



Features:

- 1U height, full front access(ETSI) unit or front and back access(ANSI) unit
- Point to point application
- WAN Ports
 - 2, 4 or 8 pairs G.SHDSL.bis
 - Line rate 5.704 Mbps each G.SHDSL pair
 - Sealing current
 - STU-C (master) or STU-R (slave) mode selectable
 - G.SHDSL.bis using 16-TCPAM and 32-TCPAM
 - Supports auto-adaptive rate
- Tributary Ports
 - One 10/100M fast Ethernet, one V.35 and one asynchronous RS232
- Power supply
 - Single fixed AC power supply
 - Hot swappable single/dual AC or DC power supply
- Bonding
 - Bonding protocol IEEE 802.3ah 2Base-TL
 - Line cut resilience within 50ms
 - Supports manual addition or removal of pair (s) without disrupting the service bandwidth
 - Ratio between the highest and lowest G.SHDSL.bis line rates can be up to 4:1
- Built in self-test and BERT functions
- Alarm relay
- Log in and password security protection
- Firmware download
- Configuration upload and download
- Remote Ethernet Link Fault Propagation (LFP)
- Management port and interface
 - LCD with keypad
 - RS232 console port with VT-100 menu
 - 10/100M fast Ethernet SNMP port
 - SNMP v1 with 5 trap IP
 - Telnet with Secure Shell (SSH) protocol
 - Access Control List (ACL)
 - GUI EMS: LoopView, LoopView Plus
- Standards compliance
 - -ITU-T G.991.2 (G.SHDSL.bis Annex F) and G.994.1
 - -IEEE 802.3ah 2Base-TL
- RoHS compliant

Note: * Future Option

Loop-H3308 Ethernet over Bonded G.SHDSL.bis Standalone

Description

The Loop-H3308 is a standalone device which provides high speed digital transport for Ethernet, V.35 and RS232 point to point applications. The device converts Ethernet, V.35 and RS232 ports over multiple twisted copper pairs by using the 16-TCPAM, 32-TCPAM (G.SHDSL.bis) technology and the IEEE 802.3ah 2Base-TL bonding protocol.

There are 2, 4 or 8 pairs configuration for the G.SHDSL.bis interface. The total bonded bandwidth is dependant on the number of copper wires.

The Loop-H3308 works as a pair (as master and slave). The slave unit is usually located at the customer's premises. The distance that this technology can span without repeaters is dependent on the data rate.

The Loop-H3308 supports configuration and diagnostics by using a local terminal or a remote Telnet or SNMP manager. This allows execution of diagnostics and fault isolation.

The bonding method ensures line cut resilience by removing failed pair(s) from an aggregation group within 50ms. This removal decreases service bandwidth. When the failed pair(s) has recovered, the aggregation bandwidth will become normal without disrupting the service.






For user maintenance, the Bonding G.SHDSL.bis system supports manual addition or removal of pair(s) without disrupting the service bandwidth of the remaining pair(s).

G. SHDSL.bis supports different line rates. The ratio between the highest and lowest line rates can be up to 4:1.

Ordering Information

To order specify:

Note: RoHS compliant units are identified by the letter **G** appearing immediately at the end of the ordering code.

