



Description

The Loop-IP6702A device allows operators to transport Unframed/Framed 1 E1/FE1 (1 Unframed/Framed T1/FE1) data stream with timing information over PSN (Packet Switched Network) via Pseudowire Protocol – SAToP or CESoPSN . Another IP6702A converts the received packet stream back to original E1/FE1 or T1/FE1 data stream with original timing information. This allows cost-effective migration from existing legacy TDM networks to Packet Switched Network.

* Future Option

Features

Mechanics and Electrics

- ANSI shelf
- Power:
 - Fixed AC
 - Fixed DC
 - Combined AC and DC (AoD)

Ethernet Interface

- Four Ethernet ports for WAN or LAN port assignment
 - One Fast Ethernet with 1 SFP housing
 - Three 10/100 BaseT Ethernet

User Tributary Interface

- TDM Tributary interfaces: up to 1 E1 or 1 T1 Unframed mode/Framed mode
- DTE interface: 1 RS422/V.11

L2 Switching

- Jumbo frame size up to 2048 bytes
- VLAN:
 - Maximum 4K VLAN ID
 - Maximum 16 con-current VLAN Groups

- Support C-VLAN/S-VLAN tag adding and removing on Pseudowire
- Support 802.1q Port-Based VLAN on Ethernet/SNMP Port
- Support 802.1d MAC Learning
- Support 803.3x Flow control on input ports
- Packet Transparency

Pseudowire Capability

- Support SAToP and CESoPSN
- Support E1/T1 traffic emulation over UDP/IP Network
- Maximum 16 Pseudowires
1 E1/T1 can support up to 16 pseudowires
- PDV Compensation Depth: up to 256 ms
- Jitter Buffer Size: up to 256 frames

Pseudowire Diagnostic Function

- Built-in BERT for E1/T1 to Line or WAN direction
- IP – MAC Table Display

Jitter & Wander

- PPM version: conforms to G.823 Traffic Interface (+/- 1ppm)

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Timing Reference

- Internal (4.6 ppm)
- Line (E1/T1)
- Adaptive Clock Recovery: 4 ACR clock servos can recovery clock from any 4 Pseudowires

OAM Capability

- Support 1 SNTP timing reference
- LOS, LOF, LCV*, RAI, AIS, FEBE*, BES, DM*, ES, SES, UAS and LOMF*
- Multi-color LED indicators
- Alarm relay
- ACO (Alarm Cutoff) button

Management Interfaces

- 1 user-selectable Ethernet/SNMP port
- SNMP v1/v3 with 5 SNMP trap IP
- DB-9 Console port with VT-100 menu
- Telnet and SSH v2
- C-VLAN tag on management traffic

Standards Compliance

- SAToP and CESoPSN
- MEF8*

* Future Option

Ordering Information

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

Main Unit		
Model	Description	Notes
Loop-IP6702A-S-PPM-aa-bb-pp- G	IP6702A with G.823 traffic interface, 3 electric Ethernet ETH port, 1 Optical SFP port and 1x E1 or 1x T1 port or DTE 1xRS422/V.11.	<ul style="list-style-type: none"> Where aa, bb and pp are defined below. For other special optical modules, please contact your nearest Loop sales representative.


- Where **aa** is used to select **connector**. This module **must be selected** one from the list below.

aa=	Description	Notes
E75	E1 75 ohm with BNC connector	
E120	E1 120 ohm with RJ48C connector	
T1	T1 with RJ48C connector	

- Where **bb** is used to select **DTE** on manufacturing option daughter board . If these modules are not required, leave these fields blank.

bb=	Description	Notes
77	1xRS422 / V.11 port with DB25 female connector	

- Where **pp** is used to select **power module**. This module **must be selected** one from the list below.

pp=	Description	Notes
AoD	AC: 100 to 240 Vac -48Vdc DC: -42 to -72 Vdc (Both are not powered simultaneously. Support sealing current looped.)	<ul style="list-style-type: none"> For DC, wire to included IEC socket.  No safety certification for DC. For AC, choose an appropriate power cord.
AC	100 to 240 Vac	
DC	-48Vdc (-42 to -72 Vdc)	

