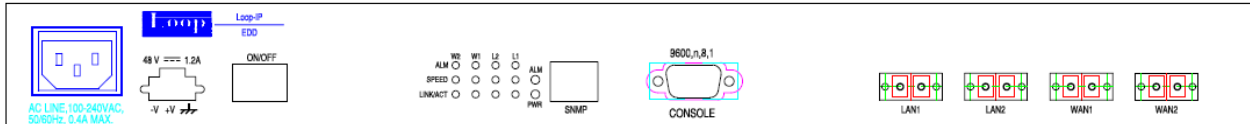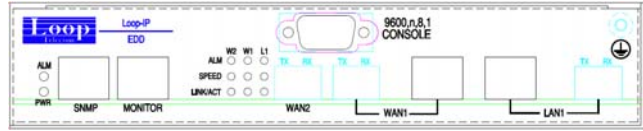# Loop-IP7930-S/F
Ethernet Demarcation Device

Preliminary

Description

The Loop-IP7930 is an Ethernet Demarcation Device at the Customer Premises to enforce the Ethernet traffic policing policies, such as rate limiting, QoS, and VLAN tagging functions.

Loop-IP7930 EDD could assure the service provider having a clean and well-organized traffic from customer into the network. With optional 100/1000M-SX/LX optical uplink interface, the IP7930 EDD can be located far away from the central access device.

Supported Link OAM per IEEE 802.3ah and End-2-end OAM per ITU Y.1731 /IEEE802.1ag, the IP7930 EDD is capable of supporting Carrier grade Ethernet Service.

Features

Mechanical, Electrical, Environmental
- ANSI/ETSI unit complies with 2 physical sizes
- Power: AC and DC module coexistent
- Temperature Sensor and overheat alarm
- RoHS Compliant

Interface Ports
- IP7930-S
  - Multiple user ports configurable by user
    - 2 WAN ports with 1 Combo (RJ45+SFP) and 1 SFP (mini-GBIC) GbE optical housing
    - 1 LAN Combo port (10/100/1000TX) with RJ45 connector
    - Electrical Ethernet bypass during power outage
  - 1 SNMP port
  - 1 Monitor port
- IP7930-F
  - 2 WAN ports with SFP (mini-GBIC) GbE optical housing
  - 2 LAN ports with SFP (mini-GBIC) GbE optical housing
  - Optical by-pass function during power outage
  - 1 SNMP port
  - 1 Monitor port

Protection
- **WAN Port**
  - 802.3ad Link Aggregation
  - ITU G8031 1:1 or 1+1 Linear protection

Ethernet Functionality
- IEEE 802.1q VLAN Tagging, 802.1p QoS
- Supports 256 configurable VLAN tags

CoS/QoS
- 8 Priority queues
- Strictly Priority or Weighted Round-Robin (WRR)
- 802.1P CoS bits, IPV4 ToS (DiffServ) bits

OAM Protocols
- IEEE 802.3ah OAM, Ethernet in First Mile (EFM)
  - Supports Active & Passive modes
  - EFM Dying Gasp Alarm
  - EFM diagnosis (OOS Link Diagnosis)
  - EFM In-service performance monitoring
    - RFC1757 RMON (Remote Network Monitoring MIB)
    - Per port or per VLAN (up to 128 VLANs)
    - 64-bit counter used for performance parameter
- IEEE 802.1ag OAM, (CFM)
  - CCM -- Connectivity (heartbeat) Check
  - Link Trace (Trace Route)
  - CFM Ping
  - Supports 128(3ms)/512(1s) MEPs
- Y.1731 OAM (CFM+)
  - Fault management
  - LM (Loss Measurement)
    - Y.1731 LM of user data
    - Synthetic LM using CCM statistics
  - Performance Monitoring
  - DM (Delay Measurement)
    - Round-trip Delay Measurement
    - One-way Delay Measurement

- TM (Throughput Measurement)
    – OOS Throughput Measurement
    – IS (In-Service) Throughput Measurement
- Diagnosis Management
    – BERT
        - Built-in Ethernet BERT Generation/Detection
        - OOS (Out-of-Service) Ethernet E2E Diagnosis
    – Loopback
        - Auto-Loopback for ETH-TEST
        - Supports definable Loopback Mac
        - Supports ACL (Access Control List) Loopback