Model	Description	Note
Main Unit		
Loop-H3308-S-AR-n-pp1-pp2-dte-add1- G	1U height ANSI (front & rear access) shelf with RJ48C connector	where n , pp1 , pp2 , dte and add1 are defined in the tables below
Loop-H3308-S- AST -n-pp1-pp2-dte-add1- G	1U height ANSI (front & rear access) shelf with Screw Terminal connector	
Loop-H3308-S-AT-n-pp1-pp2-dte-add1- G	1U height ANSI (front & rear access) shelf with Telco 50 connector	
Loop-H3308-S-AD-n-pp1-pp2-dte-add1- G	1U height ANSI (front & rear access) shelf with DB37 connector	
Loop-H3308-S-ER-n-pp1-dte- G	1U height ETSI (fully front access) shelf with RJ48C connector	where n , pp1 and dte are defined in the tables below
Loop-H3308-S- EST -n-pp1-dte- G	1U height ETSI (fully front access) shelf with Screw Terminal connector	
Loop-H3308-S-ET-n-pp1-dte- G	1U height ETSI (fully front access) shelf with Telco 50 connector	
Loop-H3308-S-ED-n-pp1-dte- G	1U height ETSI (fully front access) shelf with DB37 connector	
Loop-H3308-S-AR-n-AC-dte-add1- G	1U height ANSI (front & rear access) shelf with RJ48C connector	This unit is equipped with a fixed AC power module. Please choose appropriate power cord. Where n , dte and add1 are defined in the tables below
Loop-H3308-S- AST -n-AC-dte-add1- G	1U height ANSI (front & rear access) shelf with Screw Terminal connector	
Loop-H3308-S-AT-n-AC-dte-add1- G	1U height ANSI (front & rear access) shelf with Telco 50 connector	
Loop-H3308-S-AD-n-AC-dte-add1- G	1U height ANSI (front & rear access) shelf with DB37 connector	
Loop-H3308-S-ER-n-AC-dte- G	1U height ETSI (fully front access) shelf with RJ48C connector	This unit is equipped with a fixed AC power module. Please choose appropriate power cord. Where n and dte are defined in the tables below
Loop-H3308-S- EST -n-AC-dte- G	1U height ETSI (fully front access) shelf with Screw Terminal connector	
Loop-H3308-S-ET-n-AC-dte- G	1U height ETSI (fully front access) shelf with Telco 50 connector	
Loop-H3308-S-ED-n-AC-dte- G	1U height ETSI (fully front access) shelf with DB37 connector	
Plug-in Power Module		
Loop-H3308-SD24- G	Single DC power supply (-24Vdc: -18 to -36 Vdc)	For power redundancy, order extra power supply
Loop-H3308-SD48- G	Single DC power supply (-48Vdc: -36 to -72 Vdc)	
Loop-H3308-SA- G	Single AC power supply (100 to 240 Vac, 50/ 60 Hz). Please choose an appropriate power cord.	
Accessories		
Power Cord		
Loop-ACC-PC-USA- G	AC power cord for Taiwan/USA	
Loop-ACC-PC-EU- G	AC power cord for Europe	
Loop-ACC-PC-UK- G	AC power cord for UK	
Loop-ACC-PC-AUS- G	AC power cord for Australia	
Loop-ACC-PC-CH- G	AC power cord for China	
User's Manual (All User's Manuals are RoHS compliant)		
Loop-H3308-S-UM	User's Manual (optional, paper copy). A CD version of the manual is already included as standard equipment.	

■ where **n** is used to select on-board G.SHDSL.bis

n =	Description	Note
2	2 pairs G.SHDSL.bis	
4	4 pairs G.SHDSL.bis	
8	8 pairs G.SHDSL.bis	
2SC1	2 pairs G.SHDSL.bis and sealing current	
4SC1	4 pairs G.SHDSL.bis and sealing current	
8SC1	8 pairs G.SHDSL.bis and sealing current	

■ where **pp1** is used to select 1st power supply:

pp1 =	Description	Note
SA	Single AC power supply (100 to 240 Vac, 50/ 60 Hz)	Please choose appropriate power cord for SA version.
SD24	Single DC power supply (-24Vdc: -18 to -36 Vdc)	
SD48	Single DC power supply (-48Vdc: -36 to -72 Vdc)	

■ where **pp2** is used to select 2nd power supply for **ANSI shelf** only:

pp2 =	Description	Note
SA	Single AC power supply. (100 to 240 Vac, 50/ 60 Hz). Please choose an appropriate power cord.	Please choose appropriate power cord for SA version.
SD24	Single DC power supply (-24Vdc: -18 to -36 Vdc)	
SD48	Single DC power supply (-48Vdc: -36 to -72 Vdc)	

NOTE 1: The combinations of pp1 and pp2 power modules:

For ANSI unit:

- **pp1=SA** (Single AC power plug-in in front or at rear)
- **pp1=SD48** (Single DC power plug-in at rear)
- **pp1=SD48, pp2=SD48** (Dual hot-swappable DC, both rear plug-in)
- **pp1=SA, pp2=SA** (Dual hot-swappable AC, one front and one rear plug-in)
- **pp1=SA, pp2=SD48** (Hot-swappable AC front and DC rear plug-in)

Note: For ANSI unit, DC power is available in rear panel only

For ETSI unit (all power modules in front):

- **pp1=SA** (Single AC power plug-in)
- **pp1=SD48** (Single DC power plug-in)
- **pp1=SD48, pp2=SD48** (Dual hot-swappable DC power plug-in)

■ where **dte** must be used to select one of the following factory-installed daughter boards. (Choose one only.)

dte =	Description	Note
ETH	Single Ethernet port on-board daughter card	Factory installed option
V35	Single V.35 port on-board daughter card	Factory installed option
EV	Single Ethernet port and single V.35 port on-board daughter card. (Ethernet/V.35 choice is software selectable)	Factory installed option
EVR	Single Ethernet port, single V.35 port, and single Async. RS232 port on-board daughter card. (Ethernet/V.35 choice is software selectable)	Factory installed option