Accessories






User's Manual

Loop-IP6702A-UM	User's Manual (paper hard copy-optional). A CD version of the manual is already included as standard equipment.
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Firmware Upgrade

Loop-IP6702A-FWUPGR	Firmware Upgrade. Customers who desire to have a firmware upgrade after their warranty has expired can purchase this option. This will upgrade the firmware to the most current version and provide an additional 12 months of software repair and patches on existing functionality as necessary.
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Power Cord (All power cords are RoHS compliant)

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

Tray

81.TRAY19.1000- G	19" Tray for rack mount (One tray for two base units)
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SFP Optical Modules

Please place your order using the 5-digit alphanumeric codes listed in the separate SFP Optical Module Brochure.

Note: Non-Loop SFP modules are not guaranteed to work with our equipments. It is strongly recommended to buy Loop-logo SFP modules.

Power connector

Loop-ACC-AoDA-G

3 pin IEC socket for AoD power module

**Examples 1:**

Main unit: Loop-IP6702A-S-PPM-E75-AC-G

Description: IP6702A stand-alone unit with G.823 traffic interface, 1x E1 75ohm interface port, 100 to 240 Vac power.

Examples 2:

Main unit: Loop-IP6702A-S-PPM-77-DC-G

Description: IP6702A stand-alone unit with G.823 traffic interface, 1xRS422 / V.11 port with DB25 female connector, -42 to -72 Vdc power.

Specifications

SFP Optical Module

Please refer to SFP optical module brochure for detail.

Ethernet Optical Interface

Number of Ports: Optical port

Optical Port

Speed : 100 BaseFX
(802.3u)

Connector: SFP

Ethernet Electrical Interface

Number of Ports: 3
Speed: 10/100 BaseT (802.3i, 802.3u)
Auto-negotiation (10/100)
Auto MDI/MDIX
Full/Half Duplex

Connector: RJ45

E1 Tributary Interface

Number of Ports:	1	Input Signal:	ITU G.703
Line Rate:	2.048 Mbps \pm 50 ppm	Output Signal:	ITU G.703
Line Code:	AMI/HDB3	Jitter and Wander:	ITU G.823 traffic mode
Framing:	CCITT G.704	Impedance:	75 ohm coax/120 ohm twisted pair
		Connector:	BNC and RJ48C

T1 Tributary Interface

Number of ports:	1	Input Signal:	DS-1 from 0dB to -26 dB w/ALBO
Line Rate:	1.544 Mbps \pm 32 ppm	Output Signal:	DSX-1, DS-1
Line Code:	AMI/B8ZS	Jitter and Wander:	AT&T TR 62411
Framing:	None	Connector:	RJ48C

Timing Source

Primary/Secondary Clock: Internal (4.6 ppm), E1/T1 line , Adaptive Clock Recovery

Alarm Relay

Alarm Relay: Fuse alarm, performance alarm
Connector: 3 pin terminal block
Maximum Current: 1A for 30 Vdc

Network Management

Console Port

Electrical: RS232 interface
Terminal: Menu driven VT-100
Connector: DB9, female and DCE
Support RADIUS checking login

SNMP Port

Protocol: SNMP v1/v3
Connector: RJ45 at rear panel

Performance Monitors (E1/T1)

Performance Store: The last 24 hours performance in 15-minute intervals
Performance Reports: Date &Time, Error Second (ES), Unavailable Second (UAS), Bursty Errored Second (BES), and Severe Error Second (SES)

Alarm Reports (E1/T1)

Alarm History: Date & time, alarm type(i.e. clock loss, LOS, BPV, ES)
Alarm Queue: Contains up to 4000 alarm records of latest alarm types, alarm severity, date and time.