Other Features
– DHCP Client
– ACL (Access Control List) Loopback
– Jumbo frame: Up to 9600 bytes
– Synchronization
    ▪ IETF NTP v3
    ▪ PTP IEEE 1588v2
Synchronous Ethernet

Management
– CLI through SSH v2, Telnet
– SNMP v1/v2/v3
– Web-based management via Loop-iNET*
– Download firmware upgrades, remote configuration upload/download via TFTP

Ordering Information

RoHS compliant units are identified by the letter **G** appearing at the end of ordering code.
SFP optical modules are **NOT** included. See separate SFP Optical Module brochure.

Main Unit

Model	Description	Notes
Loop-IP7930-S-AD-**G**	Multiple User ports configurable by user: · 2 GbE WAN ports with 1 Combo (1SFP housing + 1 RJ45) and 1 SFP (mini-GBIC) optical housing · 1 GbE LAN port with RJ45 connector Build-in AC and DC coexistent power	· For AC, choose an appropriate power cord.
Loop-IP7930-F-AD-**G**	2 GbE WAN ports and 2 GbE LAN ports with SFP (mini-GBIC) optical housing Build-in AC and DC coexistent power	

Accessories

User's Manual	
Loop-IP7930-S-UM	User's Manual (optional paper copy). A CD version of the manual is included with every order.
Loop-IP7930-F-UM	User's Manual (optional paper copy). A CD version of the manual is included with every order.

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	

Firmware Upgrade	
Loop-IP7930-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.

Ear Mounts	
19"/23" ear mounts	A pair of 19"/23" ear mounts is supplied as part of standard package. **Note:** For other sizes, please contact your nearest Loop sales representative.

Tray	
81.TRAY19.000-**G**	19" Tray (One tray for two base units)

SFP Optical Modules
SFP (small form-factor pluggable) optical modules are **NOT** included. To order please check the SFP optical module brochure or contact your nearest Loop sales representative.

Product Specification

WAN Interface (Network side Interface)

Number of Ports	IP7930-S:
	– 2 GbE WAN ports with 1 Combo (1SFP housing + 1 RJ45) and 1 SFP (mini-GBIC) optical housing
	IP7930-F:
	– 2 GbE WAN ports with SFP (mini-GBIC) GbE optical housing
Ethernet functions	IEEE 802.3, 802.3u, 802.3ah, 802.1ag, Y.1731
	SFP Speed: 100/1000 Mbps
	Rate limiting
QoS Functions	8 priority queues
Connector	SFP housing (mini-GBIC)/RJ45

LAN Interface (Tributary Interface)

Number of Ports	IP7930-S:
	– 1 LAN port (10/100/1000BaseT) with RJ45 connector
	IP7930-F:
	– 2 GbE LAN ports with SFP (mini-GBIC) GbE optical housing
SFP Ethernet Functions	IEEE 802.3, 802.3u, 802.3ah, 802.1ag, Y.1731
	802.1q VLAN Tagging
	Speed: 1000 Mbps
	Bidirectional rate limiting
RJ45 Ethernet Functions	10/100/1000BaseT
	IEEE 802.3, 802.3u, 802.3ab, 802.3ah, 802.1ag, Y.1731
	Auto-negotiation (10/100/1000M)
	Auto MDI/MDIX ;Auto-crossover function
	Force mode: duplex (full or half), speed (10/100/1000M)
	Rate limiting
QoS Functions	8 priority queues
Connector	RJ45 or SFP

Protocols

IEEE	802.1q VLAN Tagging, 802.1p QoS, 802.3ad Link Aggregation, 802.1ad VLAN Q-in-Q

Management

LEDs	Multi-color LEDs
Console port	Electrical: RS232
	Connector: DB9
Remote Login	SSH v2, Telnet
SNMP	v1, v2, v3
	Connecgtor: RJ45
CLI	Available over SSH v2/Telnet/RS232
Web-based Management	Available over HTTPS
GUI EMS	LoopView GUI EMS, Loop iNET: Intelligent Management System

Power

Power	Build-in AC and DC coexistent.
	DC48V: 36 to 72 Vdc
	AC: 100 to 240 Vac
Power Consumption	S: Less than 20 Watts in normal use
	F: Less than 25 Watts in normal use