■ where **add1** is used to select a LCD display. If a LCD display is not required leave this field blank.

add1 =	Description	Note
LCD	LCD (2 x 16) front panel display	LCD is supported for ANSI shelf only

Loop-H3308 Ethernet over Bonded G.SHDSL.bis-Standalone Product Specifications

WAN-G.SHDSL. bis Line Interface

Number of copper pairs	2, 4 or 8
Line Rate (per pair)	8K+n x 64 Kbps, n =3,4,5...89
Bonding protocol	IEEE802.3ah 2Base-TL
Standard	ITU-T G.991.2 (G.SHDSL.bis Annex F) and G.994.1
Clock Mode	Plesiochronous
Line code	16-TCPAM and 32-TCPAM, full duplex with adaptive echo cancellation over unconditioned 19-26 AWG twisted pair
Connector	RJ48C, Screw Terminal , DB37, Telco 50 (optional)

Tributary-Ethernet Interface

Ethernet functions	10/100 BaseT, IEEE802.3 Auto-negotiation (10/100M) Auto MDI/MDIX Full or half duplex IEEE802.1d self learning, up to 2K MAC addresses
Connector	RJ45

Tributary-V.35 Interface

Data rate	Up to 8.704 Mbps
Connector	DB25 DCE

Tributary-RS232 Interface

Data rate	Asynchronous, up to 19200 bps
Connector	DB9 DCE

Bonding Function

Protocol	IEEE 802.3ah 2Base-TL.
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System Clock

Clock Source	Internal clock V.35 port clock G.SHDSL.bis port clock
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Management

LCD	2 line by 16 character LCD with keypad
Console port	Electrical: RS232 Protocol: Menu driven VT-100 Connector: DB9S (DCE)
Telnet	Telnet with Secure Shell (SSH), up to 5 telnet sessions
Access Control List	ACL
SNMP	SNMPv1 with 5 trap IP
SNMP Standard MIB	RFC 1157 SNMP v1 RFC 1155 Structure and Identification of Management Information RFC 1212 Concise MIB Definition RFC 1213 MIB II RFC 3276 SHDSL MIB
GUI EMS	LoopView, LoopView Plus

Diagnostics Test

BERT	Test pattern $2^{23}-1$ (per G.SHDSL.bis pair)
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Performance Monitor

Performance Reports	Performance parameters of G.SHDSL.bis line: -Errored Second(ES), Severe Errored Second(SES), Cyclic Redundancy Check (CRC), LOSWS (Loss of Sync Word Second), Unavailable Second(UAS) -96 fifteen minute periods report -Ten 24 hour periods report
Alarm History	Controller Alarm: Alarm Cut Off, Master Clock Loss, Working Loss, Power Loss G.SHDSL Alarm: LOS, Loop Attenuation, SNR Margin, ES, SES, CRC, LOSWS, UAS
Alarm Queue	Contains up to 500 alarm records which record the latest alarm type, alarm severity , and date & time

Electrical

Power	100 to 240 Vac, 50/ 60 Hz -24Vdc: (-18 to -36 Vdc) -48Vdc: (-36 to -72 Vdc)
Power consumption	4 ports: 12.8 Watts maximum (without sealing current) 8 ports: 18.4 Watts maximum (without sealing current)

Physical and Environmental

Dimensions	432 x 44 x 290 mm (W x H x D)
Temperature range	0 – 60 °C
Humidity	0 – 95% RH (non-condensing)
Mounting	Desk-top, mounted in 19" or 23" standard rack

