PoE Switch Family (EPS series)

Sales Kit
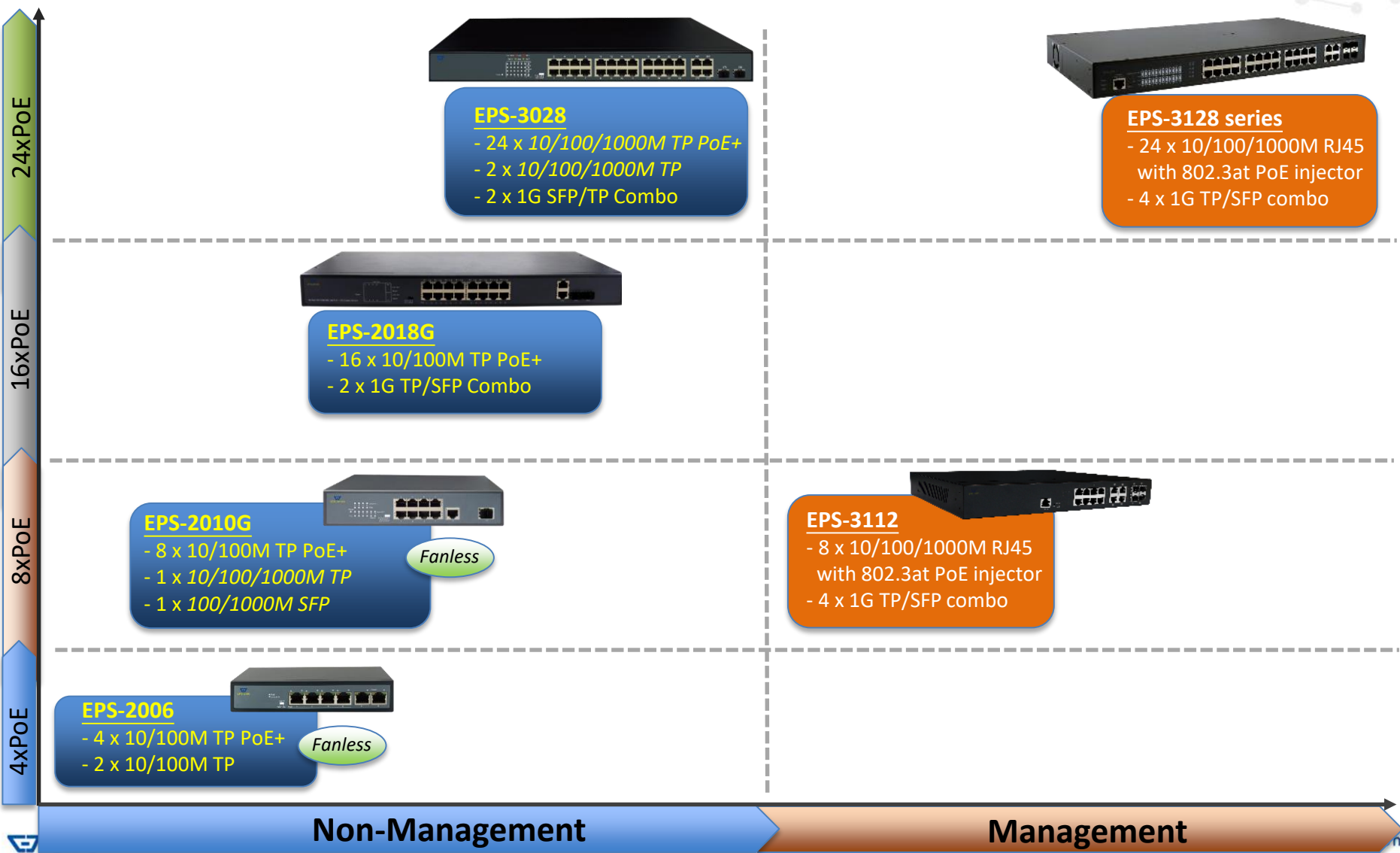
Agenda

- **EPS series – PoE Switch Family**
- Non-Management
  - 24x PoE Non-Management
  - 16x PoE Non-Management
  - 8x PoE Non-Management
  - 4x PoE Non-Management
  - Product Features
- Management
  - 24x PoE Management
  - 8x PoE Management
  - Product Features
    - Layer 2 Features
    - Management Features
- Target Applications
- Product Specification
- Ordering Information

EPS series - PoE Switch Family

EPS-3028
- 24 x *10/100/1000M TP PoE+*
- 2 x *10/100/1000M TP*
- 2 x 1G SFP/TP Combo

EPS-3128 series
- 24 x 10/100/1000M RJ45 with 802.3at PoE injector
- 4 x 1G TP/SFP combo

