



This is LineRunner

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LineRunner Provides

- Modern point-to-point data transmission for professional applications of public and private network operators
- SHDSL with up to 5.7 Mbps via copper lines
- Data transmission via copper lines and optical fibres or leased lines
- Many housing types for indoor and outdoor installation
- Controllable via the integrative network management system ASMOS
- Developed and manufactured according to ISO 9001

LineRunner Applications

For interconnection of single LANs, remote data terminals or multiple utilisation of existing copper cables for telephone extensions, for desktop-desktop connections or bus structures to connect up to 63 locations over one transmission path:

We have the perfect solution for all of your applications.



LineRunner SHDSL

carries out 4.6 Mbps data transmission according to standardised SHDSL methods. Modules with a variety of interfaces and remotely supplied regenerators to increase transmission ranges mean that even special solutions are possible.

The desktop can be easily adapted to customer requirements due to the pluggable optional application interface.



LineRunner
SHDSL

LineRunner SCADA NG

is the solution for efficiently connecting numerous points on long routes (e.g. alongside motorways, railway lines, pipelines etc.) with a maximum of 5.7 Mbps.

LineRunner SCADA NG operates with the multidrop principle. So each SCADA modem is the station's port and regenerator simultaneously. High ranges and variable topologies (point-to-point, line, ring) allow economic and reliable deployment of modern telecontrol networks.



LineRunner
SCADA

LineRunner ASMOS

is the network management system for the entire LineRunner family. Installed on a Windows PC you can configure, manage and monitor all LineRunner systems with LineRunner ASMOS.

An Ethernet or RS-232 connection allows data exchange between ASMOS and the components.

Using ASMOS you can control up to 8000 network elements from a single network management central point.



LineRunner
ASMOS

LineRunner SHDSL LCM/DTM

LineRunner SHDSL LCM/DTM

LCM/DTM modules are the new generation of the LineRunner SHDSL classic units.

SHDSL LCM is the central office module for classic subracks. The module is designed for mixed operation with all "Classic" transmission modules in a subrack. The line card can be equipped with an Ethernet port as an option for 4.6 Mbps.

SHDSL DTM is the designation of the desktops. Two versions are available. A metal housing (DTM-M) or a plastic housing (DTM). It provides a G.703 interface (120 ohms) and a slot for an optional user interface. G.703 (75 ohms), X.21, V.24, V.35, V.36 and Ethernet are available.

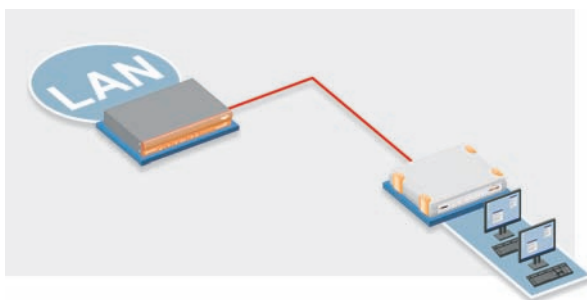
At all X/V interfaces subbitrates between 600 bps and 56.4 kbps can be configured in addition (dependent from the optional user interface) besides the $n \times 64$ kbps transmission rates.

Whenever employed as NT all modules can be remotely supplied by the central LT unit. In addition a DC current source or the normal mains can supply the DTM modules.

Each desktop can be equipped with an optional remote supply module, so it can remotely supply a NT or regenerator. 1-pair or 2-pair versions are available as.

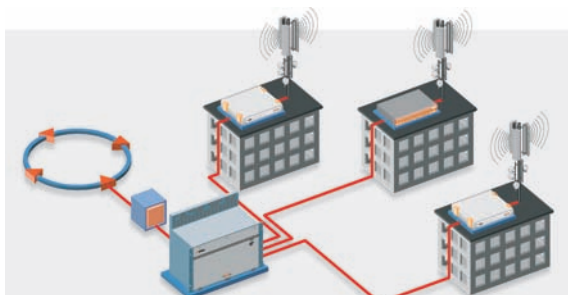
SHDSL DTM desktops are employed as network terminations for the Multi-Service Access Platforms MileGate and UMUX.

Applications



LAN Interconnection

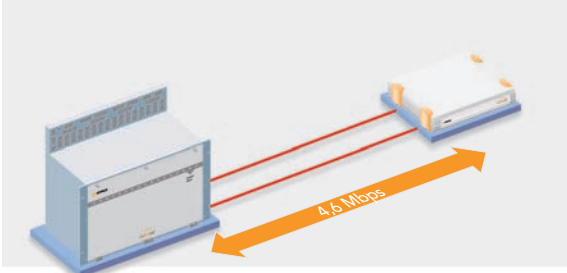
You can link your company network without using leased lines. Employ our DTM with the MOD Ethernet in your central and remote branches or buildings to establish Ethernet connection with max. 4.6 Mbps.



