

# TDM SHDSL Modem

## 2-wire G.SHDSL TDM

SHDTU03-E1, SHDTU03-ET100, SHDTU03-V35

## 2/4-wire G.SHDSL.bis TDM

SHDTU03b(A)-E1, SHDTU03b(A)-ET100, SHDTU03b(A)-31



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TDM SHDSL modem

SHDSL TDM modem Series is a telecommunication product designed for carriers and SME users. The standalone modems offer a variety of choices for data interfaces to meet different connection needs. SHDSL TDM modem series features E1/T1, Data and Ethernet interfaces, allowing connection to different DTE types. When equipped with multiple interfaces, the standalone SHDSL modem combines user traffic over the SHDSL link. Available DTE combinations include E1+Ethernet, T1+Ethernet that can work simultaneously to share the DSL bandwidth. The SHDSL modem supports two different connectors for G.703 E1 application that link to TDM service either by balanced 120Ω RJ45 jack or unbalanced 75Ω dual BNCs with bit rates from 64kbps to 2.048Mbps. For T1 connection, the SHDSL modem offers balanced 100Ω RJ45 Jack to carry bit rates from 64Kbps to 1.544Mbps. For Ethernet interface application, the SHDSL modem supports 10/100Mbps auto-detected Fast Ethernet with a RJ45 connector, and provides customer premise with LAN to high-speed TDM services. The data rate of LAN interface is up to 5.696Mbps (SHDSL.bis) and 2.3Mbps (SHDSL) for one pair of copper wires and 11.4Mbps (SHDSL.bis) and 4.6Mbps (SHDSL) for two pairs of copper wires. The SHDSL modem can be configured and managed via EOC, or menu-driven Asynchronous Terminal Interface, either locally or remotely.

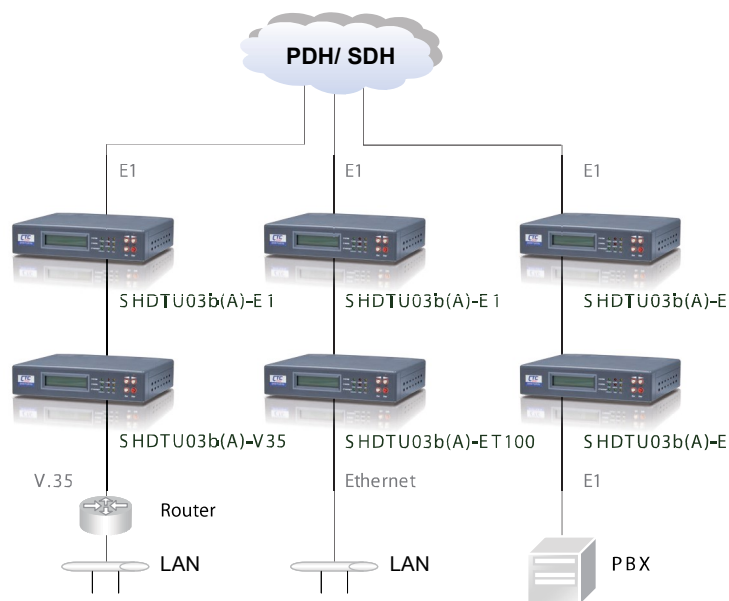
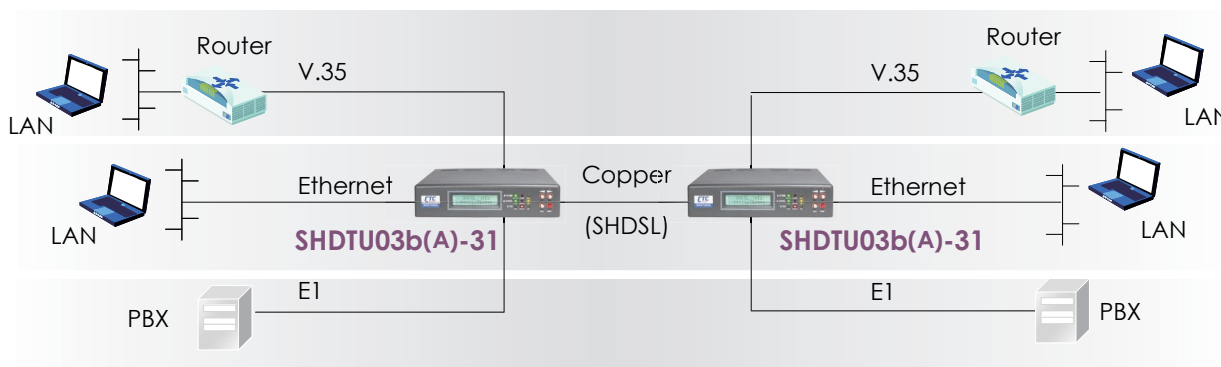
## Features

- Standard ITU-T G.991.2 supports improvement on reach, speed and interoperability in contrast to conventional SHDSL devices
- Fast and cost-effective services as voices or TDM leased line services or LAN
- Efficient usage of single wire pair on existing copper loop infrastructures
- Bandwidth guaranteed transmission equipment
- Supports multiple DTE interfaces working simultaneously on back-to back connection
- Auto rate installation maximizes data rate based on loop conditions
- Local management interface with LCD display
- Remote line loopback
- SHDSL Line performance monitoring (data rate and SNR)
- Raw and per time interval statistics