EPS-2018G
- 16 x 10/100M TP PoE+
- 2 x 1G TP/SFP Combo

EPS-2010G
- 8 x 10/100M TP PoE+
- 1 x *10/100/1000M TP*
- 1 x *100/1000M SFP*

Fanless

EPS-3112
- 8 x 10/100/1000M RJ45 with 802.3at PoE injector
- 4 x 1G TP/SFP combo

EPS-2006
- 4 x 10/100M TP PoE+
- 2 x 10/100M TP

Fanless

24xPoE

16xPoE

8xPoE

4xPoE

Non-Management

Management

Agenda

- EPS series – PoE Switch Family
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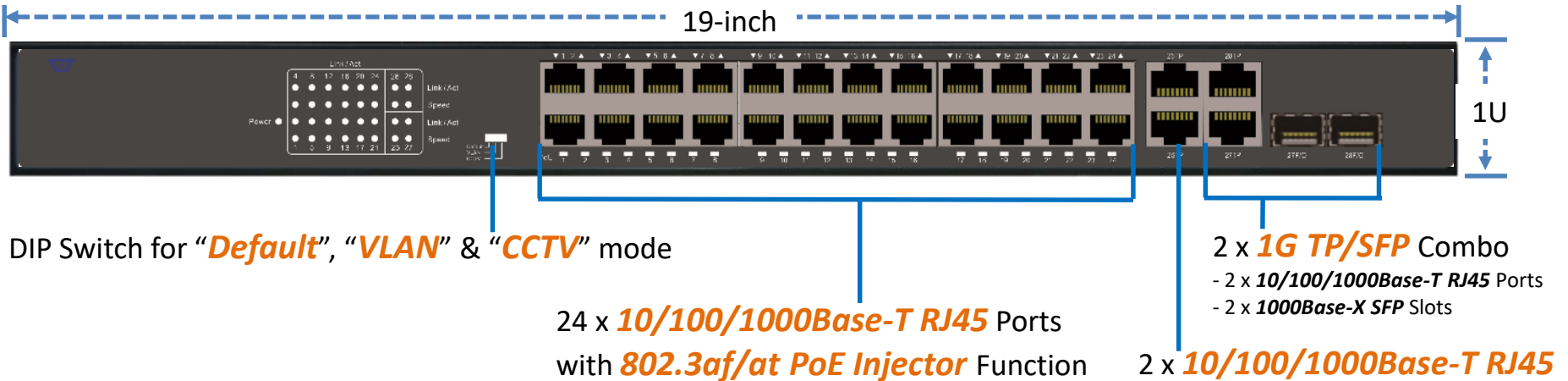   - Layer 2 Features
    - Management Features
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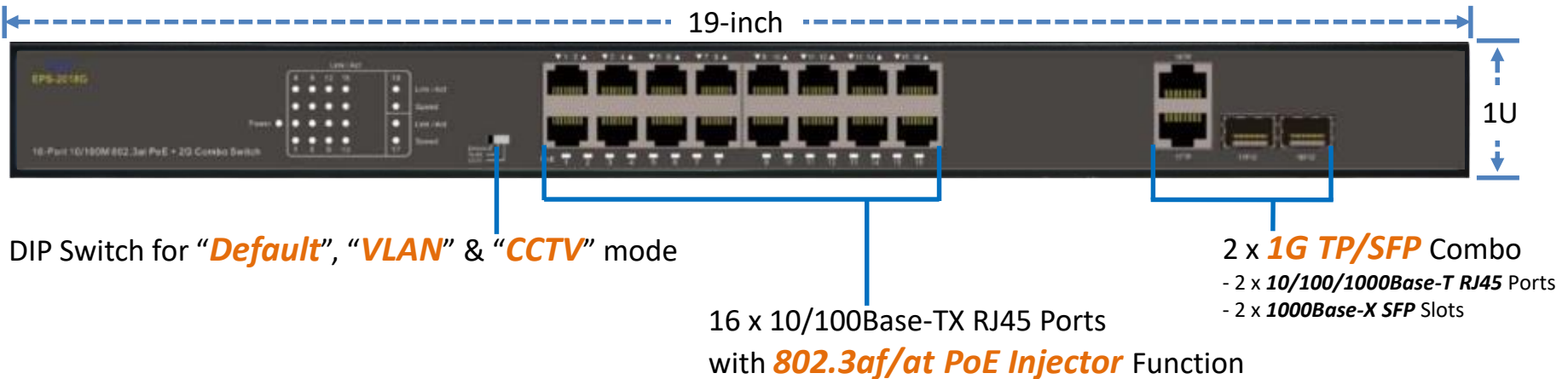- Product Specification
- Ordering Information