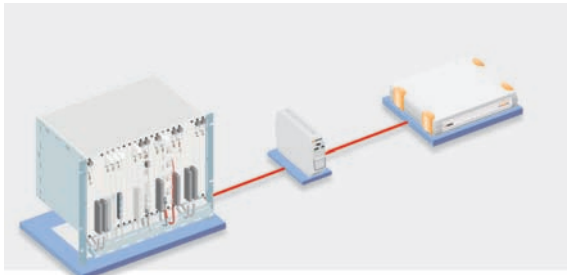
Cellular Access Network

Link your GSM/UMTS base stations and BTS/Node B in city areas with small cells using a cost-effective E1 connection.

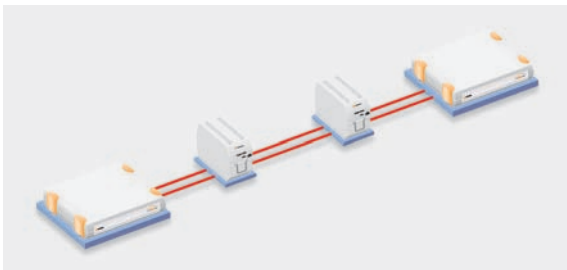
Configurations



LineRunner SHDSL LCM/DTM provides you with a bandwidth of max. 4.6 Mbps via the optional Ethernet application interface.



LineRunner SHDSL DTM is the compact new network termination for leased lines with the Multi-Service Access Multiplexer UMUX. A maximum of 128 leased lines can be multiplexed on one STM-4 interface. Combine UMUX and LineRunner SHDSL DTM for highly flexible SHDSL transmission networks for a variety of applications. For further information on the UMUX family please refer to the UMUX product information.



A maximum of 2 regenerators (with complete management capability and remote supply) can be integrated in the transmission routes. The outdoor housing is prepared for installation of LineRunner transmission technology even in the toughest of environmental conditions.

LineRunner
SHDSL

LineRunner SHDSL LCM/DTM

Subracks



SRV

- V.36
- V.35 via optional adapter
- 37-pin D-Sub jack
- 9 height units (HU)
- 16 Line Cards



SRS2

- G.703 (120 ohms)
- X.21
- 15-pin D-Sub jack
- 8 height units (HU)
- 16 Line Cards



SRA2

- G.703 (75 ohms)
- BNC jacks
- 8 height units (HU)
- 16 Line Cards

Regenerators



Regenerators

- SHDSL
- 1-pair or 2-pair
- Remote supply
- Management function

Further Components for Regenerators

- Housings for regenerators (see page 7)

Line Card



SHDSL LCM

- Data transmission with up to 4.6 Mbps
- 1-pair or 2-pair transmission system
- Remote supply
- Rate adaptive
- Optional Ethernet port
- ITU-T G.991.2

Desktops



Desktop DTM/DTM-M

- SHDSL line card included
- 1-pair or 2-pair transmission system
- RS-232 management interface
- G.703 (120 ohms) user interface
- With AC (90 V ... 265 V) or DC (32 V ... 72 V) power supply

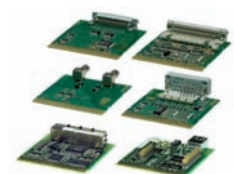


Option

- Remote supply voltage for REG/NT

Optional User Interface

- Ethernet 1-port bridge
- Ethernet 4-port switch
- G.703 (75 ohms)
- X.21
- V.35
- V.36
- X.21 with subrates
- V.24 with subrates
- V.35 with subrates
- V.36 with subrates



Regenerator Housings



LineRunner COD

- For 2 x 1-pair or 1 x 2-pair regenerators
- IP code IP54
- Lockable
- For outdoor installation



LineRunner CID

- For 2 x 1-pair or 1 x 2-pair regenerators
- IP code IP21
- For indoor installation



LineRunner CUD

- For 4 x 1-pair or 2 x 2-pair regenerators
- IP code IP68
- For underground installation



LineRunner CUG1

- For 2 x 1-pair or 1 x 2-pair regenerators
- IP code IP68
- For underground installation

Power Supply Adapters



LineRunner LPS2

- For DC version of SHDSL DTMs
- Primary voltage 230 V



LineRunner LPS3

- For SCADA NG
- Primary voltage 230 V

Mounting Brackets for DTM-M



Mounting Brackets

- For LineRunner DTM-M
- For installation in 19" or ETSI subracks

LineRunner SCADA NG

LineRunner SCADA NG (SCADA = Supervisory Control and Data Acquisition) is the broadband transmission system for reliable and cost-effective data transmission with rates up to 5.7 Mbps in telecontrol systems.

