



# Loop-IP6440 IP I-MUX

## Description



The Loop-IP6440 IP Inverse Mux provides connectivity from 10/100 BaseT LAN to E1 WAN through multiple E1, up to 4 E1 links. Loop-IP6440 also provides a bridging function from Ethernet to E1 links. This unit can provide customers from 2Mbps to 8Mbps network bandwidth.

## Features

- Support WAN link, which is virtually concatenated  $n \times E1$  ( $n$  can be 1 to 4)
- Support up to 64ms (configurable for 16, 32, and 64ms) of transmission different delay between E1s.
- GFP (Generic Frame Protocol) is used to map the Ethernet packet into the virtually-concatenated E1's.
- Support 10/ 100 BaseT Ethernet
- Support Tx (Transmit)/ Rx (Receiver) auto reverse function
- Support 10M or 100M auto detecting function
- Support timing sources selection from (1) a certain E1 from  $n \times E1$ , (2) External clock, (3) Internal
- Support Alarm Relay
- Support local control and diagnostic via DB9S console port
- Support Ethernet, SNMP, and inband management
- Support management firewall for blocking all malicious management packages.
- Support VLAN packet transparent:
  - Up to 1912 bytes for optional MAC learning is included.
- Multicolor LED indicators.

Loop-IP6440 offers automatic E1 channel failure detection and can re-assign the number of E1 channels for transport of Ethernet traffic. For example, if there are 4 E1s configured for 10/100 Ethernet traffic transport, and one E1 fails during the service, the other 3 pick up the entire load. This minimizes loss of IP packets.

Loop-IP6440 support DB9S console port, which allows users to execute in-service diagnostics and fault isolation from a local or remote terminal. Loop-IP6440 also allows remote site to telnet via Ethernet port. The IP6440 series also provides multicolor LED indicators on the front panel and ACO (Alarm Cut-Off) button.

**CERTIFIED  
ISO-9001**

## Ordering Information

To order specify:

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

Model (non RoHS compliant)	Model (RoHS compliant)	Description	Note
<b>Main Unit</b>			
Loop-IP6440-1UA-4E75- <b>pp1-pp2-Add</b>	Loop-IP6440-1UA-4E75- <b>pp1-pp2-Add-G</b>	1U height ANSI (rear & front access) shelf w/ 4E1 channels BNC connector (75 ohm)	· where <b>pp1</b> , <b>pp2</b> , and <b>Add</b> are defined in below tables
Loop-IP6440-1UA-4E120- <b>pp1-pp2-Add</b>	Loop-IP6440-1UA-4E120- <b>pp1-pp2-Add-G</b>	1U height ANSI (rear & front access) shelf w/ 4E1 channels RJ48C connector (120 ohm)	
Loop-IP6440-1UE-4E75- <b>pp1-Add</b>	Loop-IP6440-1UE-4E75- <b>pp1-Add-G</b>	1U height ETSI (fully front access) shelf w/ 4E1 channels BNC connector (75 ohm)	· where <b>pp1</b> and <b>Add</b> are defined in below tables
Loop-IP6440-1UE- 4E120- <b>pp1-Add</b>	Loop-IP6440-1UE-4E120- <b>pp1-Add-G</b>	1U height ETSI (fully front access) shelf w/ 4E1 channels RJ48C connector (120 ohm)	

### Plug-in Power Modules:

Loop-IP6440-SA	Loop-IP6440-SA- <b>G</b>	Single AC power supply (90~264 Vac)	· For power redundancy, order extra power supply
Loop-IP6440-SD24	Loop-IP6440-SD24- <b>G</b>	Single DC power supply (24Vdc: 18-36 Vdc)	
Loop-IP6440-SD48	Loop-IP6440-SD48- <b>G</b>	Single DC power supply (48Vdc: 40-75 Vdc)	· For AC choose an appropriate power cord

### Accessories

#### User's Manual (All User's Manuals are RoHS compliant)

Loop-IP6440-UM	Loop-IP6440-UM	User's Manual (paper hard copy optional). A CD version of the manual is already included as standard equipment.	
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#### Power Cord (All power cords are RoHS compliant)

Loop-ACC-PC-USA	Loop-ACC-PC-USA	AC power cord for Taiwan/America	
Loop-ACC-PC-EU	Loop-ACC-PC-EU	AC power cord for Europe	
Loop-ACC-PC-UK	Loop-ACC-PC-UK	AC power cord for UK	
Loop-ACC-PC-AUS	Loop-ACC-PC-AUS	AC power cord for Australia	
Loop-ACC-PC-CH	Loop-ACC-PC-CH	AC power cord for China	

■ where **pp1** are used to select power supply for main shelf:

**pp1** =

	non RoHS compliant	RoHS compliant	Description	Note
<b>AC</b>	Available	Available	Fixed AC power (90~264 Vac)	<ul style="list-style-type: none"> <li>Units delivered with the fixed AC option have a built-in power supply module. These units will not accept plug-in power supply modules.</li> <li>For AC choose an appropriate power cord</li> </ul>
<b>SA</b>	Available	Available	Single plug-in AC power supply (90~264 Vac)	
<b>SD24</b>	Available	Available	Single plug-in DC power supply (24Vdc: 18-36 Vdc)	
<b>SD48</b>	Available	Available	Single plug-in DC power supply (48Vdc: 42-72 Vdc)	

■ where **pp1** and **pp2** are used to select power supply for main shelf:

**pp2** =

	non RoHS compliant	RoHS compliant	Description	Note
<b>SA</b>	Available	Available	Single plug-in AC power supply (90~264 Vac)	· For AC choose an appropriate power cord
<b>SD24</b>	Available	Available	Single plug-in DC power supply (24Vdc: 18-36 Vdc)	
<b>SD48</b>	Available	Available	Single plug-in DC power supply (48Vdc: 42-72 Vdc)	

■ where **Add** is used to select other additional options (**Multiple option choices are available**) :

**Note:** LCD and all external clocks are RoHS compliant

**Add** =

	Description	Note
<b>EXT</b>	External Clock	· All external clocks are RoHS compliant.
<b>LCD</b>	LCD front panel ( <b>see Note</b> )	· LCD is supported for ANSI shelf only · LCD is RoHS compliant.