Physical and Environmental

Dimensions	IP7930-S: 41.5 x 210 x 240mm (HxWxD)
	IP7930-F: 44 x 483 x 226mm (HxWxD)
Temperature range	-10 to 50°C
Humidity	0 to 95% RH (non-condensing)
Storage temperature	-25°C to 70°C
Mounting	Wall mount and 19/23 inch Rack mount

Standards Compliance

IEEE	802.3, 802.3u, 802.3x, 802.1d, 802.1p, 802.1q, 802.3ad, 802.3ah, 1588v2*
IETF	RFC1213, RFC1215, RFC1286, RFC1442, RFC1451, RFC1493, RFC1573. RFC1643, RFC1757, RFC2021, RFC2233, RFC2674, RFC2933, RFC768, RFC783, RFC791, RFC792, RFC793, RC826, RFC854, RFC879, 894, RFC896, RFDC896, RFC919, RFC920, RFC922, RFC950, RFC951, RFC1027, RFC1042, RFC1071, RFC1112, RFC1123, RFC1155, RFC1157, RFC1212, RFC1215, RFC1350, RFC1533, RFC1624, RFC2131, RFC2236
ITU	Y.1731, G8031, Y1563
MEF	MEF9, MEF14

Certification

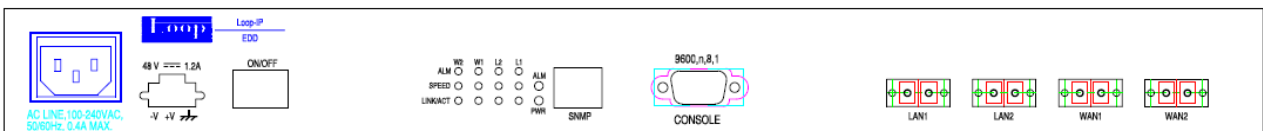|	
EMI/EMC	FCC15 subpart B class A, EN55022 class A, EN55024
Safety	EN60950-1

*Future option

Panel Views

IP7930-S Front Panel View
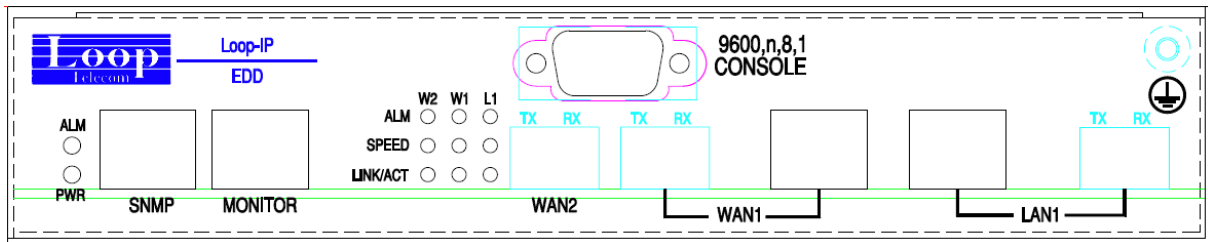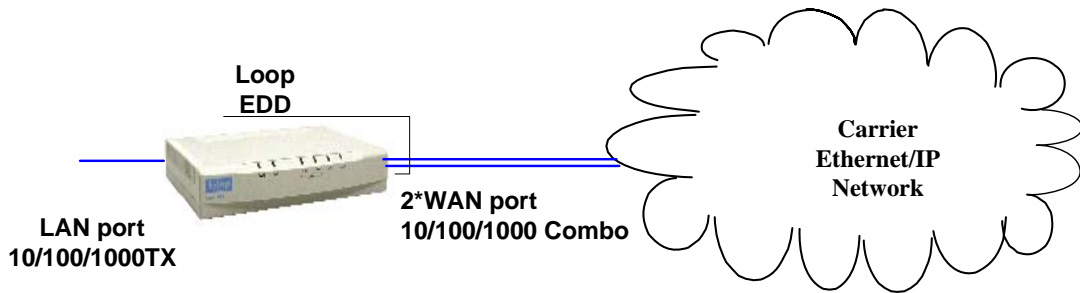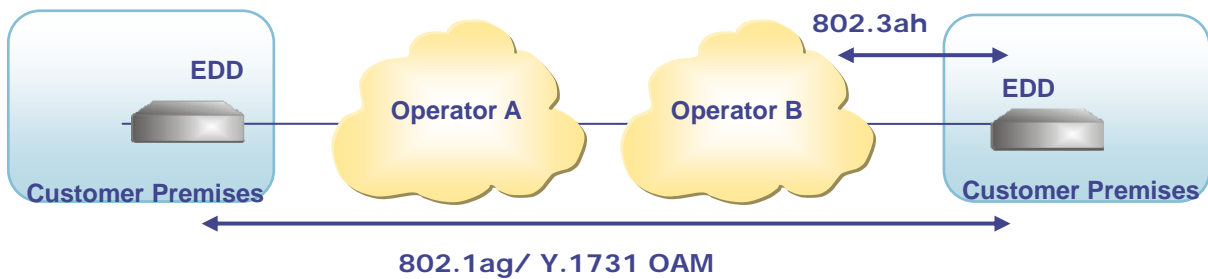

