

CO Solution G.SHDSL Modem Family G.SHDSL Modem Concentrator



Features

- Meets ITU-T and ETSI Standards; E1 complies with ITU-G.703, G.704, G.706, G.732 and G.823
- Single-pair operation - with a maximum user data rate of 2.304Mbps (2.048Mbps for E1)
- Each line card supports two channels of single pair (two-wire) application on E1/Datacom/Ethernet solution
N x 64k rate selectable from 64kbps to 2.304Mbps
- E1 and fractional E1 capable
- Menu oriented craft screens for ease of use
- Remote configuration of CPE device
- Optional SNMP network management system card
- Downloadable software for easy upgrade
- Central solution in standard 19 inch rack
- Up to 13 cards can be installed
- Hot swappable cards and redundant power supplies (optional)
- Supply options: AC x 2, DC x 2, or AC + DC
- All interface connectors on the rear panel

Specifications

E1 Interface -TDM Based

- Line code: HDB3/AMI
- Data rate: 64kbps to 2048kbps
- Operation: Full or Fractional
- Impedance: 120 ohms balanced / 75 ohms unbalanced
- Framing: Structured with or without CRC-4 or unstructured (transparent)
- Timing: Internal or G.703 recovery
- Compliance: ITU-T G.703, G.704, G.706, G.821, G.823, G.826, CTR12
- Jitter performance : ITU-T G.823
- I/F connections : BNC for unbalanced, 5 pin wire connector or RJ-45 for balanced
- Transmit level
 - Pulse amplitude: Nominal 2.37V+10% for 75 ohm
Nominal 3.00V+10% for 120 ohm
 - Zero amplitude: +0.1V
- Transmit frequency tracking:
 - Internal timing : +/- 30ppm
 - Loopback timing : +/- 50ppm
 - External timing : +/- 100ppm

The **SHRM03** offers four different ways to connect customers over high-speed DSL services; TDM based G.703 E1, TDM based serial DCE port, TDM based Ethernet Bridge or ATM based Ethernet Bridge/Router.

SHRM03 is equipped with an adaptive auto rate capability that identifies the maximum line rate supported by the copper loop. This powerful automatic configuration capability makes installation and service provisioning simple and painless. Further flexibility is provided by the ability to manually set the maximum speed at different levels for different customer-tailored service offerings.



E1 I/O Card



Datacom I/O Card



Ethernet I/O Card

Datacom Interface - TDM Based

- V.35, RS-449, RS-530, X.21 (optional)
- Data Rate : 64kbps to 2304kbps
- Connector : HD26 (adapters available)
- Timing : Internal, External, and Recovery

Ethernet Interface - TDM Based

- Supports 10/100Base-T auto sensing half/full duplex
- Complies with IEEE 802.3/IEEE 802.3u
- Operates as a self-learning bridge in transparent mode
- Supports up to 128 MAC learning addresses
- HDLC encapsulation

Ethernet Interface - ATM Based

- Supports 10/100Base-T auto sensing half/full duplex
- Complies with IEEE 802.3/IEEE 802.3u
- Bridging or routing supported
- PPPoE, PPPoA, IPoA or EoA encapsulations
- In-band, embedded SNMP
- Firewall (Optional)

SHDSL Interface

- Line code : 16 level Trellis coded PAM
- Line data rate : User selectable from 64kbps to 2.304Mbps
- Support : ANSI (Annex A) and ETSI (Annex B)
- Support wetting current : 4mA-20mA
- Compliance: ITU-T G.991.2



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Software Specifications

Performance

- SHDSL PM : ES-crc, SES-crc, UAS, LOSW seconds
- E1 PM : ES, SES, UAS seconds
- Current 15-minute period and 96 previous 15-minute periods of SHDSL and E1 performance parameters
- Current 24-hour period and 7 previous 24-hour periods of SHDSL and E1 performance parameters

LEDs indication

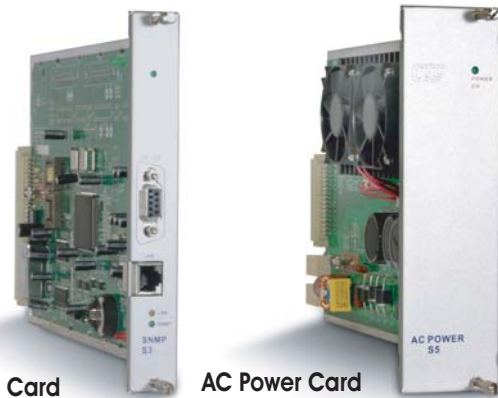
- E1: PWR, SHDSL, FE1, LOF, LOS, TEST, LOOP, ALARM, and FAR ALARM
- V.35: PWR, SHDSL, TD, RD, CTS, TEST, LOOP, ALARM, and FAR ALARM
- Ethernet: PWR, SHDSL, 10M/ACT, 100M/ACT, COL, TEST, LOOP, ALARM, and FAR ALARM

Diagnostic

- E1 line loopback
- V.54 loopback
- Local SHDSL loopback
- Remote SHDSL loopback
- Remote payload loopback

Specifications are subject to change without notice.

Gauge Rate	26 AWG	24 AWG
512Kbps	18500 Ft.	21000 Ft.
1024Kbps	15500 Ft.	18000 Ft.
2048Kbps	12500 Ft.	15000 Ft.
2304Kbps	11000 Ft.	13000 Ft.



SNMP Card

AC Power Card

Available Line Card Options

- **SHRM03-E1/2T** G.SHDSL (2Loop/2W) to E1 (2Channels) TDM based Line Card with E1 Connector (HD26 to RJ45) & RJ45 to BNC cable.
- **SHRM03-V35/2T** G.SHDSL (2Loop/2W) to V.35 (2Channels) TDM based Line Card .
- **SHRM03-530/2T** G.SHDSL (2Loop/2W) to RS-530/RS-449/X.21 (2Channels) TDM based Line Card.
- **SHRM03-ET100/2T** G.SHDSL (2Loop/2W) to 10/100Base-TX Bridge (2Channels) TDM based Line Card with Ethernet connector (HD26 to RJ45).
- **SHRM03-ET10R/2A** G.SHDSL (2Loop/2W) to 10/100Base-TX Router (2Channels) ATM based Line Card.