Diagnostics Test (E1/T1)

Loopback: Line loopback and Local loopback

Power

AC (fixed module): 100 to 240 Vac
 DC (fixed module): -42 to -72 Vdc
 AC & DC: 100 to 240 Vac and -42 to -72 Vdc
 Consumption: Maximum 5.0 W

Physical and Environmental

Dimensions 210 x 41.5 x 140 mm
 (W x H x D): (8.27" x 1.63" x 5.51")
 Net Weight: 1.0 Kg (2.2lbs)
 Temperature: 0 -50 °C
 Humidity: 0-95% RH (non-condensing)
 Mounting: Desk-top stackable, wall mountable, rack mount with 19" tray available

Standards Compliance

IEEE

802.1p Priority Code Point
 802.1q VLAN Tagging
 802.3i 10BaseT
 802.3u 100BaseT, 100 BaseFX

ITU

G.703 E1/DS1
 G.706 Frame Alignment and CRC
 G.823/ Traffic and Synchronous Interface
 G.824* (Traffic only)
 G.826 End to End Error Performance
 PWE3 Pseudo Wire Emulation Edge-to-Edge

IETF

RFC 3411 SNMPv1, v2c*, v3*
 RFC4553 SAToP

MEF

8* CESoETH

RoHS

Restriction of Hazardous Substances Directive

Certifications

EMC: EN55022 Class A, EN50024, EN300 386, FCC Part 15 Subpart B Class A
 Safety: IEC60950-1(CB), EN60950-1(CE)

