

Loop-IP6800™ Self-Healing Ring Network Termination Unit



Description

The Loop-IP6800 is a self-healing ring network termination unit (NTU) with a built-in L2 switch. It can be desk-top, wall or DIN Rail mounted. Ring protection or point-to-point protection is facilitated in 100 Base-FX.

All end equipments can be either in packet format via Ethernet ports or serial data via RS232/485 interfaces which will be converted into packet format within Loop-IP6800. The Loop-IP6800 has two WAN optical interfaces, two RS232/485 DTE interfaces, three Ethernet LAN interfaces, two sets of dry contact IN/OUT interfaces, and one alarm relay connector. The Loop-IP6800 has a hardening option which will support -20°C to 70°C *.

The Loop-IP6800 supports auto-discovery to discover all units on the ring, and also support remote-configure for the ease of installations.*

The Loop-IP6800 supports single AC, single DC or dual DC to field requirement.

The Loop-IP6800 facilitates automation systems, SCADA systems, surveillance systems, traffic control systems, transportation systems and IP networking with robust protection in ring, point-to-point, or Omni-bus-like topology. Easy installation and configuration also make maintenance or further expansion more efficient and cost-effective.

Features

- Full front access (ETSI) unit
- Desk-top, wall or DIN Rail mounting
- Compact intelligent FX packet optical ring with layer-2 switch capability
- WAN port
- Dual optical Fast Ethernet interfaces
- Tributary ports
 - 3 ports 10/100 BaseT Ethernet (with PoE option)*
 - 2 ports RS232/485 Interfaces, user selectable via 2-port DIP switch
 - 2 Dry-Contact for input and 2 Dry Contact for output
- Power modules
 - Single fixed AC power supply
 - On-board fixed single/dual DC modules with dual feed
- Auto-discovery/topology, auto-diagnostic and remote-configure for easy plug-and-install (up to 64 units)*
- Up to 1024 MAC address
- High speed, full range asynchronous RS232/RS485 for point-to-point, point to multi-point, or Omni-bus-like applications
- Master/Slave units setting by using DIP switch*
- Auto-negotiating or forced for Speed
- Full/Half Duplex for tributary Ethernet ports*
- IEEE 802.3x flow control
- IEEE 802.1w RSTP
- Alarm Relay and ACO (Alarm Cutoff) button
- Alarm types: alarm cutoff, power failure, link up and link down on Ethernet, DTE and dry contact interfaces
- Remote firmware download via TFTP
- Remote configuration upload & download via TFTP
- Management port and interface
 - In-band management
 - RS232 console via DB9 connector
 - SNMP v1*, v2*
 - Telnet
 - LoopView GUI EMS*
- RoHS Compliance Product

*Future Option

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-IP6800-CS-wan1-wan2-pp1-pp2-add1- G	Self-healing NTU Device with optical modules for temperature range 0 to 50°C	Where wan1, wan2, pp1, pp2, add1 are defined in the tables below
Loop-IP6800-IS-wan1-wan2-p1-pp2-add1- G	Self-healing NTU Device with optical modules temperature hardening optional range -20°C to 70°C	Future Option
Loop-IP6800-CS-SFPC-SFPC-pp1-pp2-add1- G	Self-healing NTU Device with SFP(mini-GBIC) optical housing daughter card but without SFP optical module. Temperature range 0 to 50°C	
Loop-IP6800-IS-SFPC-SFPC-pp1-pp2-add1- G	Self-healing NTU Device with SFP(mini-GBIC) optical housing daughter card but without SFP optical module. Temperature hardening optional range -20°C to 70°C	

Accessories

Power Cord		
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	

User's Manual

Loop-IP6800-S-UM	User's Manual (optional, paper copy). A CD version of the manual is already included as standard equipment.
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■ Where **wan1** and **wan2** are used to select optical module types:

Note: If only one is needed, skip **wan2** in the ordering code.

