Loop-O9310 4E1 or 4T1 Fiber Optical Mux

CPU Version

Non-CPU Version

Features

- Up to 4 E1 or 4 T1 links on one fiber
- Optical 1+1 protection
- 10/100 BaseT Ethernet: Bridge mode, maximum transmission bandwidth 22Mbps (optional)
- One V.35, X.21, RS449/V.36, RS232/V.28, EIA530, or EIA530(A) interface
- Console, Ethernet for SNMP management
- SNMP management and LoopView management
- Remote slave unit can be managed through EOC.
- Non-manageable model configurable via DIP switches
- LED indicators
- Alarm relay and alarm cut off
- BNC or RJ45 connectors for 4 E1s (manufacture option)
- RJ45 connectors for 4 T1s (manufacture option)
- Multiple optical fiber transmission distances
- Single mode and multi-mode fiber modules

Description

Loop Telecom's Loop-O Fiber Optical Mux product family provides ideal solutions for building fiber-based E1 or T1 networks. As one of this family, model Loop-O9310 can multiplex up to 4 E1 or 4 T1 signals for transmission over an optical fiber, resulting in longer reach without repeaters and superior performance compared to copper media.

The E1 model supports an optional 1+1 protection, an optional 10/100 BaseT Ethernet port, an optional V.35, X.21, RS449/V.36, RS232/V.28, or EIA530 or EIA530(A) with DTE/DCE selection. It is available in two versions: (1) SNMP manageable and (2) non-manageable. The SNMP manageable model has a master unit with CPU, used to manage a slave unit, and a slave unit without CPU, managed by the master unit through EOC. A basic non-manageable model without CPU provides system setup and loopback by DIP switches setting. Applications include interconnections for LAN, WAN, SONET/SDH, ATM, and DLC.

The T1 model is a basic non-manageable model without CPU. DIP switches are used for system setup and loopback settings. Applications include interconnections for ATM and DLC.

Ordering Information

To specify options, choose from the list below

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

Model (RoHS compliant)	Model (non RoHS compliant)	Description
Main Unit without SNMP management		
Loop-O9310-cc-opt1-opt2-pp -add1-add2-**G**	Loop-O9310-cc-opt1-opt2-pp -add1-add2	Fiber Optical MUX w/o CPU
Main Unit with SNMP management		
Loop-O9310-CPU-cc-opt1-opt2-pp -add1-add2-**G**	Loop-O9310-CPU-cc-opt1-opt2 -pp-add1-add2	Fiber Optical MUX w/ CPU
Accessories		
Power Cord (All power cord are RoHS compliant.)		
Loop-ACC-PC-USA	AC power cord for Taiwan/USA	
Loop-ACC-PC-EU	AC power cord for Europe	
Loop-ACC-PC-UK	AC power cord for the UK	
Loop-ACC-PC-AUS	AC power cord for Australia	
Loop-ACC-PC-CH	AC power cord for China	
Cable(All cables are RoHS compliant.)		
Loop-ACC-CAB-DB25M-30-1M34F	DSUB-25pin/Male to M34/Female V.35 Conversion cable Length: 30 cm	
Loop-ACC-CAB-DB25M-30-1DB15F	DSUB-25pin/Male to DSUB-15/Female X.21 Conversion cable Length:30 cm	
Loop-ACC-CAB-DB25M-30-1DB37F	DSUB-25pin/Male to DSUB-37/Female RS449 Conversion cable Length: 30 cm	
Tray		
61.000015.A00-**G**	61.000015.A00	19" Tray (One tray for two base units)
81.TRAY23.000-**G**	81.TRAY23.000	23" Tray (One tray for two base units)
User's Manual		
Loop-O9310-UM	User's Manual (paper, hard copy-optional). A CD version of the manual is already included as standard equipment.	

■ Where **cc =**

Note: 4T is for O9310-non CPU version only.

4E120 for RJ48C connector (120 ohm)
4E75 for BNC connector (75 ohm)
4T for RJ48C connector (100 ohm)

■ Where **opt**1= one of the following module types: **(must select one)**

Note: All optical modules are RoHS compliant.

opt1=	Description	Note
SAA	single optical module with dual uni-directional fiber, 1310 nm, SC optical connector, 30 km reach (20dB)	• Use 2 fibers
SBB	single optical module with dual uni-directional fiber, 1310 nm, SC optical connector, 50 km reach (30dB)	
SCC	single optical module with dual uni-directional fiber, 1310 nm, FC optical connector, 30 km reach (20dB)	
SDD	single optical module with dual uni-directional fiber, 1550 nm, SC optical connector, 20 km reach (12dB)	
SEE	single optical module with dual uni-directional fiber, 1550 nm, SC optical connector, 100 km reach (40dB)	
SSM	single optical module with single bi-directional fiber (master), 1310 nm transmit and 1550 receive, SC optical connector, 30 km reach (20dB)	• 1310 nm from master to slave • Order **SSM** to use with **SSS** • Use 1 fiber
SSS	single optical module with single bi-directional fiber (slave), 1310 nm receive and 1550 transmit, SC optical connector, 30 km reach (20dB)	• 1550 nm from slave to master • Order **SSS** to use with **SSM** • Use 1 fiber

NOTE: For other special optical modules, please contact your nearest Loop sales representative.

