TC-200GTA

G.SHDSL with CSU/DSU

Description

TC-200GTA, G.SHDSL modem, transports multi mega bit stream over one or two pair of copper wires using TC-PAM technology. This modem supports multiple data rates ranging from 64 Kbps to 11392Kbps (G.bis) .A complete choice of either V.35,V.11,V.24/RS232 Syn/Asyn data interface , or 10x100M Ethernet or E1 interface or G.703 Co-directional 64K.interface.

The TC-200GTA uses in-band Embedded Operation channel for controlling and monitoring the remote unit. The comprehensive diagnostics function developed includes G.SHDSL, E1 line performance monitoring, in-band local and remote loop backs and real time alarm report.

Local craft port, optional LCD display and SNMP management interface facilitate friendly configuration and diagnostics.

Features

- Meet ITU-T G.991.2 ETSI TS101 524.
- Support data rate from 64Kbps to 11392Kbps (G.bis) per 64Kbps increment.
- Feature modular V.35, LAN , E1, G.703 64K Co-directional , RS232 user interface.
- Provide remote control and monitoring using in-band EOC channel.
- Support DSL PRBS BER test.
- Support V.54 local, remote and numbering loop back.
- Support optional wetting current.
- Perform G.SHDSL and E1 line performance monitoring.
- Provide 96*15 minute and 7*24 hours performance data storage.
- Detect and operate DSL loop crossover.
- Support optional LCD display and SNMP management interface.,
- Support optional SNMP in-band management and Web GUI
- Support remote download and configuration.
- Support optional receiving line feeding power from the far end.
- Support different DTE interface can work simultaneous by sharing the DSL bandwidth
- Support G.bis data rate, 2 wires at 5.7M bis and 4 wires at 11.4M bis

Specification

■ G.SHDSL line

Line Coding: 16 TC-PAM, 32 TC-PAM is selectable
Line Rate: 192K bps ~ 2312 Kbps for one DSL loop
384K bps ~ 4624 Kbps for two DSL loops
Total data rate: 64K - 4624 Kbps [NX64Kbps,N=1 - 72]
Protection: ITU-T K.20, K.21 and IEC60950
Standard: ITU-T G.991.2, Annex A (Default), Annex B
Impedance: 135Ù +/- 5 %
Connector: RJ45/RJ11

Loop distance, at BER of 10E(-7) and 0.4 m/m wire

1Pair Data Rate (Kbps)	64	128	192	384	768	1024	1536	2048	2304
Distance, Km	6.0	6.0	6.0	5.2	4.5	4.2	4.0	3.6	3.5
2Pair Data Rate (Kbps)	128	256	384	768	1356	2048	3072	4096	4608
Distance, Km	6.0	6.0	6.0	5.2	4.5	4.2	4.0	3.6	3.5

Loop distance, at BER of 10E(-7) and 0.5m/m wire

1Pair Data Rate (Kbps)	64	128	192	384	768	1024	1536	2048	2304
Distance, Km	11	11	11	9.0	7.0	6.0	5.0	4.5	4.1
2Pair Data Rate (Kbps)	128	256	384	768	1356	2048	3072	4096	4608
Distance, Km	11	11	11	9.0	7.0	6.0	5.0	4.5	4.1

System Timing

Payload timing
(1) Internal clock, accuracy +/- 30ppm
(2) T1/E1 input clock
(3) Data port DTE clock[TT]
(4) Line Recovered clock

SHDSL timing
(1) Plesiosynchronous, local oscillator: 22.1184MHz +/- 32ppm
(2) Synchronous
(3) Hybrid

■ Optional Data interfaces

TC-200GTA supports multiple customer interfaces as LAN ,1 x FE1/E1, 1x V.35.64K G.703,RS232 interface

◆ E1 Interface

Line rate: 2048KHz +/- 50 ppm
Line Code: HDB3
Framing: PCM31, PCM30, PCM31C, PCM30C and unframed
Data Rate: 64 Kbps to 2048K bps [NX64Kbps, N=1 - 32]
Operation: Full E1 or fractional E1
Pulse shape: Meet ITU-T G.703
Impedance: balanced 120Ω +/- 5% resistive or unbalanced 75Ω +/-5% resistive
Connector: 120ohm RJ45,75ohm BNC