wan1, wan2 =	Description	Note
NHB3S	Single mode 1*9, 155M, 1310 nm commercial (0 to +70°C), 30 km, SC duplex optical connector	• Use 2 fibers
NHB5S	Single mode 1*9, 155M, 1310 nm commercial (0 to +70°C), 50 km, SC duplex optical connector	
NHB3F	Single mode 1*9, 155M, 1310 nm commercial (0 to +70°C), 30 km, FC duplex optical connector	
NHC2S	Single mode 1*9, 155M, 1550 nm commercial (0 to +70°C), 15 to 20 km, SC duplex optical connector	
NHCUS	Single mode 1*9, 155M, 1550 nm commercial (0 to +70°C), 100 km, SC duplex optical connector	
WHD2S	WDM mode 1*9 (Bi-direction), 155M, Tx 1310 nm / Rx 1550 nm commercial (0 to +70°C), 15 to 20 km, SC simplex optical connector	• 1310 nm from master to slave • Order WHD2S to use with WHE2S • Use 1 fiber
WHE2S	WDM mode 1*9 (Bi-direction), 155M, Tx 1550 nm / Rx 1310 nm commercial (0 to +70°C), 15 to 20 km, SC simplex optical connector	• 1550 nm from slave to master • Order WHD2S to use with WHE2S • Use 1 fiber

Note: For other special optical modules, please contact Loop sales representative near you.

■ SFP Optical Module Plug-in Tables for Fast Ethernet *(Future Option)

Fast Ethernet	MHBTW	Multi mode (mini GBIC) SFP, 1310nm commercial (0 to +70°C), 2Km, LC optical connector	Use 2 fibers for all SFP optical modules
	PHB3W	Single mode (mini GBIC) SFP, 1310nm commercial (0 to +70°C), 30Km, LC optical connector	
	PHB5W	Single mode (mini GBIC) SFP, 1310nm commercial (0 to +70°C), 50Km, LC optical connector	
	PHCUW	Single mode (mini GBIC) SFP, 1550nm commercial (0 to +70°C), 1550nm, 100Km, LC optical connector	
	PHCXW	Single mode (mini GBIC) SFP, 1550nm commercial (0 to +70°C), 120Km, LC optical connector	
	PHB3D	Single mode (mini GBIC) SFP, 1310nm commercial (0 to +70°C), 30Km, LC optical connector with digital diagnostic monitoring	
	PHB5D	Single mode (mini GBIC) SFP, 1310nm commercial (0 to +70°C), 1310nm, 50Km, LC optical connector with digital diagnostic monitoring	
	PHCUD	Single mode (mini GBIC) SFP, 1550nm commercial (0 to +70°C), 100Km, LC optical connector with digital diagnostic monitoring	
	PHCXD	Single mode (mini GBIC) SFP, 1550nm commercial (0 to +70°C), 120Km, LC optical connector with digital diagnostic monitoring	

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

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

pp1 =	Description	Note
AC	Single AC power supply (100 to 240 Vac, 50/60 Hz)	<ul style="list-style-type: none"> • Please choose appropriate power cord for AC version. • It would not support power redundancy.
DC24	Single DC power supply (-24 Vdc: -12 to -36 Vdc)	For redundancy purposes, ordering a second power module will provide dual DC power.
DC48	Single DC power supply (-48 Vdc: -36 to -72 Vdc)	

■ Where **pp2** is used to select 2nd DC power supply for **pp1**:

pp2 =	Description	Note
DC24	Single DC power supply (-24 Vdc: -12 to -36 Vdc)	It is applicable to DC24 in pp1 only.
DC48	Single DC power supply (-48 Vdc: -36 to -72 Vdc)	It is applicable to DC48 in pp1 only.

NOTE: Your selection for pp2 must be the same with pp1.

■ Where **add1** is used to select enclosure types (must select one):

add1 =	Description	Note
IP30	IP30 enclosure for indoor used	
IP65	IP65 hardening enclosure for outdoor used	Future Option

Loop-IP6800™ RTU Ethernet Ring -Standalone Product Specification

Aggregate Lines - Daughter Card SFP Optical Module Characteristics

SFP Optical Module	Direction	Wavelength (nm)	Connector	Distance
MHBTW	Dual uni-directional fiber	1310nm	LC	2 Km
PHB3W	Dual uni-directional fiber	1310nm	LC	30 Km
PHB5W	Dual uni-directional fiber	1310nm	LC	50 Km
PHCUW	Dual uni-directional fiber	1550nm	LC	100 Km
PHCXW	Dual uni-directional fiber	1550nm	LC	120 Km
PHB3D	Dual uni-directional fiber	1310nm	LC (with DDM)	30 Km
PHB5D	Dual uni-directional fiber	1310nm	LC (with DDM)	50 Km
PHCUD	Dual uni-directional fiber	1550nm	LC (with DDM)	100 Km
PHCXD	Dual uni-directional fiber	1550nm	LC (with DDM)	120 Km