24x PoE Non-Management
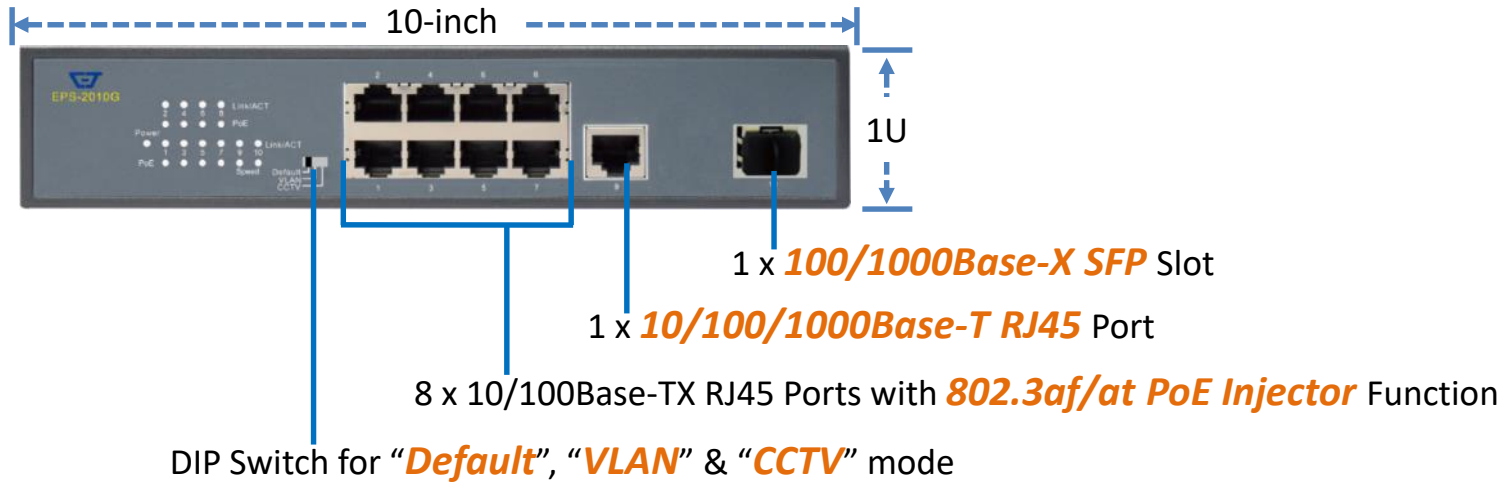
EPS-3028 *All Port Gigabit*

19-inch

1U

DIP Switch for "*Default*", "*VLAN*" & "*CCTV*" mode

24 x *10/100/1000Base-T RJ45* Ports
with *802.3af/at PoE Injector* Function

2 x *1G TP/SFP* Combo
- 2 x *10/100/1000Base-T RJ45* Ports
- 2 x *1000Base-X SFP* Slots

2 x *10/100/1000Base-T RJ45*

16x PoE Non-Management

EPS-2018G *Fast Ethernet PoE+ + 2 Gigabit TP/SFP Combo*

19-inch

1U

DIP Switch for "*Default*", "*VLAN*" & "*CCTV*" mode

16 x 10/100Base-TX RJ45 Ports
with *802.3af/at PoE Injector* Function

2 x *1G TP/SFP* Combo
- 2 x *10/100/1000Base-T RJ45* Ports
- 2 x *1000Base-X SFP* Slots

CTS

8x PoE Non-Management

EPS-2010G *Fast Ethernet PoE+ + 1 Gigabit TP + 1 Gigabit SFP*

10-inch

1U

1 x *100/1000Base-X SFP* Slot

1 x *10/100/1000Base-T RJ45* Port

8 x 10/100Base-TX RJ45 Ports with *802.3af/at PoE Injector* Function

DIP Switch for "*Default*", "*VLAN*" & "*CCTV*" mode

4x PoE Non-Management

EPS-2006 *Fast Ethernet PoE+ + 2 Fast Ethernet TP*

Desktop

2 x 10/100Base-TX RJ45 Ports

4 x 10/100Base-TX RJ45 Ports with *802.3af/at PoE Injector* Function

DIP Switch for "*Default*" & "*CCTV*" mode
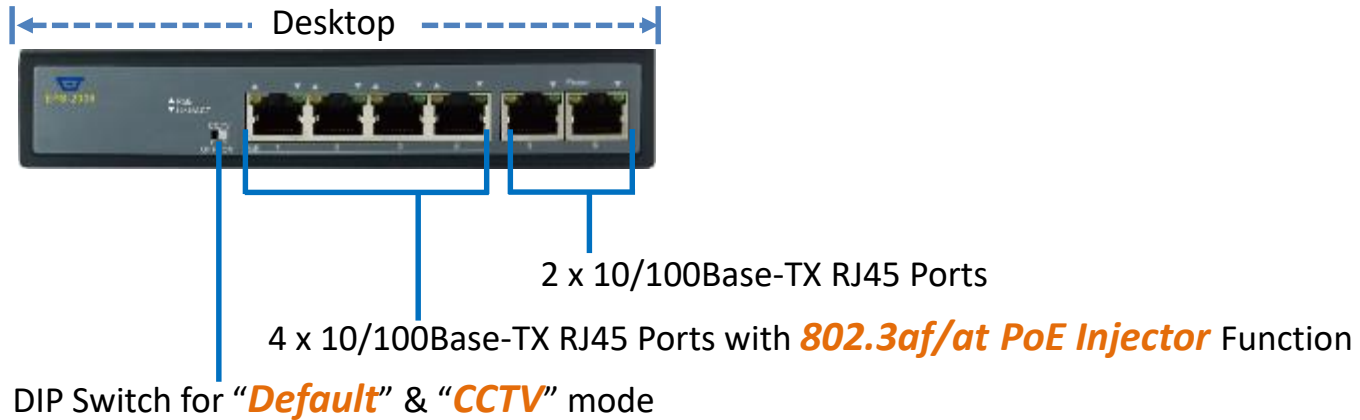
# Power over Ethernet Features