■ Where **opt2** = one of the following module types **(optional**).

opt2=	Description	Note
SAA	Same as in opt1 table above.	1. Not available if you selected cc=4T (T1) version. 2. If this option is not required, omit the opt2 field in the ordering code. Eg. Loop-O9310-CPU-cc-opt1-pp-add1-add2
SBB	Same as in opt1 table above.	
SCC	Same as in opt1 table above.	
SDD	Same as in opt1 table above.	
SEE	Same as in opt1 table above.	
SSM	Same as in opt1 table above.	
SSS	Same as in opt1 table above.	

NOTE: For other special optical modules, please contact your nearest Loop sales representative.

■ Where **pp** is used to select power supply:

pp =	Description	Note
SA	Single AC power supply (100 to 240 Vac)	For AC, choose an appropriate power cord.
SD48	Single DC power supply (-48 Vdc: -36 to -72 Vdc)	
P9	Combination of AC and DC (100 to 240 Vac ; -48 Vdc: -36 to -72 Vdc dual-feed)	

■ Where **add1** is used to select one additional option. If this option is not required, omit the **add1** field in the ordering code.
Note: LCD is RoHS compliant.

add1 =	Description	Note
LCD	LCD front panel	For O9310-CPU version only

■ Where **add2** is used to select one of the following additional options. If this option is not required, omit the **add2** field in the ordering code.

add2 =	non ROHS Compliant	ROHS Compliant	Description	Note
DTE	Available	Available	Software-selectable DTE or DCE interface port with DB25 connector that supports V.35, X.21, RS449/V.36, RS232/V.28, EIA530 and EIA530A protocols.	1. For O9310-CPU version only 2. Not available if you selected an opt2 option. 3. Conversion Cable ● DSUB-25pin/Male to M34/Female V.35 Conversion cable Length: 30 cm ● DSUB-25pin/Male to DSUB-15/Female X.21 Conversion cable Length:30 cm ● DSUB-25pin/Male to DSUB-37/Female RS449 Conversion cable Length: 30 cm **Note:** Conversion cable is not included, order conversion cable separately from accessory.
BR	Available	Available	10/100M Bridge	1. For O9310-CPU version only
BRDTE	Available	Available	Bridge and DTE Card	1. For O9310-CPU version only 2. Not available if you selected an opt2 option. 3. Conversion Cable ● DSUB-25pin/Male to M34/Female V.35 Conversion cable Length: 30 cm ● DSUB-25pin/Male to DSUB-15/Female X.21 Conversion cable Length:30 cm ● DSUB-25pin/Male to DSUB-37/Female RS449 Conversion cable Length: 30 cm **Note:** Conversion cable is not included, order conversion cable separately from accessory.

■ **Loop-O9310-CPU-4E120-SAA-SD48-LCD-BRDTE =**
Loop-O9310 4E1 RJ48C connector (120 ohm) Fiber Optical MUX with CPU, single optical module with dual uni-directional fiber, 1310 nm, SC optical connector, 30 km reach (20dB), no opt2 required, single DC (48Vdc) power supply, LCD

display, Bridge, and DTE card.

Loop-O9310 4E1 Fiber Optical Mux Product Specifications

Optical Fiber Interface

Source	MLM Laser	System Gain	30 dB
Wavelength	1310 ± 50 nm, 1550 ± 40 nm	Line Code	Scrambled NRZ
Power	-26 or -8 dBm	Detector Type	PIN-FET
Receiver Sensitivity	-38 dBm at BER < 10^{-10}	Fiber Type	Single mode
50 Km reach			

NOTE: Longer or shorter, 15 to 120Km, on special order.