WAN-Network Side Interface

Number of Ports Up to 2

Optical Ethernet Interface Characteristics

Optical Module	Fiber Direction	Wavelength (nm)	Connector	Distance (km)	Power (dB)
NHB3S	Dual uni-directional	1310	SC (Subscriber Connector)	30	20
NHB5S	Dual uni-directional	1310	SC (Subscriber Connector)	50	30
NHB3F	Dual uni-directional	1310	FC (Fiber Connector)	30	20
NHC2S	Dual uni-directional	1550	SC (Subscriber Connector)	20	12
NHCUS	Dual uni-directional	1550	SC (Subscriber Connector)	100	40
WHD2S	Single bi-directional (master)	1310/1550	SC (Subscriber Connector)	30	20
WHE2S	Single bi-directional (slave)	1550/1310	SC (Subscriber Connector)	30	20

NOTE: For other special optical modules, please contact Loop sales representative near you

Customer Side Interface

Tributary-RS232 Interface

Number of Ports Up to 2
 Electrical RS232, DCE
 Baud Rate 2400, 4800, 9600, 19200, 38400,
 57600, 115200 bps, asynchronous
 Connector DB9, female

Note: Interface changed by DIP switch from RS485

Tributary-RS485 Interface

Number of Ports Up to 2
 Electrical RS485, DCE
 Baud Rate 2400, 4800, 9600, 19200, 38400,
 57600, 115200 bps, asynchronous
 Connector DB9, female

Note: Interface changed by DIP switch from RS232

Tributary-Ethernet Interface

Number of ports 3
 Ethernet functions 10/100BaseT, IEEE802.3u
 Auto-negotiation (10/100M)
 Auto MDI/MDIX
 Full or half duplex
 IEEE802.1d self learning, up to 1024 MAC addresses
 Connector RJ45

Tributary-Dry Contact I/O Interface

Connector DB9, Female

2-channel Inputs

Internal Resistance 1 K ohm
 Activation Current 3.3 mA
 Deactivation Current 1.5 mA
 Allowable Current 4 mA

2-channel Outputs

Initial Insulation Resistance Min. 100M ohm (at 500 Vdc)
 Allowable Short-circuit Rating Current 5 mA (at maximum)

Protocol

IEEE802.1w RSTP

Alarm Control

Alarm relay	NO, COM, NC
Connector	Terminal block
Alarm cut off	ACO button

Management

LEDs	Multi-color LEDs
Console port	Protocol: Menu driven VT-100 Electrical: RS232, DCE Connector: DB9S, female

Telnet	
SNMP v1, v2	Future option
LoopView GUI EMS	Future option

Performance Monitor

Alarm Queue	Contains up to 500 alarm records which record the latest alarm type, alarm severity, and date & time
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Power

Power	AC: Full range supports 100 to 240 Vac, 50/ 60Hz DC24: -12 to -36 Vdc DC48: -36 to -72 Vdc Both DC24 and DC48 are on-board fixed single/dual DC modules with dual feed
Power consumption	6 Watts maximum
Protection	Over current protection fuse

Physical and Environmental

Dimensions	215 x 41.5 x 156 mm (WxHxD), 1U height
Temperature range	0 to 50 °C and optional -20 to 70 °C
Humidity	0 to 95% RH (non-condensing)
Mounting	Desk-top, wall mount, DIN rail
Enclosure Type	IP30 enclosure IP65 enclosure*

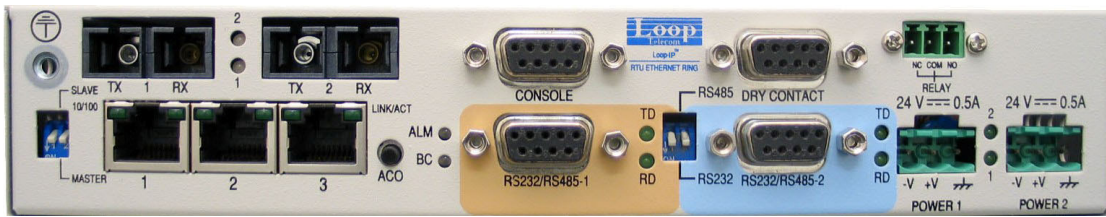
Standard Compliance

IEEE	802.3, 802.3u, 802.3x 802.1x, 802.1w, 802.1p*, 802.1q*
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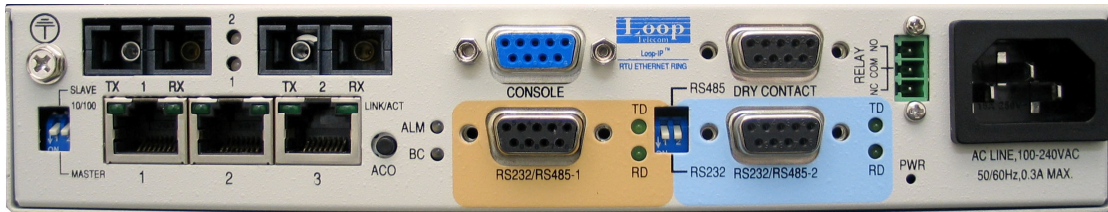
Certification