IP7930-S Rear Panel View

IP7930-F Panel View

Application Illustrations

The Application for IP-7930

Loop
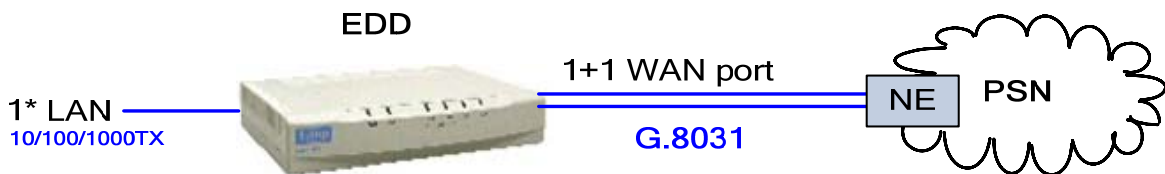EDD

Carrier
Ethernet/IP
Network

2*WAN port
10/100/1000 Combo

LAN port
10/100/1000TX

EDD to support carrier-grade Ethernet services

EDD

802.3ah

EDD

Customer Premises

Operator A

Operator B

Customer Premises

802.1ag/ Y.1731 OAM

802.3ad Link Aggregation Redundancy

EDD

2*WAN port

NE   PSN

1* LAN
10/100/1000TX

802.3ad
Link Aggregation Mode

ITU G.8031 1+1 Redundancy

EDD

1+1 WAN port

NE   PSN

1* LAN
10/100/1000TX
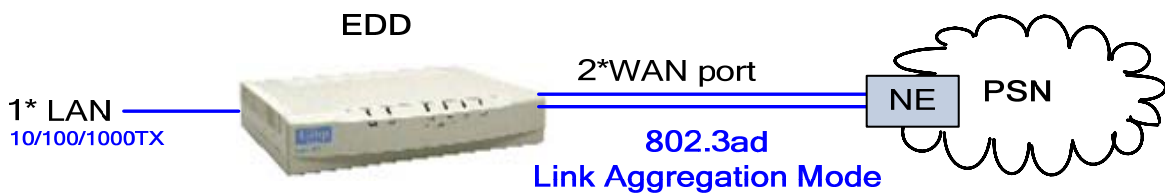
G.8031