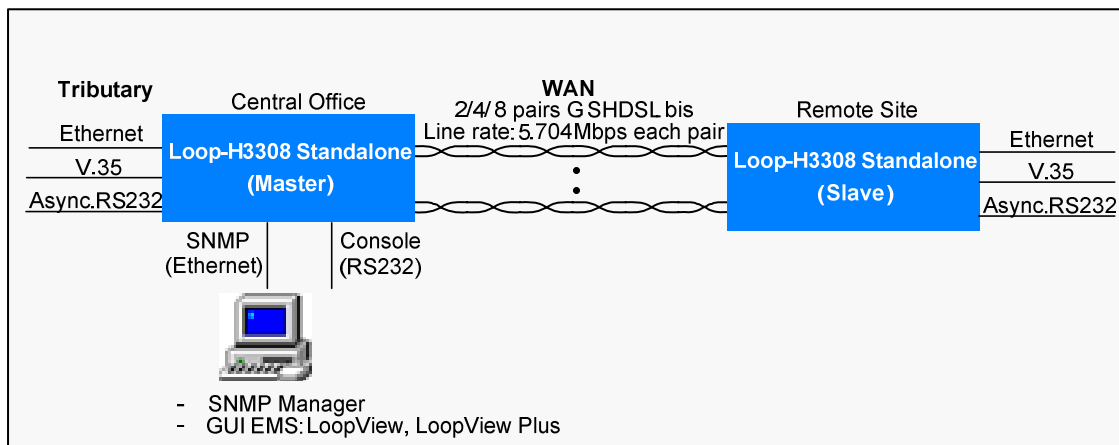
Certification

EMI/EMC	EN55022 Class A, EN55024, FCC Part 15 Subpart B Class A
Safety	EN60950-1

Standards Compliance

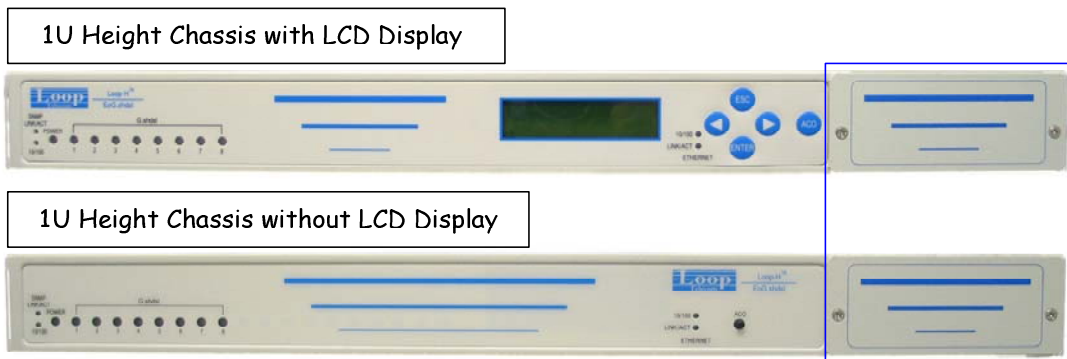
ITU	ITU-T G.991.2 (G.SHDSL.bis Annex F) and G.994.1
IEEE	802.3 10/100 BaseT 802.3ah 2Base-TL

Application Illustration



Panel Views

ANSI Front Panel View



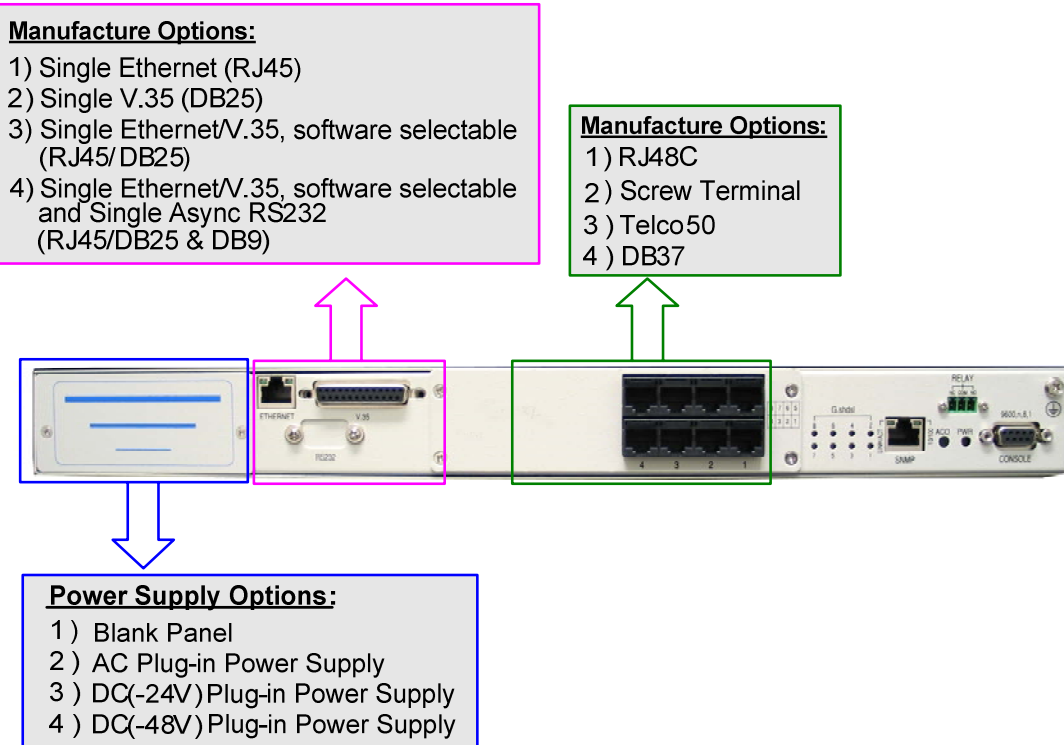
Power Supply Options:

- 1) Blank Panel
- 2) AC Plug-in Power Supply
- 3) DC(-24V) Plug-in Power Supply
- 4) DC(-48V) Plug-in Power Supply

Note :

- a) If fixed AC power is selected at the back, Blank Panel is needed at the Front Panel
- b) If only one power is selected at the back, Blank Panel is needed at the Front Panel for further power options.

ANSI Rear Panel View

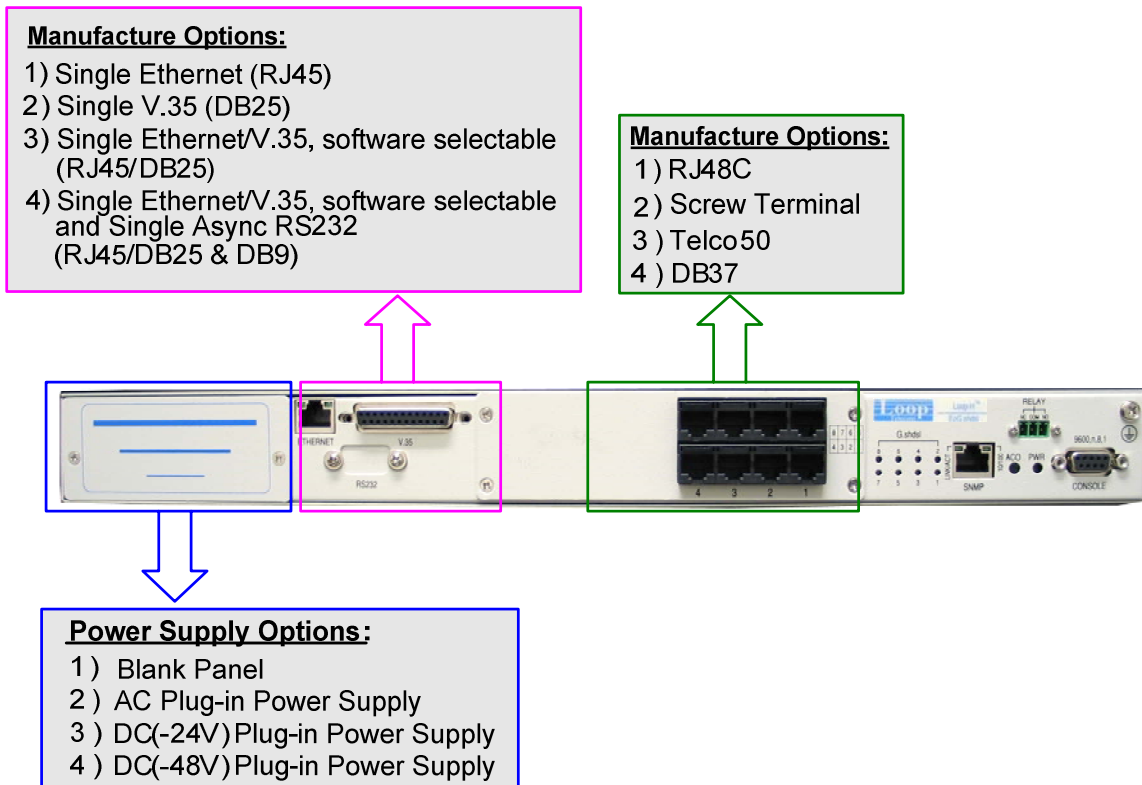


- #### Manufacture Options:
- 1) Single Ethernet (RJ45)
 - 2) Single V.35 (DB25)
 - 3) Single Ethernet/V.35, software selectable (RJ45/DB25)
 - 4) Single Ethernet/V.35, software selectable and Single Async RS232 (RJ45/DB25 & DB9)

- #### Manufacture Options:
- 1) RJ48C
 - 2) Screw Terminal
 - 3) Telco50
 - 4) DB37

- #### Power Supply Options:
- 1) Blank Panel
 - 2) AC Plug-in Power Supply
 - 3) DC(-24V) Plug-in Power Supply
 - 4) DC(-48V) Plug-in Power Supply

ETSI Front Panel View



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