard command on any Windows computer: **telnet <IP-address>**

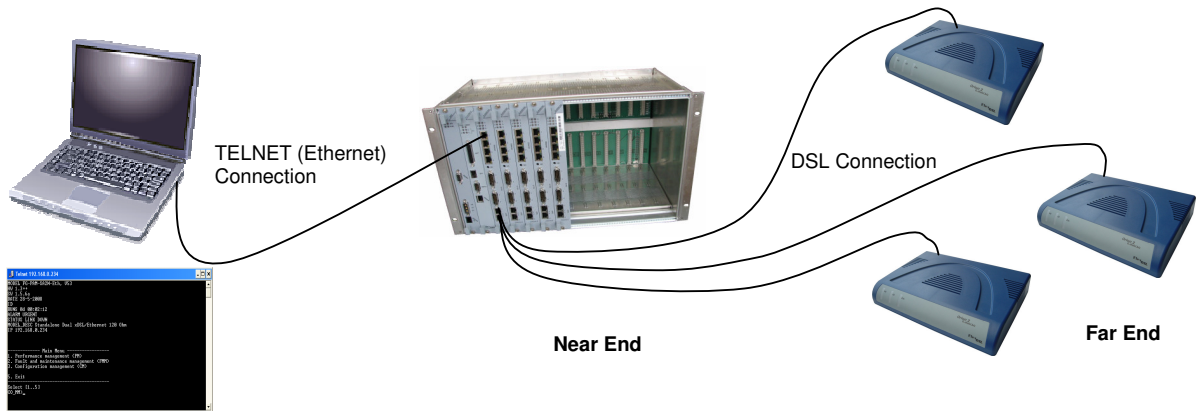
If no symbols are received by the modem over the telnet connection within 5 minutes, this session breaks. And with correct configuration, every DSL modem with an IP address can be reached, it does not matter if near end, far end or repeater.

```

Telnet 192.168.0.234
MODEL FG-PAM-SA2N-Eth, U53
HW 1.3++
SW 1.5.6a
DATE 28-5-2008
ID
RUNS 0d 00:02:12
ALARM URGENT
STATUS LINK DOWN
MODEL_DESC Standalone Dual xDSL/Ethernet 120 Ohm
IP 192.168.0.234

----- Main Menu -----
1. Performance management <PM>
2. Fault and maintenance management <FMM>
3. Configuration management <CM>
5. Exit
-----
Select [1..5]
CO_MM>_

```



Management by SNMP

The management with **SNMP** (Simple Network Management Protocol) is used to monitor the status, to configure and to manage any network equipment. The big advantage of SNMP is usually the immediate unasked information (TRAP) if something is not running correct. **FlexDSL** Orion2 DSL modems support SNMP v1. For **FlexDSL** Orion1 DSL modems devices, the TCU (Terminal Access Unit) in a subrack acts as an agent supporting SNMP v1.

Here some examples of SNMP informations:

AlarmEntry (Orion2)

alarmId	alarmIndex	alarmName	alarmValue	alarmCutoff	alarmType
1	2	LOS-E	off	on	local-minor
2	5	LOS	on	off	local-major, remote-major
3	5	LOSW	on	off	local-major
4	5	BER-H	off	off	local-major
5	5	SEGD	off	off	remote-major
6	5	SEGA	off	off	remote-minor
7	5	LOOP2	off	off	local-minor
8	5	ALB	off	off	local-minor, remote-major
9	6	LOS-S	on	off	local-minor
10	6	LFA-S	on	off	local-minor
11	6	BER-S	off	off	local-minor
12	6	AIS-S	off	off	local-minor
13	6	AIS-R	off	off	remote-minor
14	6	LOOP1	off	off	local-minor
15	7	LOS-S	on	off	local-minor
16	7	LFA-S	on	off	local-minor
17	7	BER-S	off	off	local-minor
18	7	AIS-S	off	off	local-minor
19	7	AIS-R	off	off	remote-minor
20	7	LOOP1	off	off	local-minor
21	0	S1-F	off	off	local-major, maintenance
22	0	HW-F	off	off	local-major, maintenance

SNMP – “Alarm statistics”

commonInfo (Orion2)

model	FG-PAM-SA2N-2E1B/Eth
id	NTU MASTER
hardwareVersion	1.0
softwareVersion	1.1.4
softwareDate	26.7.2006
moduleType	standalone-small
subrackAddress	0
errorCode	0

SNMP – “Information about the device”

G826Entry (Orion2)

q826Id	q826Index	q826Name	q826EB	q826ES	q826SES	q826BBE	q826availableTime	q826UnavailableTime	q826StatReset
1	5	DSL1 CRC6	0	0	0	0	0	24	readValue
2	6	E1-1 CRC4	0	0	0	0	0	29	readValue
3	6	E1-1 E-Bit	0	0	0	0	0	29	readValue
4	7	E1-2 CRC4	0	0	0	0	0	29	readValue
5	7	E1-2 E-Bit	0	0	0	0	0	29	readValue

SNMP – “G.826 statistics”

Using the SNMP messages means to install on the control computer a special SNMP program. We suggest to take Castle Rock SNMPc (<http://www.castlerock.com>) or any other available network managing program like HP OpenView.

There are also some freeware network managing tools available. They help making **FlexDSL** Orion1 and Orion2 modems **easy** remotely accessible and having all the time an overview of the network.