## Specifications

<b>Network Interface</b>	Line Rate : ITU-T G.991.2 (2004), ITU-T G.994.1 Connection : RJ-45 Impedance : 135 ohms SHDSL.bis Coding : trellis coded pulse amplitude modulation (TC-PAM16 and TC-PAM32) Supports : Annex A, B, F and G Payload Rates • 64Kbps to 5.696Mbps (N=1 to 89) for 2-wire model • 128Kbps to 11.392Mbps (N=2 to 178) for 4-wire model	<b>LAN Interface (Ethernet)</b>	Single Ethernet Interface Payload rates : Up to 5.696Mbps (for 2-wire model) or Up to 8.192Mbps (for 4-wire model) 10/100Mbps Half/Full Duplex, Auto-sensing, Auto-MDI/MDIX Up to 1024 MAC address learning
	SHDSL Coding : trellis coded pulse amplitude modulation (TCPAM-16) Supports : Annex A (ANSI) and Annex B (ETSI) Payload Rates: 64kbps to 2.304Mbps (N x 64kbps, N=1 to 36) Connection : RJ-45 jack (2-wire or 4-wire) Impedance : 135 ohms	<b>Jitter and Wander</b>	Meets G.823 and G.824 jitter and wander requirements
<b>G.703 Interface (E1)</b>	Connection : RJ-45 for balanced 120Ω E1 cable and BNC for unbalanced 75Ω E1 cable Line Rate : 2048KHz +/- 50ppm Line coding : HDB3/AMI Framing : PCM30/PCM30C/PCM31/PCM31C and Unframed Data Rate : 64Kbps to 2.048Mbps (Nx64Kbps, N=1 to 32) Operation : Full E1 and Fractional E1	<b>DSL Timing</b>	Internal From E1/T1 Recovery (E1/T1)
<b>G.703 Interface (T1)</b>	Connection : RJ-45C for balanced 100Ω T1 cable Line Rate : 1544KHz +/- 50ppm Line coding : B8ZS Framing : SF/ESF/Unframed Data Rate : 64kbps to 1.544Mbps (N=1 to 24) Operation : Clear Channel and Fractional T1	<b>Performance Monitoring</b>	ES, SES, UAS, LOWS for SHDSL ES, SES, UAS for E1/T1 Alarms and Errors for SHDSL or interface
		<b>Loopback Tests (for E1, T1 only)</b>	Local Digital Loopback Local Loopback Remote Line Loopback Remote Payload Loopback Far-end Line Loopback Far-end Payload Loopback Build-in 2047 (2 <sup>11</sup> -1) Bit Error Rate Tester
		<b>Management</b>	Configuration with keypads and LCD display Console port (RJ45, RS232C) Support firmware upgradeable
		<b>Certification</b>	CE Approval & EN60950 Certificate
		<b>Dimensions</b>	195 x 48 x 168 mm (D x W x H)
		<b>Power</b>	AC Input : 90~240V with 50~60Hz DC Input : -36V~-72V
		<b>Power Consumption</b>	10W Max
		<b>Environment</b>	Operation temperature : 0 to 50°C Humidity : Up to 95% (non-condensing)

Application



Ordering Information

2-wire G.SHDSL TDM

Model Name	Description
SHDTU03-E1-AD	E1 NTU, AC+DC Power (2-wire 2.3Mbps)
SHDTU03-ET100-AD	Ethernet 10/100Base-TX Ethernet Bridge NTU, AC+DC Power (2-wire 2.3Mbps)
SHDTU03-V35-AD	V35 TDM NTU, AC+DC Power w/V35 Cable (2-wire 2.3Mbps)
SHDTU03-530-AD	RS-530 TDM NTU, AC+DC Power w/RS-530 Cable (2-wire 2.3Mbps)
SHDTU03-449-AD	RS-449 TDM NTU, AC+DC Power w/RS-449 Cable (2-wire 2.3Mbps)
SHDTU03-X21-AD	X21 TDM NTU, AC+DC Power w/X21 Cable (2-wire 2.3Mbps)

2-wire / 4-wire G.SHDSL.bis TDM

Model Name	Description
SHDTU03b-E1-AD	E1 NTU with AC+DC Power (2-wire 5.7Mbps)
SHDTU03b-ET100-AD	Ethernet 10/100Base-TX Ethernet Bridge NTU, AC+DC Power (2-wire 5.7Mbps)
SHDTU03b-31-AD	E1/V35/LAN multi-interface NTU with AC+DC Power (2-wire 5.7Mbps)
SHDTU03bA-E1-AD	E1 NTU with AC+DC Power (4-wire 11.4Mbps)
SHDTU03bA-E100-AD	Ethernet 10/100Base-TX NTU with AC+DC Power (4-wire 11.4Mbps)
SHDTU03bA-31-AD	E1/V35/LAN multi-interface NTU with AC+DC Power (4-wire 11.4Mbps)

SHDTU03 -   -    
 Example: SHDTU03 - E1 - AD

Specifications & design are subject to change without prior notice. Please visit CTC Union website for more details.