## **Loop-IP6440 IP I-MUX Product Specification**

### Line Interface

Line Rate	2.048 Mbps ± 50 ppm	Connector	BNC (75 ohm), RJ48C (120 ohm)
Data Rate	n x 30 x 64Kbps (n=1 to 4) or n x 29 x 64Kbps (n=1 to 4)	Output signal	ITU G.703
Line Code	AMI/ HDB3	Electric	75 ohm/ 120 ohm twisted pair
Input Signal	ITU G.703	Jitter	ITU G.823

### Clock Source

Primary Clock	Any one of E1 line, external(option), internal
Secondary Clock	Any another of E1 line, external(option), internal

### Diagnostics Test

Loopbacks	Line Loopback, Payload Loopback
Remote Loopbacks	Line Loopback, and Payload Loopback

### Performance Monitor

Performance Store	Last 24 hours performance in 15-minute intervals and last 7 days in 24-hour summary line, user
Performance Reports	Date & Time, Errored Second, Unavailable Second, Bursty Errored Second, Severe Errored Second, Controlled Slip Second, and Loss of Frame Count
Monitor Registers	Line, User
Alarm History	Alarm Type (i.e. Master Clock Loss, RAI, AIS, LOS, BPV, ES, CSS)
Alarm Queue	Maximum 40 alarm records which record the latest alarm type, location, and date & time
Alarm Threshold	BPV, ES, UAS, CSS

### Ethernet

Connector	RJ45
Protocol	Telnet and embedded SNMP
Speed	10 or 100 BaseT, auto-detect
Standard	<a href="#">IEEE 802.3u</a>

### Physical

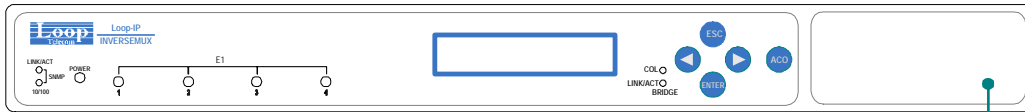
Dimensions	432 x 44 x 255 mm. (WxHxD)
Power Source (AC)	100-240V, 50/60 Hz AC
Power Source (DC)	24Vdc: 18-36 Vdc, dual DC hot swappable 48Vdc: 42-72 Vdc, dual DC hot swappable
Power Consumption	< 30 watts
Temperature	0 -50°C
Humidity	0-95% RH (NON-CONDENSING)
Mounting	Desk-top stackable, wall mount

## Certification Compliance

EMI/EMC  
Safety

EN55022 Class A, EN55024, FCC Part 15 Subpart B Class A  
EN60950-1

### Front Panel

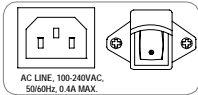


1



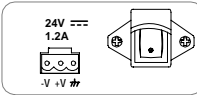
Blank Panel (when fix AC power supply is selected)

2



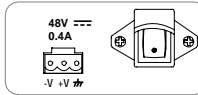
AC plug-in power supply

3



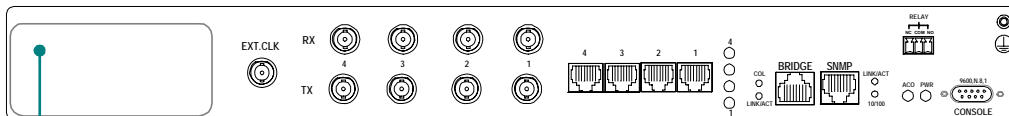
24V DC plug-in power supply

4

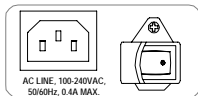


48V DC plug-in power supply

### Rear Panel

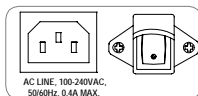


1



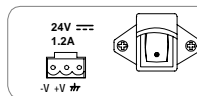
Fix AC power supply

2



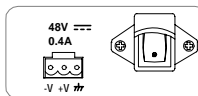
AC plug-in power supply

3



24V DC plug-in power supply

4



48V DC plug-in power supply

## Application Illustration



**LOOP TELECOMMUNICATION INTERNATIONAL, INC.**  
ISO 9001/ISO 14001

### Worldwide

8F, No. 8, Hsin Ann Road,  
Science-Based Industrial Park  
Hsinchu, Taiwan 30078  
Tel:+886-3-578-7696  
Fax:+886-3-564-6272  
www.LoopTelecom.com  
sales@loop.com.tw

### Taipei, Taiwan

6F, No. 36, Alley 38, Lane 358,  
Rueiguang Road,  
Neihu, Taiwan 11492  
Tel:+886-2-2659-0399  
Fax:+886-2-2659-2325  
michael\_tzeng@loop.com.tw

### North America

8 Carrick Road  
Palm Beach Gardens  
Florida 33418, U.S.A.  
Tel:+1-561-627-7947  
Fax:+1-561-627-6615  
jimber561@aol.com



4 rue Edouard Branly - Immeuble Hermès II  
78190 TRAPPES - FRANCE

Tel: +33 134 521 480 - Fax: +33 134 521 489  
[www.pkt-net.com](http://www.pkt-net.com)