Industrial 4-port Coax + 2-port 10/100/1000T + 2-port 100/1000X SFP Long Reach PoE over Coaxial Managed Switch

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PLANET Long Reach PoE Solution enables all enterprises and network service providers to set up an IP infrastructure in a remote location where 802.3af/at PoE compliant powered devices can receive both data and power via PLANET switches, and PLANET LRP extenders and injectors over a long distance but not limited to the normal 100 meters.

Intelligent Long Reach PoE Switch on Coaxial-based Network

PLANET LRP-422CST, a brand-new Multi-channel Long Reach PoE Switch, features an extended Ethernet and PoE networking of up to 1 kilometer over the existing coaxial cables going to multiple PoE compliant devices. It provides IPv6/IPv4 dual stack management and built-in L2/L4 Gigabit Switching engine along with 4 BNC ports with Long Reach PoE Injector function, 2 Gigabit copper ports and 2 extra 100/1000BASE-X SFP fiber slots. Each of the BNC ports provides 36 watts of power with a total power budget of up to 150 watts. As an advanced PoE switch, the LRP-422CST features intelligent PoE functions to improve the availability of critical applications. It provides a quick, safe and cost-effective PoE network solution to upgrading the existing coaxial cable infrastructure from the analog system to the HD IP surveillance system.

Physical Port

- 4 100Mbps BNC female ports with Long Reach PoE Injector function
- 2 10/100/1000BASE-T Gigabit RJ45 copper ports
- 2 100/1000BASE-X mini-GBIC/SFP slots
- RJ45 console interface for switch basic management and setup

Long Reach Power over Ethernet

- Supports PoE power up to 36 watts for each PoE port
- Remote power feeding up to 1 kilometer with 5C2V/RG6 75Ω coaxial cable
- Long Reach PoE Management
  - Total Long Reach PoE power budget control
  - Per port Long Reach PoE function enable/disable
  - Long Reach PoE port power feeding priority
  - Per Long Reach PoE port power limitation
  - Long Reach PD alive check
  - Long Reach PoE schedule

Industrial Case/Installation

- IP30 aluminum case protection
- DIN-rail and wall-mount design
- Redundant Power Design
  - 48 to 56V DC, redundant power with polarity reverse protect function
- Supports EFT protection for 6000V DC power and 6000V DC Ethernet ESD protection
- -20 to 75 degrees C operating temperature

Layer 2 Features

- Prevents packet loss with back pressure (half-duplex) and IEEE 802.3x pause frame flow control (full-duplex)
- High performance Store and Forward architecture, broadcast storm control and runt/CRC filtering that eliminates erroneous packets to optimize the network bandwidth
- Supports VLAN
  - IEEE 802.1Q tagged VLAN
  - Provider Bridging (VLAN Q-in-Q, IEEE 802.1ad) support
  - Protocol VLAN
  - Voice VLAN
  - Private VLAN
  - Management VLAN
  - GVRP
- Supports Spanning Tree Protocol
  - STP (Spanning Tree Protocol)
  - RSTP (Rapid Spanning Tree Protocol)
  - MSTP (Multiple Spanning Tree Protocol)
  - STP BPDU Guard, BPDU Filtering and BPDU Forwarding
- Supports Link Aggregation
  - IEEE 802.3ad Link Aggregation Control Protocol (LACP)
  - Cisco ether-channel (static trunk)
  - Maximum 4 trunk groups, up to 4 ports per trunk group

Environmentally Hardened Design

With IP30 aluminum industrial case protection, the LRP-422CST provides a high level of immunity against electromagnetic interference and heavy electrical surges which are usually found on plant floors or in curb-side traffic control cabinets. It also possesses an integrated power supply source with wide range of voltages (48 to 56V DC) for worldwide high availability applications requiring dual or backup power inputs. Being able to operate under the temperature range from -20 to 75 degrees C, the LRP-422CST can be placed in almost any difficult environment.