LineRunner SCADA NG is a new generation multidrop system: Data is exchanged via a network with several stations connected in series. Up to 63 LineRunner SCADA NG can transmit data between the single stations on a common transmission route.

LineRunner SCADA NG is a modular system that can transmit data on different transmission media (copper pairs, optical fibre or PDH/SDH

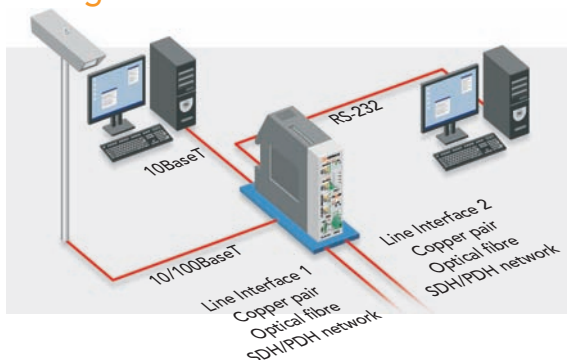
networks). Each LineRunner SCADA NG has two exchangeable line interfaces.

Computers can be connected via a serial interface and a maximum of two Ethernet interfaces.

LineRunner SCADA NG can be operated in extreme environmental conditions. It can be deployed in temperatures ranging from -25°C to $+70^{\circ}\text{C}$.

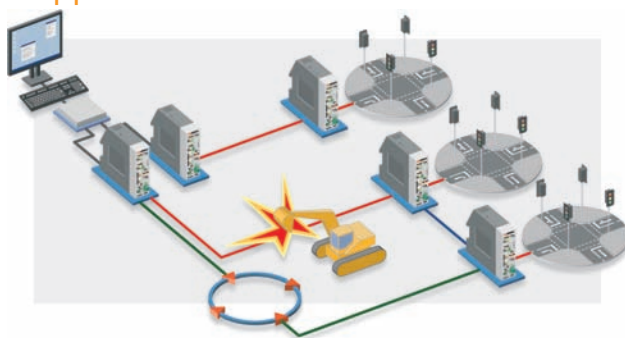
LineRunner SCADA NG is resistant to all kinds of shock, e.g. near railroads (according to EN 30019-2-3) and can be operated in environments with high levels of electro-magnetic interference.

Configurations



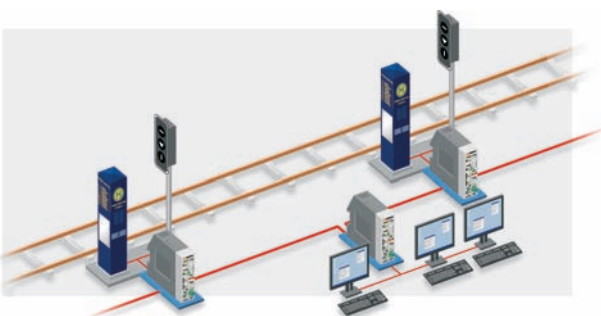
Three user interfaces are available for each LineRunner SCADA NG. A serial interface for low bandwidths and two Ethernet interfaces for large volumes of data. In each LineRunner SCADA NG with exchangeable line interfaces you can implement the change from one transmission medium to another.

Applications



Use LineRunner SCADA NG to link control computers for traffic lights to a master computer in the central office.

In this way the transmission route using multi-drop procedures reduces costs in comparison to point-to-point connections. Because of the ring architecture your system is protected against line disruption (e.g. during excavations).



LineRunner SCADA NG transmits different application data simultaneously over a transmission route. Video and control data can be transmitted via RS-232 and Ethernet at the same time.

Because it is so robust it can be used in rough environments, e.g. railroads and transport authority facilities.

SCADA NG BMD



SCADA NG

- Basic module
- For up to two line interfaces
- 2 x Ethernet (10BaseT and 10/100BaseT)
- 1 x RS-232
- Management port
- SNMP agent



Installation Frame MF3

- Frame for installation in subracks
- For 2 LineRunner SCADA NG



Mounting Bracket MB19

- For 19" racks
- With ground clamp

Line Interfaces



SHDSL Line Interface

- According to ITU-T 991.2
- 1-pair transmission
- LT/NT termination
- Data rate max. 5.7 Mbps



E1 Line Interface

- G.703/G.704
- 2 Mbps
- Range approx. 0.4 km
- Master/slave switch
- Data rate 2 Mbps



OF1S Line Interface

- Optical transmission via one monomode optical fibre
- LT/NT termination
- Laser class 1
- Data rate max. 2 Mbps