Optical Fiber Interface Characteristics

Optical Module	Fiber Direction	Wavelength (nm)	Connector	Distance (km)	Power (dB)
Single	Dual uni-direction	1310	SC (Subscriber Connector)	30	20
Single	Dual uni-direction	1310	SC (Subscriber Connector)	50	30
Single	Dual uni-direction	1310	FC (Fiber Connector)	30	20
Single	Dual uni-direction	1550	SC (Subscriber Connector)	20	12
Single	Dual uni-direction	1550	SC (Subscriber Connector)	100	40
Single	Single bi-direction (master)	1310/1550	SC (Subscriber Connector)	30	20
	Single bi-direction (slave)	1310/1550	SC (Subscriber Connector)	30	20

For discussion on whether to choose uni-directonal or bi-directional fiber option, see white paper with that title.

E1 Line Interface

Number of E1 lines	4
Line Impedance	120Ω twisted pair, 75Ω for BNC
Line Rate	2.048 Mbps ±50 ppm
Line Code	HDB3
Output Signal	ITU G.703
Clock	Transparent
Connector	RJ48C, BNC

T1 Line Interface

Number of T1 lines	4
Line Impedance	100Ω twisted pair
Line Rate	1.544 Mbps ±50 ppm
Line Code	B8ZS
Output Signal	ITU G.824
Clock	Transparent
Connector	RJ48C

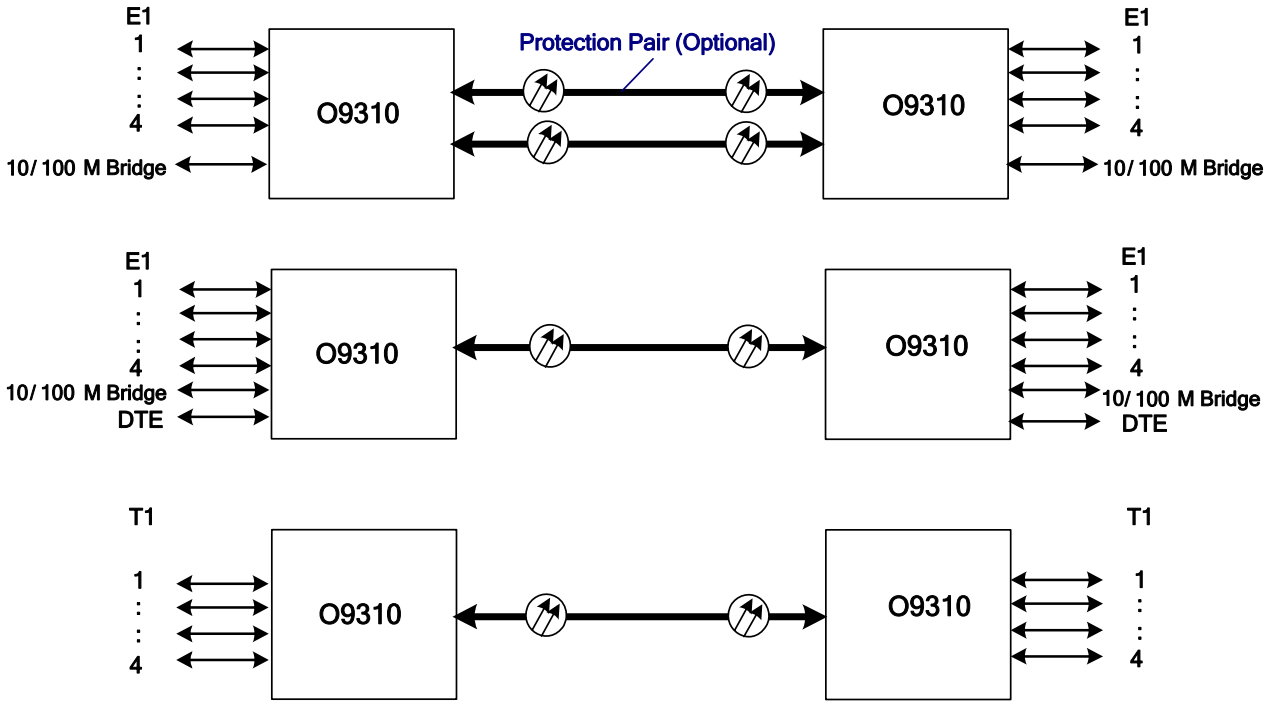
Physical/Electrical

Dimensions	216 x 55 x 285 mm. (W x H x D)
Mounting	Stand-alone
Power Source (AC)	100 to 240 Vac, 50/ 60 Hz
Power Source (DC)	48Vdc : 36-72 Vdc
Power Consumption	≤ 10W
Temperature Range	0°C to 50°C
Humidity	0% - 95% RH (non-condensing)

Diagnostics Test

Optical Fiber	Local and remote loopbacks
T1 Lines	Local and remote loopbacks

Application Illustration



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