- ## IEEE 802.3af/at PoE PSE
    - Compliant with both *IEEE 802.3at* and *IEEE 802.3af* Power over Ethernet standard
    - Each PoE port supplies up to 30 watts of power output and data transmission
    - Carrying both Ethernet data and power simultaneously that reduces cabling requirements and eliminates the need for dedicated electrical outlets on the wall, ceiling or any unreachable place.

Non PoE Switch

Data

Step 1.
Connect RJ45 cable to remote device

Power

Step 2.
Connect power adapter to electrical outlet

PoE Switch

Data
+
Power

Only need to connect RJ45 cable to remote device
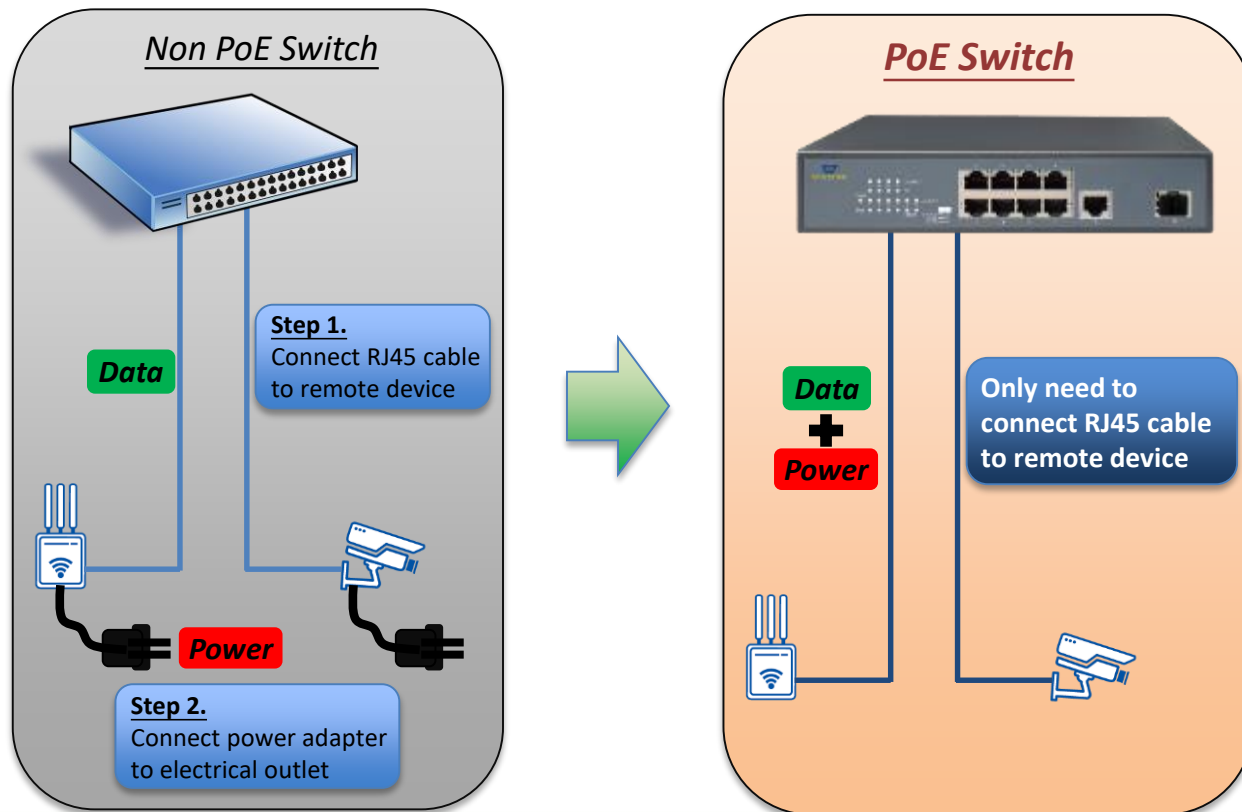
Hardware DIP Switch Features