◆ V.35 Data Port Interface

Interface: V.35
Data Rate: 64 Kbps to 4608 Kbps
Connector: DB25F, DB25 to MR34 adaptation cable provided

◆ LAN Interface

Interface: IEEE 802.3/802.u 10/100 Base-T, Mac Address filtering bridge which supports up to 128 Mac address learning port based VLAN and VLAN tag inserting or removing are supported, support QoS and in band function Supports 2K MAC addresses table with 4-ways associative hash algorithm.

Data Rate: 64 Kbps to 11392Kbps（G.bis）, NX64Kbps, N=1 - 72
Bridge: IEEE 802.1D transport, self-learning
Connector: RJ-45

◆ G.703 Co-directional Data Interface

Interface: 64K Co-directional
Connector: RJ-45

◆ V.24/RS232 Data Interface

Interface: V.24
Data Rate: Synchronous：1.2,2.4,4.8,9.6,14.4,19.2, 38.4,56、64 , or 128Kbps
Asynchronous:1.2,2.4,4.8,9.6, 14.4,19.2, 38.4, 57.6, 115.2Kbps
Connector: DB25F

■ Maintenance

Loopbacks: Local and remote AL/DL loopbacks via front panel loopback buttons, VT-100 menu screen or in-band loopback codes
DSL PRBS BER testing
SNR, LOSW, ES, SES and UAS for DSL loops
Supports G.821 and G.826 error performance statistics for E1 interfaces

■ Management Interface

Craft port: RS-232/DB-9 for VT-100
Optional LCD display: Quick mode configuration, diagnostics and monitoring
Optional SNMP/Telnet: Telnet access and an optional SNMP agent support. Web management is optional

■ Optional Wetting Current

1 - 20 ma for each DSL loops, Activate via menu screen

■ Jitter and Wander

Meets G.823 and G.824 jitter and wander requirements for E1 interface

■ Power input

DC: -36 ~ -72 VDC
AC: 90 ~ 260V AC (47 ~ 63 Hz)
AC and/or DC power source can be field selectable. The AC and DC power inputs can be served as power protection mutually.

■ Dimensions

Enclosure: 234.4mm x 155.5mm x 44.2 mm (WxLxH)

■ Environment

Temperature: 0 ~ 60 degree C
Humidity: Up to 95% non-condensing

■ CE marking:

EN 55022 and 55024 compliant
Safety: EN60950 compliant
Surge immunity: L1:L2 1KV , L1/L2:PE 2KV
Lighting Surge ： 4KV

ORDERING

TC-200GTA i1-i2-i3-i4-i5-i6

i1 Specify the SHDSL loop.
- **01** Single pair GSHDSL only
- **02** Two pair GSHDSL

i2 Specify the user DTE interface.
- E1interface 75ohm BNC
- E1 interface 120ohm RJ45
- V.35 interface
- One 10/100M LAN interface
- 4 x10/100M LAN interface
- V.24
- V.11

i3 Specify the LCD display.
- **D** LCD display
- **X** No LCD display

i4 Specify the power input.
- **A** AC 90 ~ 260V
- **D** DC -36 ~ -72 VDC
- **AD** AC and DC power source

i5 Specify the SNMP feature
- **S** Support SNMP agent
- **X** No SNMP support

TC-200GTA 02-V-D-AC-X-X denotes TC-200GTA desktop unit equipped with 2 pair SHDSL transceivers, V.35 interfaces, LCD display, powered by AC input but no line power and no SNMP agent support.

Application

Following Figure (a) shows a point to point application for user interface either at E1, LAN or V.35.

Figure (a) : Point to Point application

The STU-C shown on Figure (b) facilitates the transport of user time slot, via the E1 interface at central office, eliminating CSU/DSU required, to remote branch.

Figure (b): Dynamic transport at central office