Multi-channel Long Reach Power over Ethernet

To support the enterprises in easily building a multi-channel and centrally-controlled Long Reach PoE system, the LRP-422CST works with the Long Reach PoE Extenders, LRP-101CE, via its 4 BNC ports being the Long Reach PoE injectors for all connected LRP Extenders. Each of the BNC ports features long range data and power transmission for distance up to 1,000m (3,280ft) over coaxial cable to the LRP Extender, and another 100m over Ethernet cable to remote PoE IP camera, PoE wireless AP or access control systems complied with 802.3af/at PoE.
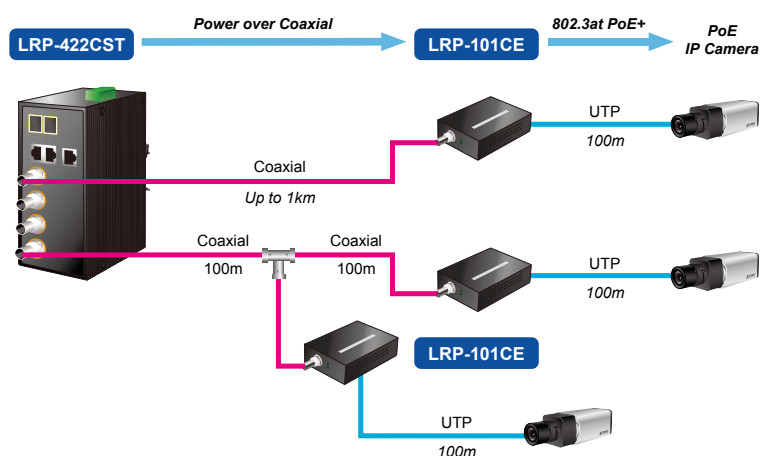
Centralized Power Management

With the centrally-managed 150-watt PoE budget, the LRP-422CST eliminates the need for an additional remote site power while allowing a single power source to provide power to both LRP extenders and the PoE powered devices at long range. The Long Reach PoE capabilities provided help to reduce installation time and deployment costs for network devices as a result of freeing from restrictions of power outlet locations.

Daisy-chaining Multiple Nodes

PLANET Long Reach PoE solution can easily build a power system for centrally-controlled IP cameras in a high availability network infrastructure. It gives users the flexibility to expand small area network with BNC T-connector for sharing four nodes per port when needed, making the LRP-422CST with 4 BNC Long Reach PoE Ports an ideal support for up to 16 PoE powered devices.

- Provides port mirror (many-to-1)
- Loop protection to avoid broadcast loops

Quality of Service
- Ingress/egress rate limit per port bandwidth control
- Storm control support
  - Broadcast/unknown unicast/unknown multicast
- Traffic classification
  - IEEE 802.1p CoS
  - ToS/DSCP/IP Precedence of IPv4/IPv6 packets
- Strict priority and Weighted Round Robin (WRR) CoS policies
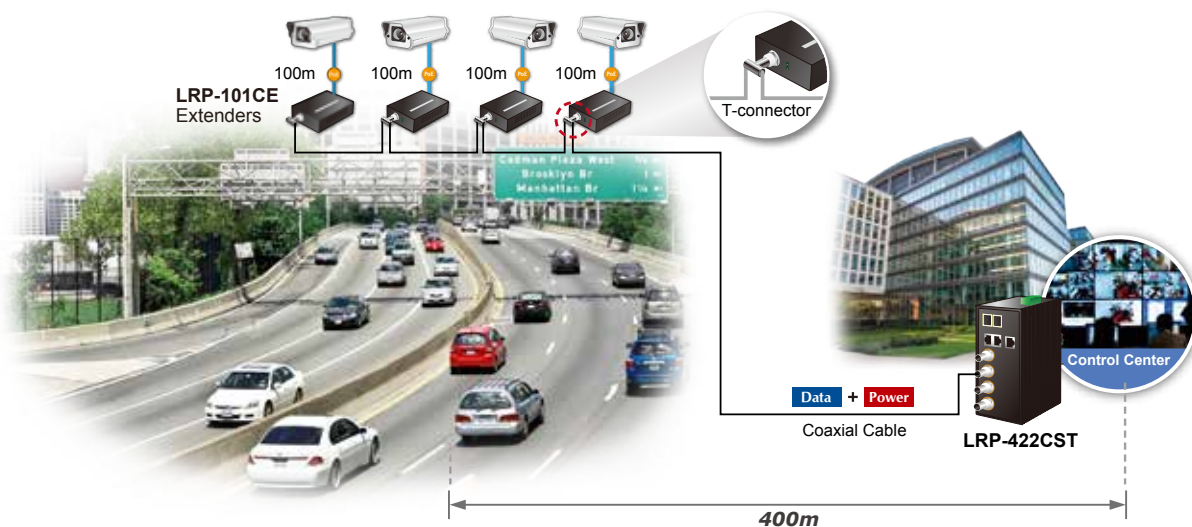
Multicast
- Supports IGMP snooping v2 and v3
- Supports MLD snooping v1, v2
- IGMP querier mode support
- IGMP snooping port filtering
- MLD snooping port filtering