EMI/EMC	FCC15 subpart B class A, EN55022 class A, EN55024
Safety	IEC60950-1, EN60950-1

Front Panel View:

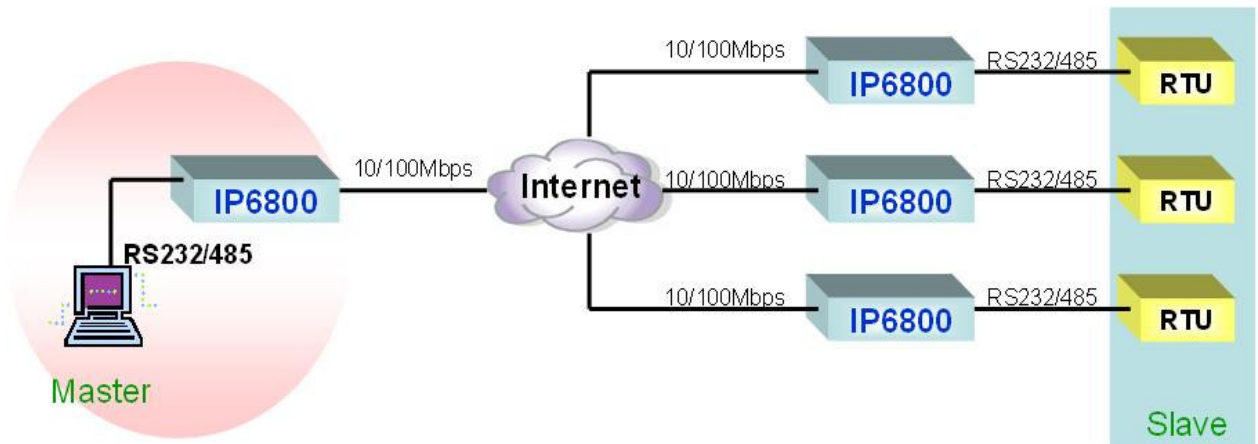


IP6800 with DC power

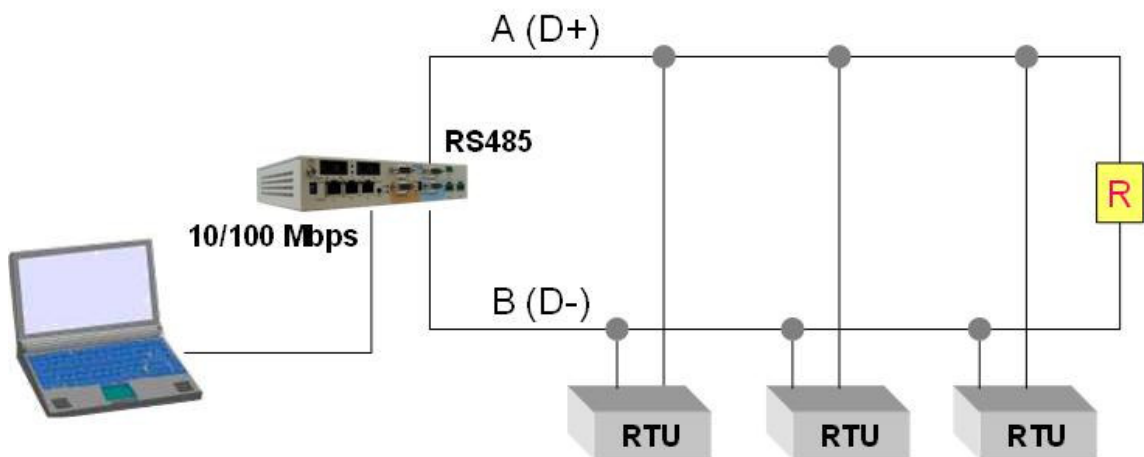


IP6800 with AC power

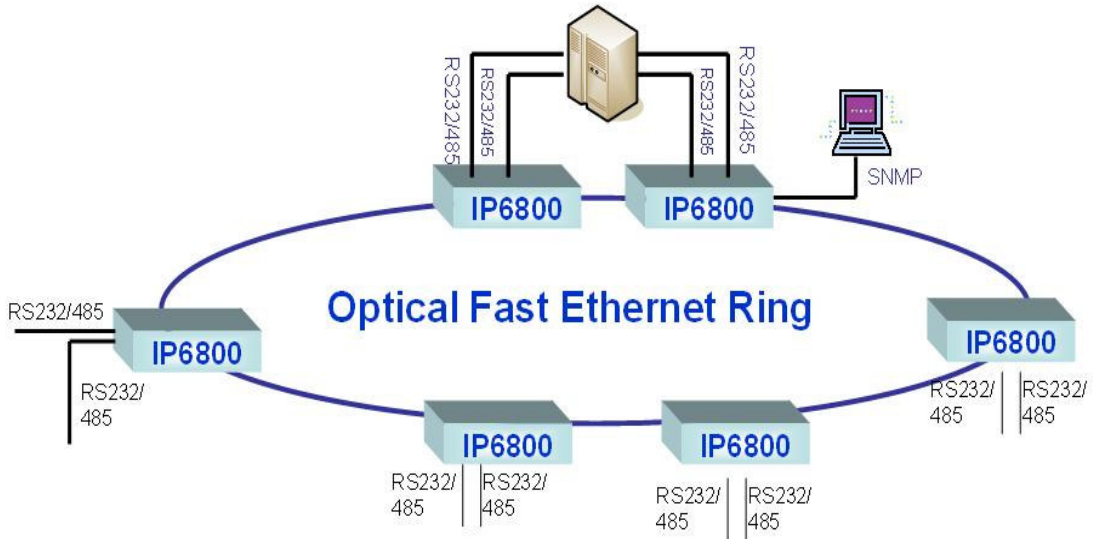
Application Illustrations:



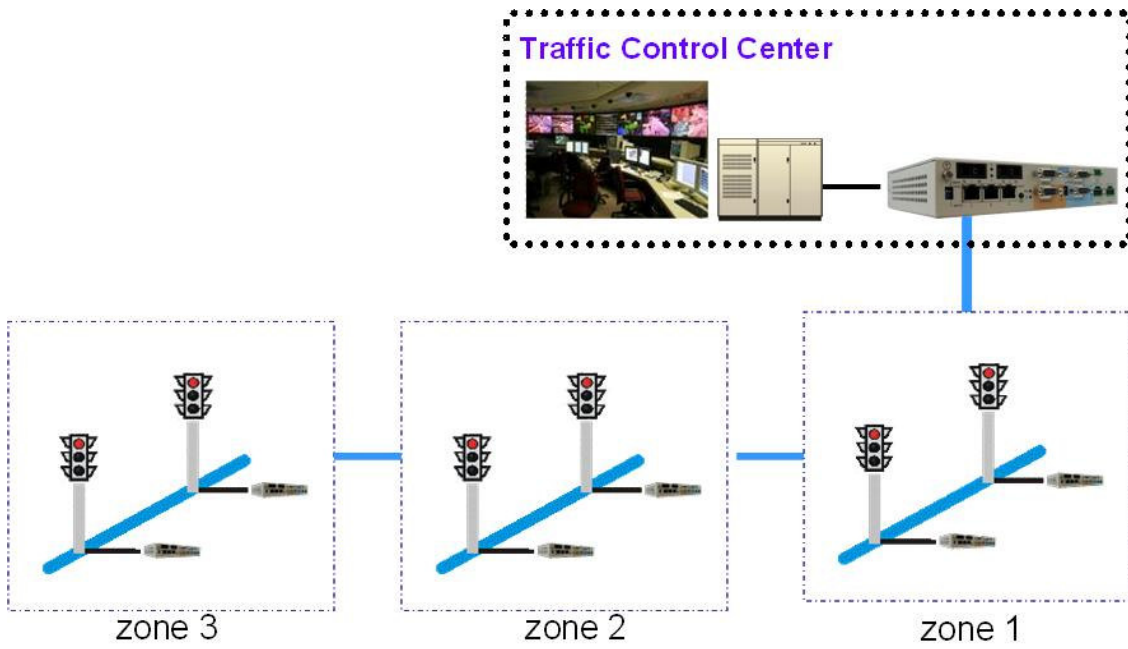
Point to Multipoint Application



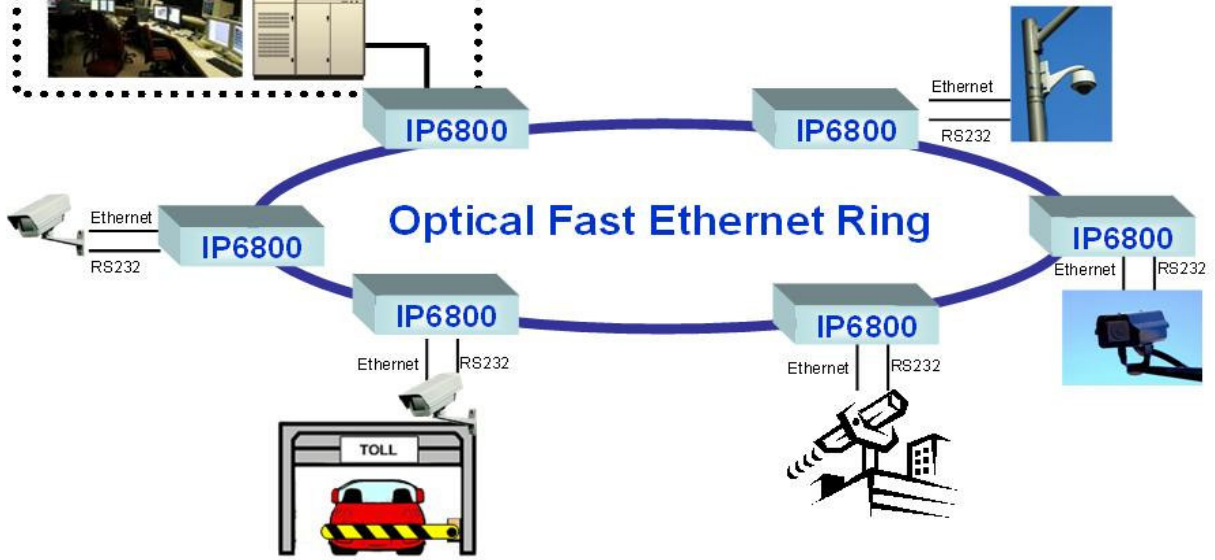
Half Duplex RS-485 Bus Mode



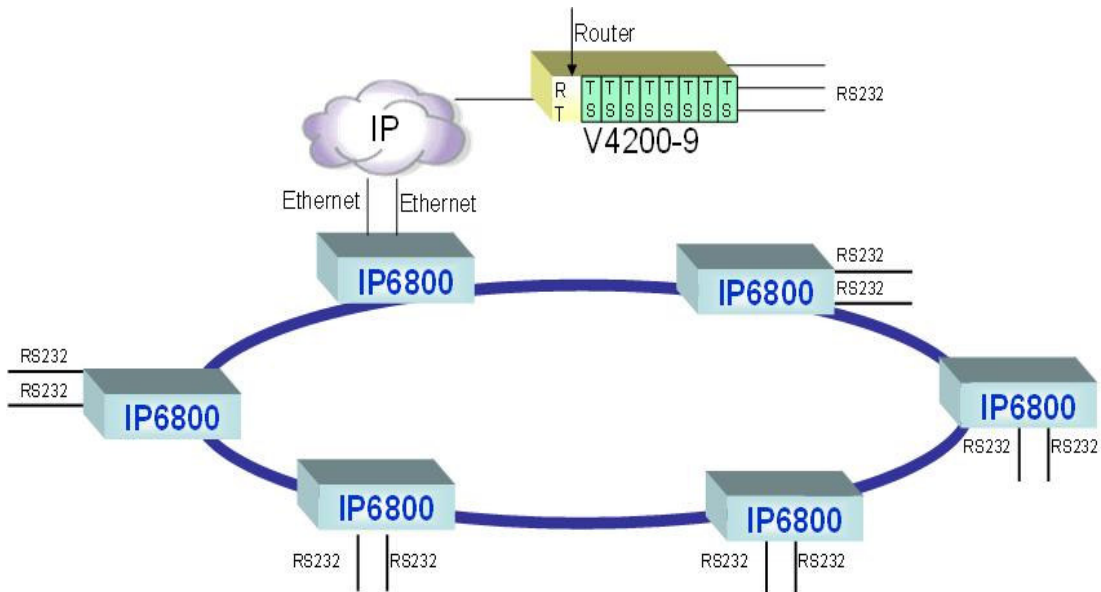
Local SCADA Applications



Traffic Light Management Applications



Video Surveillance Applications



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