- **DIP Switch**
  - Supports "Default", "VLAN" and "CCTV" operation modes
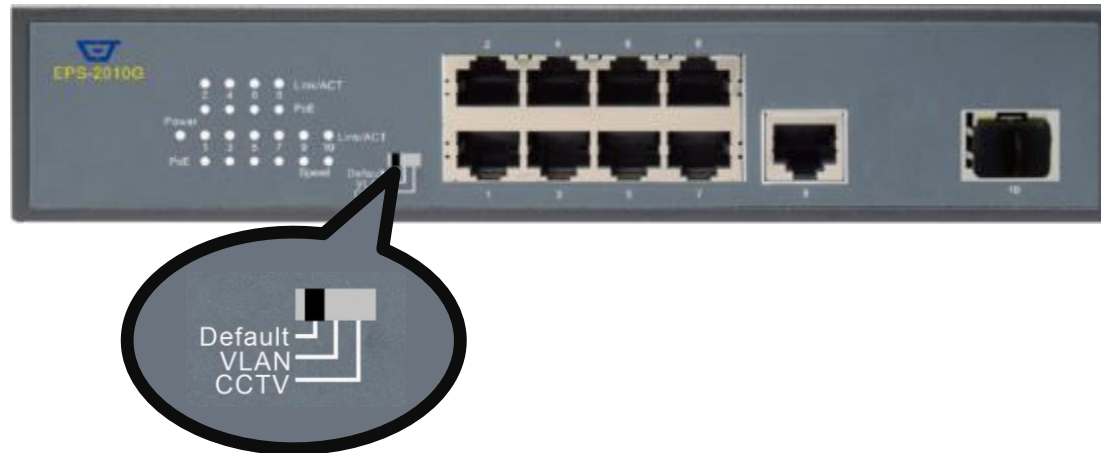
Mode	Data Transmission			Maximum PoE Port Distance
	PoE to PoE	Non PoE to PoE	Non PoE to Non PoE	
Default	⦿	⦿		100 meters
VLAN	✖	⦿		100 meters
CCTV	🔺	⦿		*250 meters*

⦿ = Access Permitted,   ✖ = Access Denied,   🔺 = Depend on different model

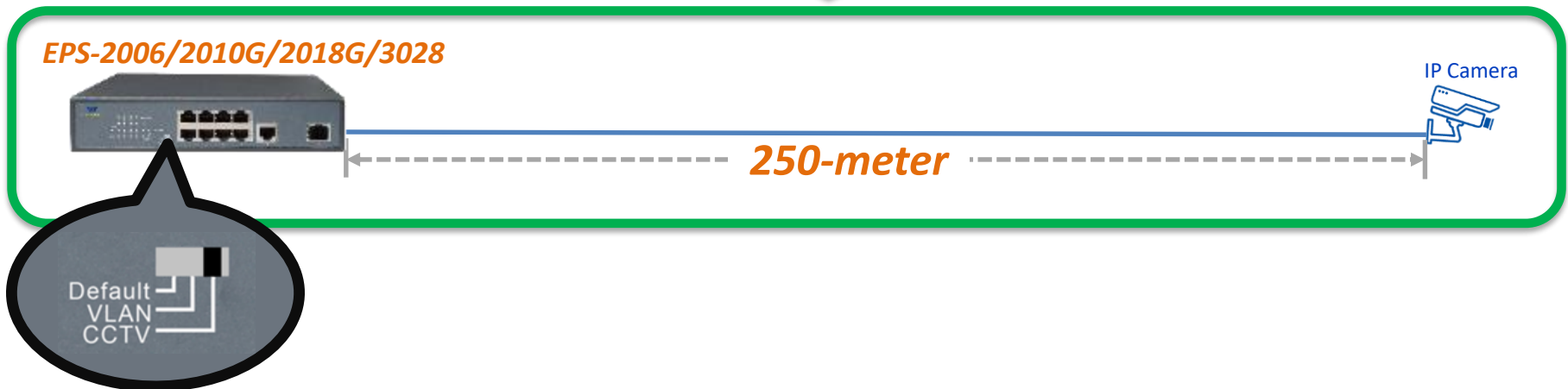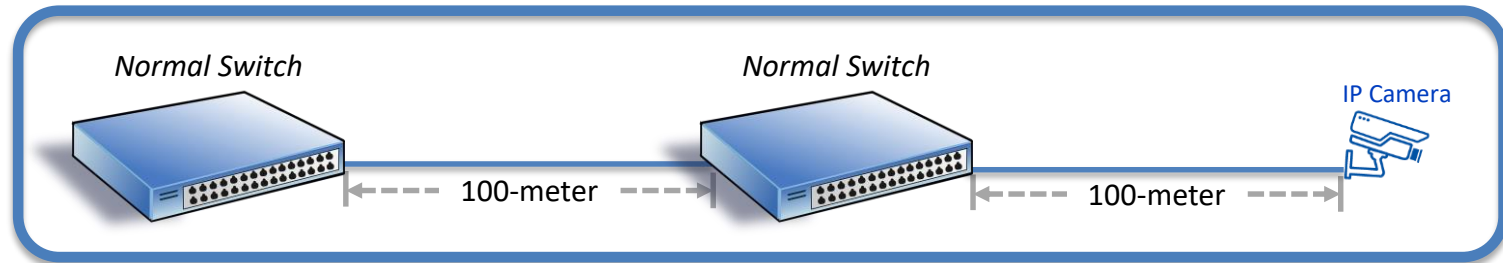www.ctsystem.com