Security
- Authentication
  - IEEE 802.1X Port-based network access authentication
  - Built-in RADIUS client to co-operate with the RADIUS servers
  - RADIUS/TACACS+ login user access authentication
- Access Control List
  - IPv4/IPv6 IP-based ACL
  - MAC-based ACL
- MAC Security
  - Static MAC
  - MAC filtering
- Port security for source MAC address entries filtering
- DHCP snooping to filter untrusted DHCP messages
- Dynamic ARP inspection discards ARP packets with invalid MAC address to IP address binding
- IP source guard prevents IP spoofing attacks
- DoS attack prevention
- SSH/SSL

Management
- IPv4 and IPv6 dual stack management
- Switch management interface
  - Web switch management
  - Telnet command line interface
  - SNMP v1, v2c and v3
  - SSH/SSL secure access
- User privilege levels control
- Built-in Trivial File Transfer Protocol (TFTP) client
- BOOTP and DHCP for IP address assignment
- System maintenance
  - Firmware upload/download via HTTP/TFTP
  - Configuration upload/download through Web interface
  - Dual images
  - Hardware reset button for system reboot or reset to factory default
- SNTP Network Time Protocol
- Cable diagnostics
- Link Layer Discovery Protocol (LLDP) and LLDP-MED
- SNMP trap for interface linkup and linkdown notifications
- Event message logging to remote Syslog server
- Four RMON groups (history, statistics, alarms and events)
- PLANET Smart Discovery utility

100m 100m 100m 100m

LRP-101CE Extenders

T-connector

Cadman Plaza West
Brooklyn Br
Manhattan Br

Control Center

Data + Power

Coaxial Cable   **LRP-422CST**

400m

Built-in Unique PoE Functions for Powered Devices Management

As a managed PoE switch for surveillance, wireless and VoIP networks, the LRP-422CST particularly features the following special PoE Management functions to accomplish a highly-efficient Long Reach network:

- PD Alive Check
- Scheduled Power Recycling
- PoE Schedule
- PoE Usage Monitoring

Intelligent Powered Device Alive Check

The LRP-422CST can be configured to monitor connected PD (Powered Device) status in real time via ping action. Once the PD stops working and responding, the LRP-422CST will resume the PoE port power and bring the PD back to work. It will greatly enhance the network reliability through the PoE port resetting the PD's power source and reducing administrator management burden.

Step 1

PD Status Good!!   PT PoE Camera

Ping Request

Ping Echo

Step 2

No Response......

Ping Request

Check alive status for 3 times

Step 3

Alarm Notification

PoE

ON   OFF

Restart PoE device if without response

Step 4

PD Alive!!

PoE

ON   ON