

# G.shdsl Rack Mount Solution

*3000 Series*



The **3000 Series** offers different ways to connect customers over high-speed DSL services, either with a G.703 or with a multi-protocol serial DCE port or Ethernet port. The multi-protocol serial DCE port can be configured as a V.35, X.21, RS-449 and RS-530 connection. The G.703 interface will carry 2.048Mbps/1.544Mbps and the multi-protocol serial DCE port transfers data up to 2313kbps.

**3000 Series** 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.

## **Features**

- ◆ Meets ITU-T and ETSI Standards
- ◆ Compliance with ITU-G.703, G.704, G.706, G.732 and G.823
- ◆ Single-pair operation - uses only pair with a maximum user data rate of 2.304Mbps or two-pair operation up to 4.6Mbps
- ◆ Each line card can support up to two channels for one pair (two-wire) application on E1/Datacom solution
- ◆ N x 64k rate selectable from 64kbps to 2.304Mbps
- ◆ E1 and fractional E1 capable
- ◆ Menu oriented craft screens for ease of use

- ◆ Optional SNMP network management system card (*under development*)
- ◆ Downloadable software for easy upgrade
- ◆ Central solution in standard 19 inch rack
- ◆ Up to 13 cards can be installed
- ◆ High density and compact, 4U high
- ◆ Hot swapping of cards and redundant power supplies (optional)
- ◆ All interface connectors on the rear panel
- ◆ Different power source option, AC or DC -48V
- ◆ Supports Remote software upgrade (optional)

## Specification

### 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 and alarm on failure

Compliance: ITU-T G.991.2

### Datacom Interface (*under development*)

User selectable as : V.35, RS-449, RS-530, X.21

Data Rate : 64kbps to 2304kbps

Connector : D25F (adapters available)

Timing : Internal, External, and Recovery

### Ethernet Interface

Supports 10/100Base-T auto sensing half/full duplex

Complied with IEEE 802.3/IEEE 802.3u

Operates as a self-learning bridge in transparent mode

Supports up to 128 MAC learning addresses

Supports bridge filter function

### E1 Interface

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

Timing: internal, and G703

Compliance: ITU-T G703, G704, G706, G821, G823, G826, CTR12

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

Jitter performance : ITU-T G823

Interface connections : BNC for unbalanced, 5 pin wire connector for balanced

### ***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

### ***Diagnostic***

E1 line loopback / Local SHDSL loopback / Remote SHDSL loopback / Remote payload loopback

### ***LEDs indication***

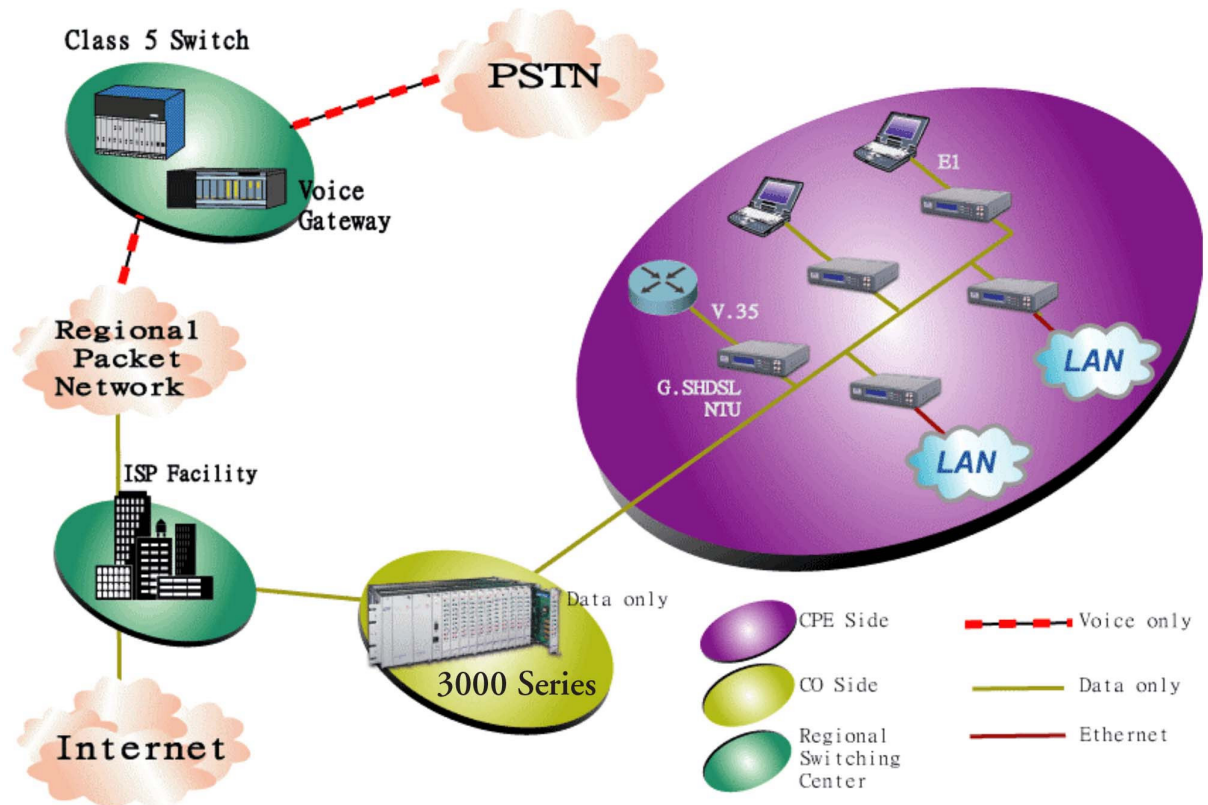
E1 : PWR, SHDSL, FE1, LOF, LOS, TEST, LOOP, ALARM, and FAR ALARM

V35 : 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

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

## Application



## Order Information

<i>Model Name</i>	<i>Description</i>
<b><u>3000 Series - 19" Chassis G.shdsl Rack Mount</u></b>	
<b><u>Master Unit: Chassis</u></b>	
3200-AA	19" 4U Rack mount Chassis for AC+AC power 14 slot Chassis for up to 13 optional Line cards + 1 SNMP card without AC power card, SNMP card, Line cards
3200-AD	19" 4U Rack mount Chassis for AC+DC power 14 slot Chassis for up to 13 optional Line cards + 1 SNMP card without AC power card, SNMP card, Line cards
3200-DD	19" 4U Rack mount Chassis for DC+DC power 14 slot Chassis for up to 13 optional Line cards + 1 SNMP card without SNMP card, Line cards

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**Cooling FAN for 3000 Series** [ Hot swappable ]

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3200-CF 19" 1U Cooling FAN

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**Power modules for 3000 Series** ( Redundant power protect available ) [ Hot swappable ]

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3210 AC 110V/ AC220V Power Board

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**Optional Networking management module for 3000 Series**

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3220 SNMP I/F card with MIB

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**Line cards for 3000 Series** [ Hot swappable ]

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3000 (TDM Base) G.shdsl (2Loop / 2W) -E1( 2 Channels) Line Card.

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3010 (TDM Base) G.shdsl (2Loop / 2W) -V.35( 2 Channels) Line Card.

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3020 (TDM Base) G.shdsl (2Loop / 2W) -10/100 Base-T(2 Channel) Line Card.

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**Optional Cables**

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3000-C1 E1 adapter cable : HD26 Male to 1 x RJ45 Female, 2 meter

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3000-C2 E1 adapter cable : HD26 Male to 2 x BNC Female, 2 meter

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3010-C1 V35 adapter cable : HD26 Male to 1 x MB34 Female, 2 meter

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