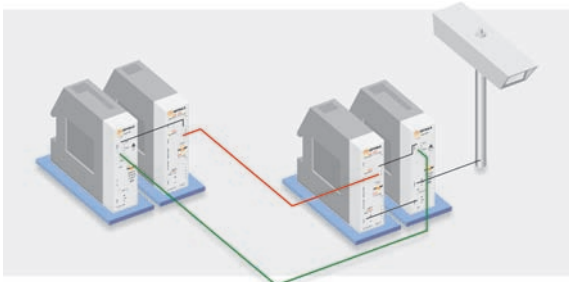
OF1L Line Interface

- Optical transmission via one monomode optical fibre, wavelength multiplexing
- LT and NT module
- Laser class 1
- Data rate max. 2 Mbps

SCADA NG RFS/RPS

You can supply a remote unit with voltage or wetting current via the LineRunner SCADA NG RPS. Transmission is performed via the SHDSL route on max. two separate copper pairs.

The LineRunner SCADA RPS then provides the voltages for max. two modules again.



SCADA NG RFS

- Generates wetting current or power supply voltage
- Transmission via 1 or 2 copper pairs
- Direct connection to SCADA NG possible



SCADA NG RPS

- Transforms remote power
- Connection of one or two units
- Maximum power supply: 8 W

LineRunner ASMOS

LineRunner ASMOS

LineRunner ASMOS is the network management system for all LineRunner modules developed by KEYMILE.

LineRunner ASMOS is designed for configuration and monitoring of LineRunner DSL and LineRunner SCADA systems.

The simple user interface is designed to record and evaluate all unit states fast and cost-effectively. You can prioritise any fault reports using the configurable alarm system.

One or several subbracks can be connected via IP to the central office using the SMU management units.

LineRunner ASMOS Pro manages up to 8,000 LineRunner modules at the same time. LineRunner ASMOS can be installed on modern PCs with Windows® XP Professional or Windows 2003 Server.

Three versions customised to the particular application are available:

LineRunner ASMOS CT

This ASMOS version is designed for local configuration with laptops.

LineRunner ASMOS

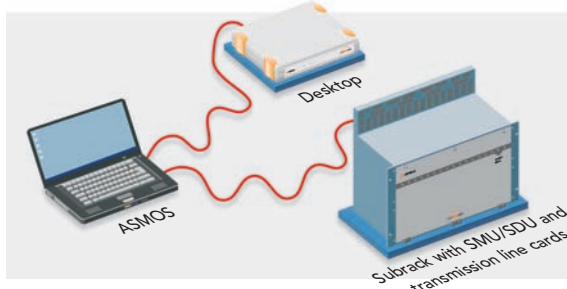
This ASMOS version is designed to configure and monitor up to 1,000 modules from a central office.

LineRunner ASMOS Pro

This ASMOS version is designed for employment in large installations. The ASMOS server accesses the modules, the ASMOS client serves the user to operate the modules and the data base manages the individual attributes of the modules.



Configurations

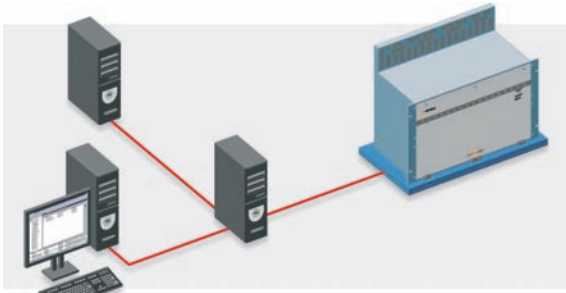


Configure modules on site locally with LineRunner ASMOS CT. Installed on a laptop you can access modules via the Ethernet RS-232 interface. Even local access to subbracks via an SMU/SDU is possible.

Comparison of LineRunner ASMOS Versions

	ASMOS Pro	ASMOS	ASMOS CT
Manageable modules	8000	1000	128
Manageable SMUs	128	32	1
Management interface	Ethernet	Ethernet	Ethernet/seriell
Max. number of clients accessing at the same time	10	–	–
Management module used	SMU/SMU HL	SMU/SMU HL	SMU/SMU HL

Application



LineRunner ASMOS Pro is designed to manage even large networks. ASMOS server and the data base can be distributed on two PCs. Up to 10 ASMOS clients can access the modules at the same time. All accesses are managed using Microsoft® COM/DCOM. An extensive system of access rights protects your application against unauthorised access.

Management Module



SMU

- For classic subracks
- Manages up to eight subracks
- Suitable for SNMP agent
- Access via RS-232/ Ethernet
- For central access

Configuration Module



SDU

- For classic subracks
- Access via RS-232
- For local access



SMU HL

- Manages up to 16 desktops
- Access via RS-232/Ethernet
- For central access to individual desktops

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