VLAN DIP Switch Features

- **Port Isolation**

  – The VLAN operation mode features *port isolation* function that can help to prevent multicast or broadcast storm from influencing each PoE port

Default VLAN CCTV

Internet

PoE Port to Non PoE Port Access Permitted

NVR

IP Camera

IP Camera

IP Camera

IP Camera

PoE Port to PoE Port Access Denied
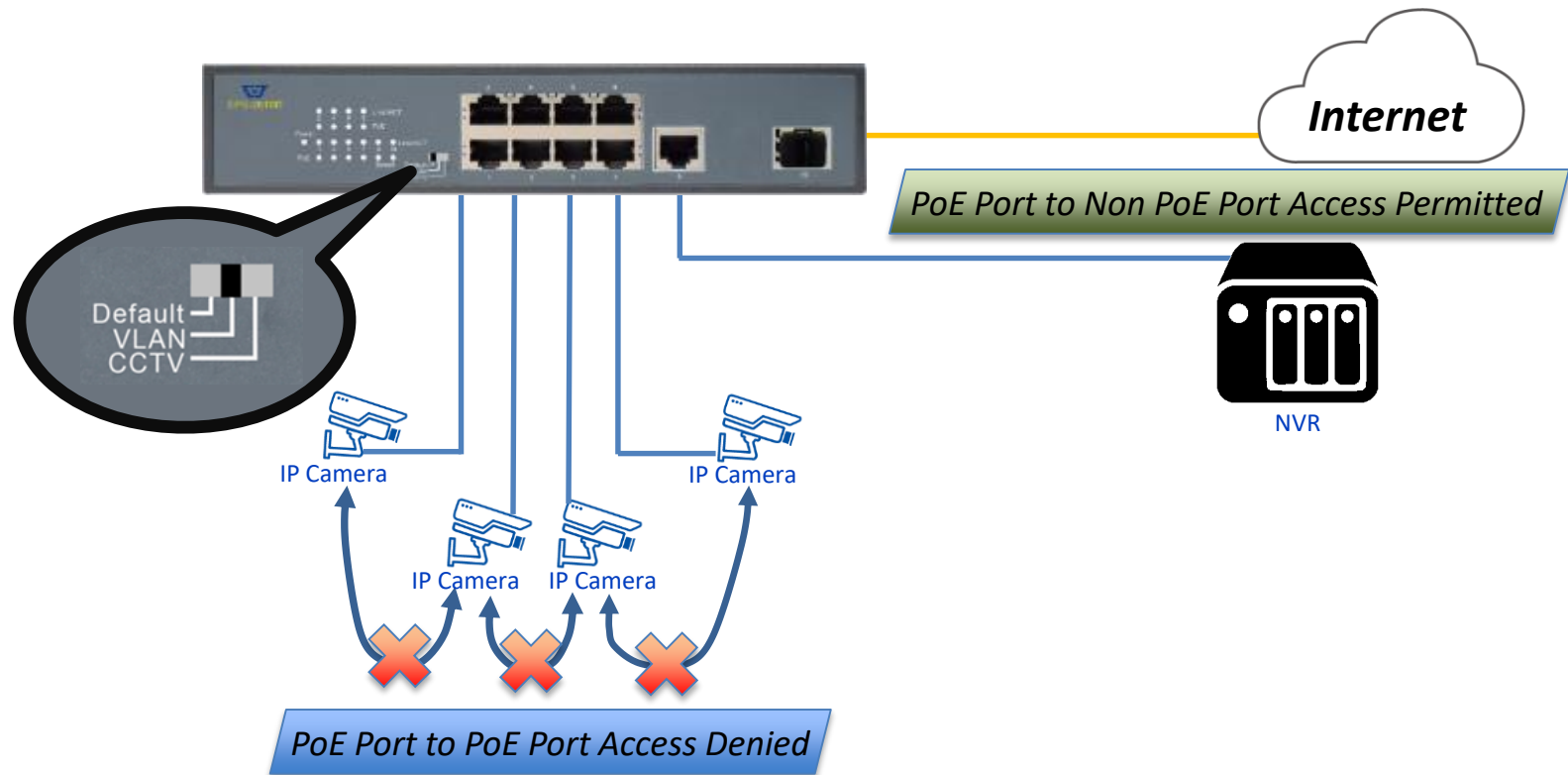
CCTV DIP Switch Features