Dual-homing Redundancy using G.8031

EDD

1* LAN
10/100/1000TX

2*WAN port
Dual Homing mode

NE1

NE2

PSN
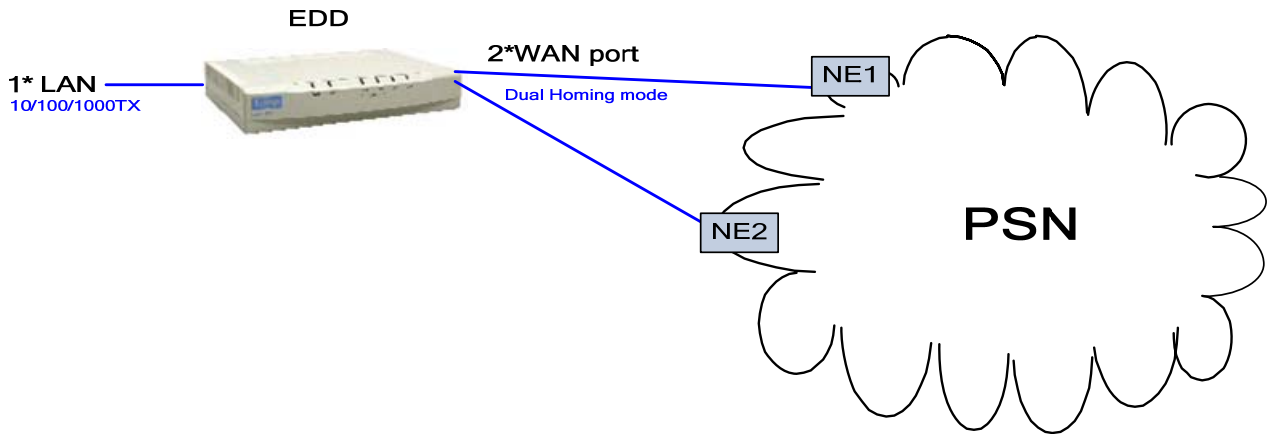
The differentiation between Media Converter and EDD

EDD

Media Converter

- **Media Conversion**
- **Single User Port**
- **Basic Diagnosis**
- **Management**

- **Multiple User Ports**
- **Traffic Classification with Priority Q**
- **Per Service Rate Limiting**
- **VLAN stacking**
- **End-to-end OAM**
- **Uplink Redundancy**
- **Total statistics and threshold crossing Alert**
- **Total Diagnosis**
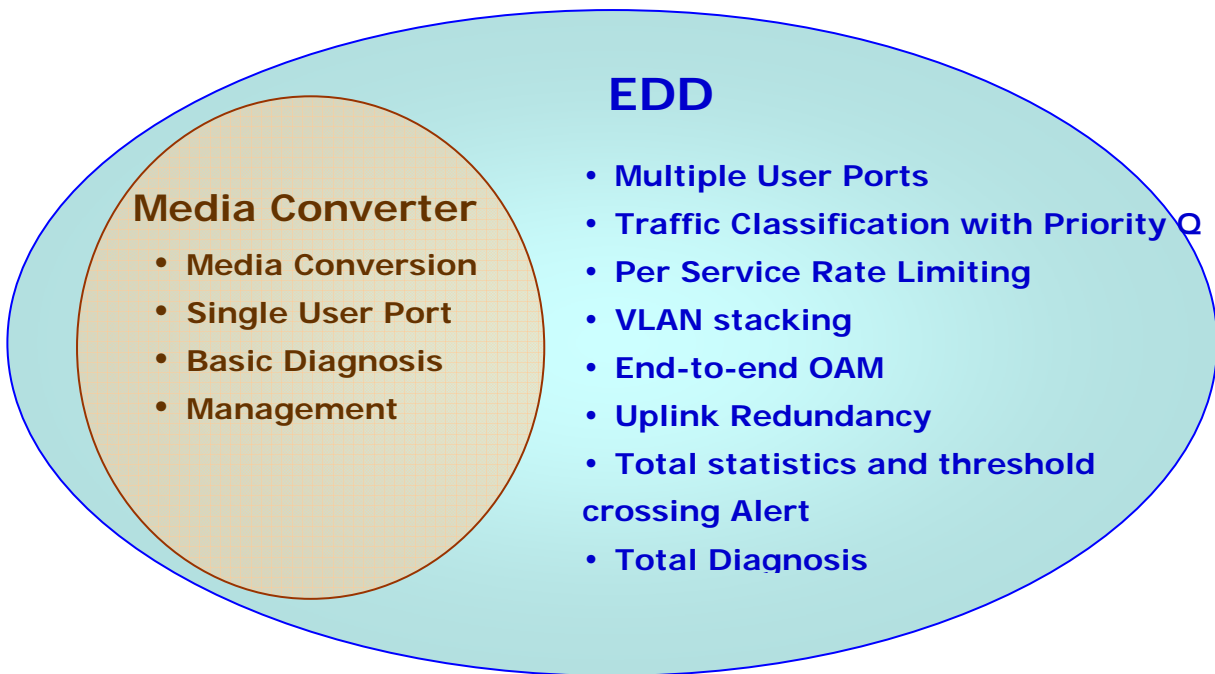
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ISO 9001 / ISO 14001