

CROCUS SHDSL



> **THE CROCUS SHDSL (SINGLE-PAIR HIGH BIT RATE DIGITAL SUBSCRIBER LINE) IS A NEW GENERATION MANAGEABLE BASEBAND MODEM OFFERING FULL DUPLEX TRANSMISSION UP TO 2.3 MBPS OVER A SINGLE TWO-WIRE UNCONDITIONED UNSHIELDED TWISTED-PAIR CABLE.**

A special 2-pair version offers the possibility to extend the speed range to 4.6 Mbps. The line speed of the modem can be automatically adapted to optimise the throughput as a function of the characteristics of the local loop.

The equipment is based on a new modulation technology called TC-PAM (Trellis Coded Pulse Amplitude Modulation), which guarantees higher speeds and longer loop performance.

The TC-PAM modulation also guarantees spectral compatibility with legacy and ADSL transmission systems in the same cable bundle, offering an attractive solution for high-speed backbone access, for LAN to LAN connections, as well as for imaging and other bandwidth-demanding applications.

A complete range of plug-in interface boards makes the Crocus SHDSL ideal for interfacing with almost every application. Not only traditional serial interfaces like V.35, V.36, RS-530 and X.21 (configurable for Nx64 kbps operation), but also G703 (transparent or with G.704 framing) and direct Ethernet 10/100Base-T connections with integrated router functionality are available. All these interface boards can be exchanged in only a few seconds, so flexibility is maximised.

For large concentration sites, rack-mount versions are mounted in a standard 19" card-nest and can offer densities of up to 30 modems per nest. Both 230/115 Vac and direct 48 Vdc powering can be used.

With a free user-friendly graphical Windows® application, the operator can configure the local or remotely installed equipment. It is a valuable tool for the field engineer as it supports performance monitoring, retrieval of statistics and troubleshooting.

VERSIONS

- > Standard desktop units:
 - > separate 48Vdc and 230/115Vac versions
 - > separate 1-pair and 2-pair versions
- > Rack-mount units:
 - > 1-pair version: 2 modems/card
 - > 2-pair version: 2 modems/card

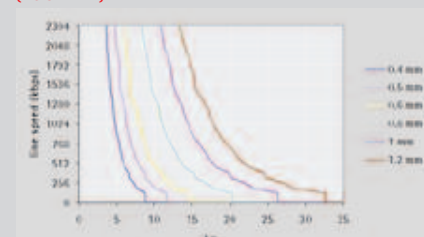
LINE INTERFACE

- > Single or dual pair line access
- > Connector: RJ45 with plug-in converter for RJ12
- > Impedance: 135 ohm
- > Coding: TC PAM, compliant ITU-T G.991.2 Annex A&B (G.SHDSL), ETSI TS 101524
- > Transmit level: 13.5 dBm
- > Line speed per pair: Nx 64 kbps (N=1..36, except G.703: N=3..32)
- > User speeds: 1 pair-model: Nx 64 kbps (N=1..36)
- > 2 pair-model: Nx 128 kbps (N=1..36)
- > Handshaking: compliant G.994.1 (automatic speed negotiation) or fixed speed
- > Performance monitoring: compliant G.826 (errored seconds, severely errored seconds, unavailability seconds)

FRONT PANEL INDICATIONS

- > PWR: Power
- > 142 TST: Test indicator (circuit 142)
- > AIS ERR: Test error indications/AIS for G.703/local alarm indications
- > 103 TXD: Transmit Data on modular interface
- > 104 RXD: Receive data on modular interface
- > 109 DCD: Data carrier detect

CONNECTION SPEED WITH G.994.1 RATE NEGOTIATION (NOISE FREE)



POSSIBLE TEST LOOPS

- > Analogue loop
- > Remote digital loop
- > Local digital loop
- > Integrated error test generator

LOCAL MAINTENANCE TOOLS

- > Direct connection for VT100 local console (command line interface or interactive interface)
- > Direct connection for TMA (Telindus Maintenance Application)
- > External hand LCD terminal

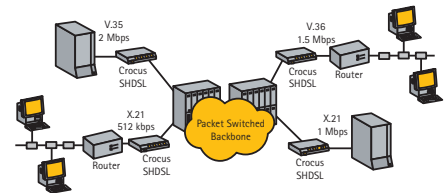


Alternatively one can obtain a comparable functionality through the use of a VT100 terminal or by connecting an external LCD hand terminal. The Crocus SHDSL also offers an automatic installation mode, which allows standard configurations to be set up in only a few seconds.

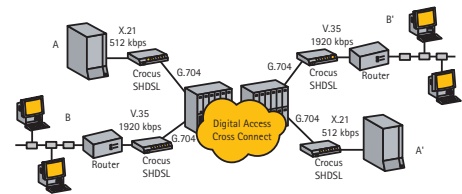
For larger networks, the Crocus SHDSL can be managed with a management application running on the SNMP based HP OpenView® management platform. On this platform one can combine the management of the Crocus SHDSL with the management of all Telindus and many third party equipment.