SysUpTime Network Monitor (http://www.ireasoning.com/network_monitor.shtml)

- Personal Edition is free for managing of 20 managed devices

Monitor One (<http://www.fineconnection.com>)

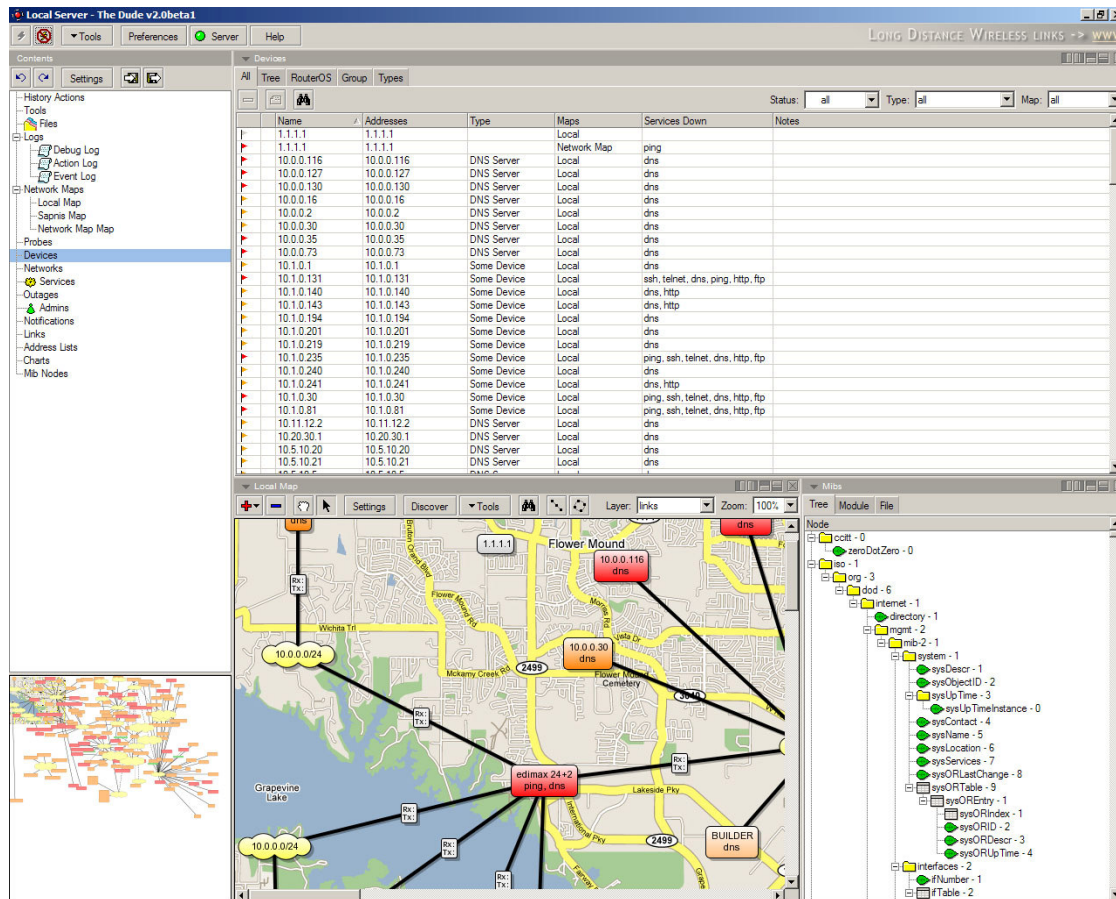
- Personal Edition is free for managing of 20 managed devices

Zenoss Core (<http://www.zenoss.com/product/core>)

- Opensource IT Monitoring Product, only for Linux operating systems

The Dude (<http://www.mikrotik.com/thedude.php>)

- Free of charge full version
- Auto network discovery and layout
- Discovers any type or brand of device
- Device, Link monitoring, and notifications
- Includes SVG icons for devices, and supports custom icons and backgrounds
- Easy installation and usage
- Allows you to draw your own maps and add custom devices
- Supports SNMP, ICMP, DNS and TCP monitoring for devices that support it
- Individual Link usage monitoring and graphs
- Direct access to remote control tools for device management
- Supports remote Dude server and local client
- Runs in Linux Wine environment, MacOS Darwine, and Windows



Web Interface

The **WEB** interface is used to display statistics when the **FlexDSL** Orion2 DSL (this interface is not available for Orion1) modems are connected to the management computer via the ethernet interface. Any WEB browser can be used to access the WEB interface.

Example: To display the statistics you should enter the command: `http://x.x.x.x/` on the WEB browser (X.X.X.X is the IP-address of the modem). After the connection is established, the active window of the WEB browser displays the following alarms and statistics (there are several pages available):

The screenshot shows a Windows Internet Explorer browser window with the following content:

NTU
1.2.5

Alarms

Alarm Status E1		
	E1-1	E1-2
LOS-S	on	off
LFA-S	on	off
AIS-S	off	off
AIS-R	off	off
BER-S	off	off
LOOP1	off	off

Alarm Status xDSL		
	DSL1	DSL2
LOS	on	on
LOSW	on	on
SEGD	off	off
BER-H	off	off
SEGA	off	off
ALB	off	off
LOOP2	off	off

Ethernet	
LOS-E	off

Maintenance	
HW-F	off
DSL-F	off
RCONF	off