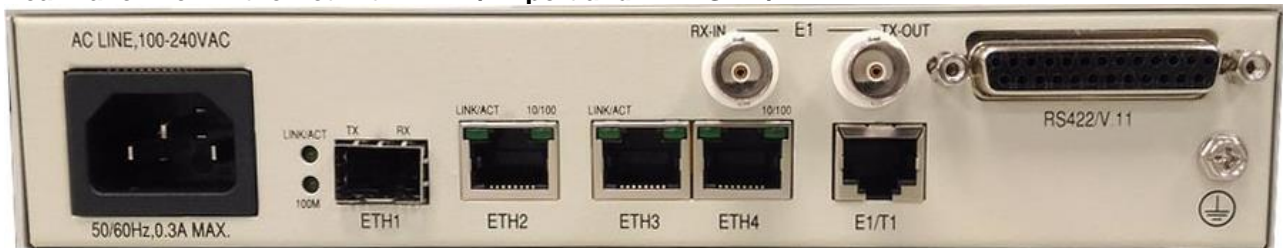
*Future option

Panel Views

Front Panel View

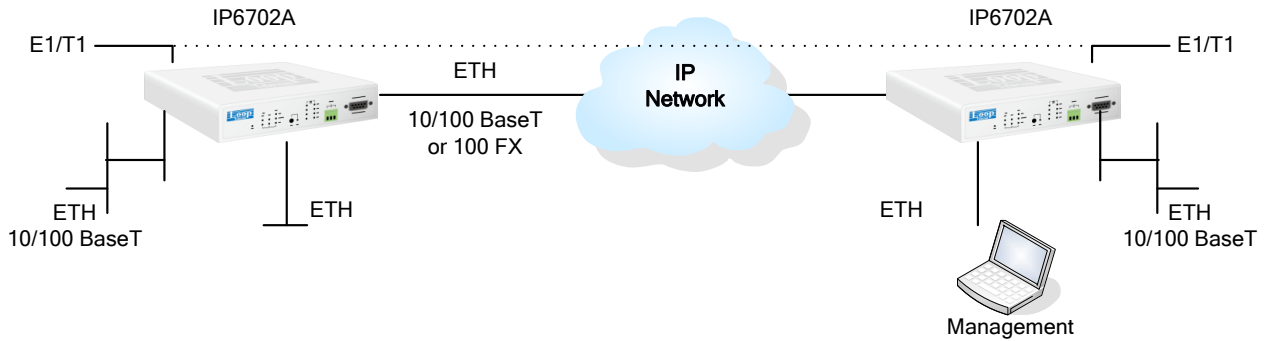


Rear Panel View: Ethernet with 1 x E1/T1 port and 1 X RS422/V.11

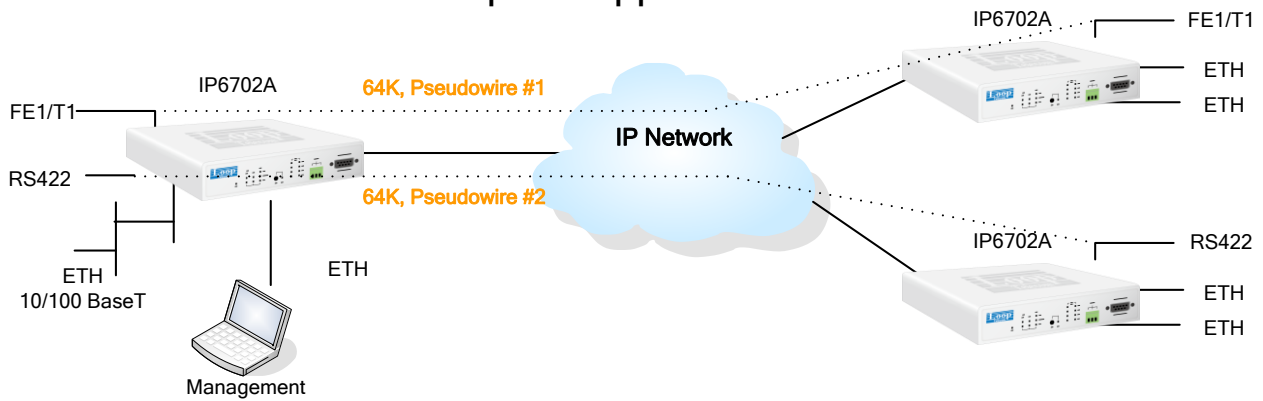


Application Illustrations

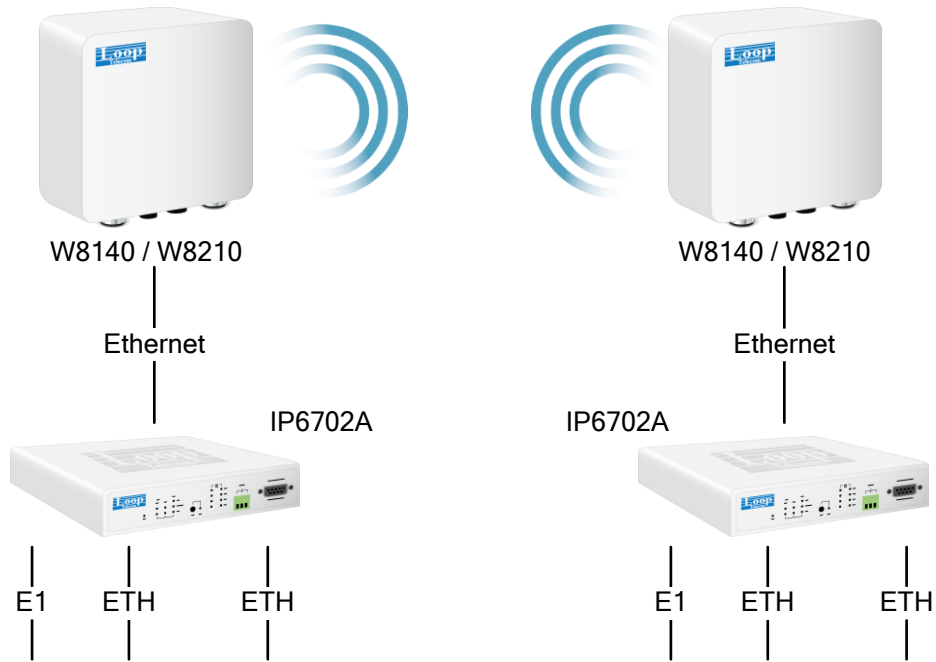
Point to Point Application



Fractional E1 Point to Multipoint Application



E1/LAN Ethernet Radio Application



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 Version 5 4 July 2017

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