

# Crocus SHDSL Quad



The Crocus SHDSL Quad is a card fitting in the card-nest 4 (CN4) integrating SHDSL transmission technology with cross-connect functionality into a high-density modular central office solution.

## CROCUS SHDSL QUAD

For this purpose, the card features 4 SHDSL line pairs and 4 fixed G.703 interfaces. The SHDSL line pairs can be configured as individual links or can be combined into two-pair operation for increased distance reach.

The SHDSL lines can be terminated at the remote end by the complete range of Crocus SHDSL desktop units, offering full flexibility for end-user connectivity. The SHDSL line-speed can be automatically adapted based on the user requirements, optimising distance performance.

### FEATURES AND BENEFITS

- Based on the G.SHDSL standard for higher speeds and longer loop ranges
- 4 SHDSL line pairs per card with built-in digital cross connect
- 4 G.703/G.704 uplinks
- 1-pair or 2-pair SHDSL operation
- Advanced maintenance software and management tools
- Central site high-density card-nest for up to 60 modems

The on-board digital cross connect (DXC) function offers switching of the 64 kbps time-slots between all ports without restrictions. It gives possibilities for grooming lines, add-and-drop multiplexing and cascading of several cards.

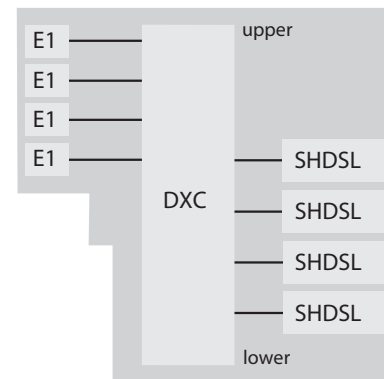
Alternatively, the digital cross connect function may also be disabled, offering up to four G.703 terminated individual modem links that can be operated in framed or unframed mode.

Using an option board, the Crocus SHDSL Quad can deliver remote powering on the lines.

The unit is designed for integration into demanding network environments and can be controlled by a complete set of network maintenance and management tools.



Crocus SHDSL Quad schematic overview



### CROCUS SPECIFICATIONS

#### Line interfaces

- Number of interfaces: 4
- Single pair or two pair line access
- Connector: screw
- Impedance: 135 Ohm
- Coding: TC PAM, compliant ITU-T G.991.2 Annex A&B (G.SHDSL), ETSI TS 101524
- Line speeds:
  - Single pair: N x 64 kbps (N = 3 ... 32)
  - Two pair: N x 128 kbps (N = 3 ... 16)
- Handshaking: compliant G.994.1 (automatic speed negotiation) or fixed speed
- Performance monitoring: compliant G.826 (errored seconds, severely errored seconds, unavailability seconds)
- Central operation

#### G703 interfaces

- Number of interfaces: 4
- Applicable standards: I.431, G.703, G.704, G.706, G.736, G.823, G.825
- User speed: (F)E1 N x 64 kbps (N = 1 ... 32)
- Connector: RJ45 (120 Ohm), DCE
- Transparent or fractional operation

#### Control interface

- Applicable standards: ITU-T V.24, V.28, EIA/TIA 574
- DCE signals: RXD, TXD, SGND
- Connector: female DB9 (EIA/TIA 574)

#### Cross-connect functionality

- Applicable standards: ETS 300 010-1, ETS 300 010-2
- Maximum DXC throughput delay: 650 µsec

#### Clocking

- Possible clock source:
  - Station Clock
  - G.703 interfaces
  - Internal clock
- Fallback possibility in case of clocking failure
- Applicable standards: G.812, G.813
- Single master clock in case of use as individual modems

#### Remote power feeding option

- Controlled by network management
- Maximum standard remote power voltage: 120 Vdc
- Maximum standard remote power current: 60 mA
- Conform ITU-T K.15
- Conform IEC60950-21 Edition 2002-12

#### Sales Code

- > 175258 Crocus SHDSL Quad CV DXC
- > 182466 Crocus SHDSL CV Remote powering option board (4 lines)

#### Front panel Indications

##### General

- PWR: Power
- For each G.703
- LINKDOWN

- LOS (Loss of Signal)
- AIS (Alarm Indication Signal)
- LFA (Loss of Frame Alignment)

##### For each SHDSL connection:

- 142 TST Test indicator
- 109 DCD Handshaking progress  
Data carrier detect

#### Test loops

- SHDSL analogue loop
- SHDSL remote digital loop including repeater loopback test
- G.703 external loopback
- G.703 internal loopback
- Built-in test pattern generator

#### Maintenance and Management Support

- Conform TMA management suite
- Insertion/extraction of management channel in G.703 time-slot 0

#### Mechanical Data H x W x D

- 235 x 20 x 300 mm
- Weight: 1 kg

#### Power Requirement (Per Card)

- 48 Vdc (36 Vdc - 72 Vdc) 190 mA