- **Long Distance**

  – The CCTV operation mode allows each PoE port to extend distance up to **250 meters** at 10Mbps while remaining to support 30W PoE power output

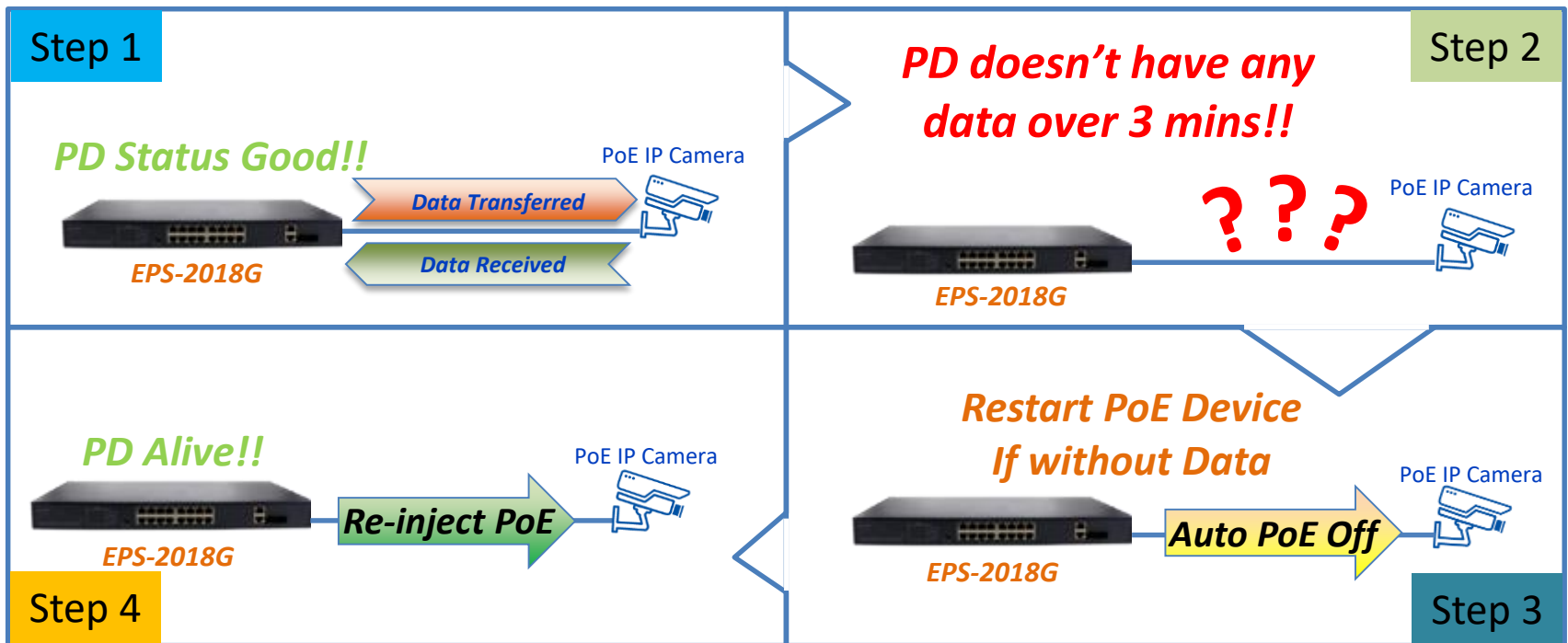

Normal Switch   Normal Switch   IP Camera

100-meter   100-meter

EPS-2006/2010G/2018G/3028   IP Camera

250-meter

Default
VLAN
CCTV

EPS-2006 and EPS-2018G support extend distance and port isolation function in CCTV mode.

PD Alive Check Features

- **Intelligent Alive Check for Powered Device**
  - PoE Switch can auto monitor traffic for connected PD's status in real time
  - PoE switch will auto cut off PoE power output and re-inject PoE power on the port if PoE port doesn't have any traffic over 3mins.