The integrated management allows one to configure the modem remotely, to query the actual status of the modems, to permanently monitor the performance (real-time and statistical information), to conduct fault analysis, and to report alarms to the operator.

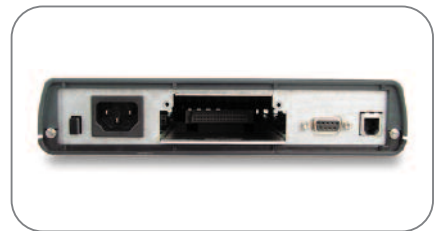
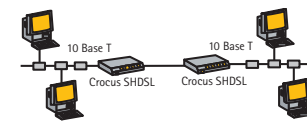
PACKET SWITCHED BACKBONE ACCESS



LEASED LINE SERVICE WITH DIGITAL CROSS CONNECT



DIRECT ETHERNET INTERCONNECTIVITY



FEATURES & BENEFITS

- > BASED ON THE NEW G.SHDSL STANDARD FOR HIGHER SPEEDS AND LONGER LOOP RANGES
- > LINE-TRANSMISSION RATES UP TO 2.3 MBPS (4.6 MBPS FOR 2-PAIR MODEL)
- > ADVANCED FREE MAINTENANCE SOFTWARE
- > AUTOMATIC LINE RATE ADAPTATION
- > MANAGEABLE UNDER HP OPENVIEW®
- > EASY AUTO-INSTALL MODE FOR FAST ROLL-OUT
- > MODULAR PLUG-IN DATA INTERFACES FOR MAXIMUM FLEXIBILITY AND EFFICIENT STOCK MANAGEMENT
- > CENTRAL SITE HIGH-DENSITY CARD-NEST FOR UP TO 30 MODEMS

NETWORK MANAGEMENT TOOLS (IN COMBINATION WITH ORCHID CONTROLLER)

- > TELNET: command line interface or interactive interface
- > TMA: Telindus Maintenance Application
- > TFTP configuration download
- > HTTP web interface
- > PING
- > SNMP: MIB2 and private MIB
- > Software flash download
- > TMA CLI: stand-alone command line console software (optional)
- > TMA for HP OV: management integration in HP Openview (optional)

AVAILABLE DIGITAL INTERFACES

- > V.35
- > V.36/RS-449
- > X.21
- > RS-530/RS-530A
- > G.703/G.704
- > G.703 + serial (dual port)
- > IP Router 2M
- > IP Router 10M

MANAGEMENT INTERFACE

- > Desktop versions: 9600 bps asynchronous (subD 9-pin)
- > Rack-mount versions: Synchronous High speed bus (RJ45) 9600 bps asynchronous (subD 9-pin)
- > Insertion/extraction of management channel in G.703 time-slot 0

IDEAL MAXIMUM DISTANCE (NOISE-FREE)

1 pair	2 pair	0.4mm	0.5mm	0.6mm	0.8mm	1.0mm	1.2mm
Speed (kbps)	Speed (kbps)	26AWG (km)	24AWG (km)	20AWG (km)	18AWG (km)		
64	128	11.0	15.1	21.5	27.2	38.2	42.4
128	256	8.0	11.0	15.6	19.8	27.8	30.8
256	512	8.2	11.3	16.0	20.3	28.5	31.6
512	1024	7.2	9.9	14.0	17.8	25.0	27.7
1024	2048	5.5	7.6	10.7	13.6	19.1	21.2
1536	3072	4.0	5.5	7.8	9.9	13.9	15.4
2048	4096	4.2	5.8	8.2	10.4	14.6	16.2
2304	4608	4.0	5.5	7.8	9.9	13.9	15.4

MECHANICAL DATA (H X W X D)

- > Desktop version: 45 x 220 x 235 mm weight: 750 g (excl interface)
- > Rack-mount version: 235 x 20 x 300 mm weight: 1 kg (excl interface)

POWER REQUIREMENTS

- > 1 pair desktop versions: 85..265 Vac, 9W 36..72Vdc, 4W
- > 2 pair desktop versions: 85..265 Vac, 15W 36..72Vdc, 8W
- > Rack-mount versions: 36..72 Vdc, 8W

SALES CODES

- > 1 pair basic units
 - > 180055 Crocus SHDSL TT BU VAC
 - > 171284 Crocus SHDSL TT BU 48VDC
 - > 180057 Crocus SHDSL TWIN-CV BU (2 modems)
- > 2 pair basic units
 - > 180053 Crocus SHDSL 2P TT BU VAC
 - > 171976 Crocus SHDSL 2P TT BU 48VDC
 - > 171977 Crocus SHDSL 2P TWIN-CV BU (2 modems)

SALES CODES: INTERFACES

- > 175253 G703 INTF 2M Crocus
 - > 175254 G703 INTF NX64K Crocus
- All other transparent data interface modules are found in the sales codes quick reference section

SALES CODES: WETTING CURRENT

- > 180329 Crocus SHDSL wetting current option board (4 lines)