Step 1
PD Status Good!!
Data Transferred
Data Received
PoE IP Camera
EPS-2018G

Step 2
PD doesn't have any data over 3 mins!!
? ? ?
PoE IP Camera
EPS-2018G

Step 3
Restart PoE Device If without Data
Auto PoE Off
PoE IP Camera
EPS-2018G

Step 4
PD Alive!!
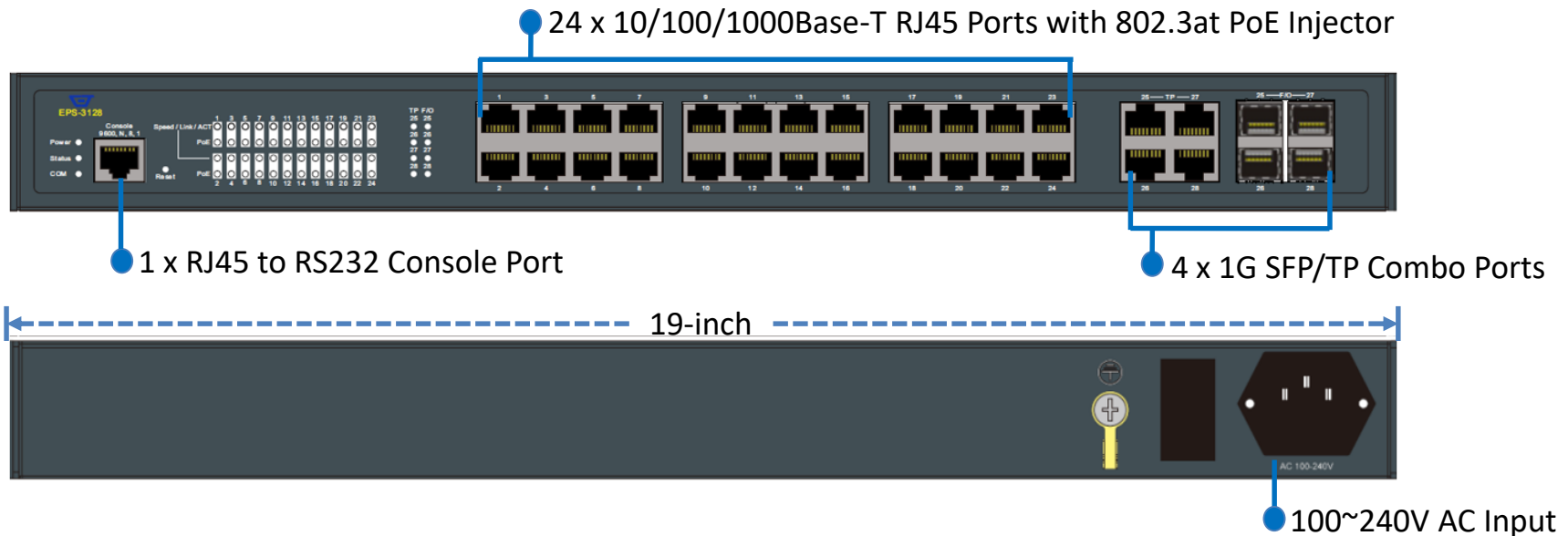Re-inject PoE
PoE IP Camera
EPS-2018G

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24x PoE Management

EPS-3128 series: 24x 1G PoE+ + 4x 1G Ethernet Switch Solution

24 x 10/100/1000Base-T RJ45 Ports with 802.3at PoE Injector

1 x RJ45 to RS232 Console Port

4 x 1G SFP/TP Combo Ports

19-inch

100~240V AC Input

Model Name	PoE Port	PoE Output	PoE Budget	6KV Surge Protection	Fiber Port	Dimensions
EPS-3128-SE-180W	24	Per Port 30W	180W	Yes	4 Combo	440 x 230 x 44 mm
EPS-3128-240W	24	Per Port 30W	240W	-	4 Combo	440 x 330 x 44 mm
EPS-3128-240W-LP	24	Per Port 30W	240W	Yes	4 Combo	440 x 330 x 44 mm
EPS-3128-480W	24	Per Port 30W	480W	-	4 Combo	440 x 330 x 44 mm
EPS-3128-480W-LP	24	Per Port 30W	480W	Yes	4 Combo	440 x 330 x 44 mm

EPS-3128 series


Key Selling Features

- **Various PoE Budget**
  - up to 30 watts for each PoE port with 180/240/480W PoE

- **Reliable Network Redundancy**
  - Proprietary redundant ring technologies including Fast Ring v2 & Chain, the recovery time of data link can be as fast as 50ms up to 200 nodes

- **PoE Quick Control**
  - Enables operators to monitor PoE status from one page, and remotely control PoE output power on/off to save human resources.

- **PoE Power Saving**
  - By setting schedules on PoE ports saves costs by turning off the power on periodically unwanted PD devices.

- **Dual Use of WAN Port**
  - Combo port (SFP/Copper) provides more options to fulfill future needs

- **Future-Proof**
  - Web UI, telnet, SSH & SNMP Management, DHCP Snooping, MLD Snooping ready for future IPv6 environments.

- **Powerful Security Features**
  - DHCP snooping/option 82, Port Isolation, IP Source Guard and Loop Detection reduce Core Network loading of Security Protection.

- **Multi-Service Setup**
  - Provides 802.1q VLAN configuration, Double Tag Q-in-Q and QoS priority settings for best performance in multi-service scenarios.

- **Reduced Operation Cost**
  - SNMP Power Down Trap provides Smart monitoring and DHCP Auto Provisioning eases field engineers' effort in maintaining and upgrading the existing network.

- **Strong Surge Protection (Option)**
  - 6KV Surge Protection to prevent PoE ports from surge damage

Network Redundancy – Fast Ring

- **Fast Ring v2 Benefits**
    - High-speed Recovery Time: Less than 50 milliseconds
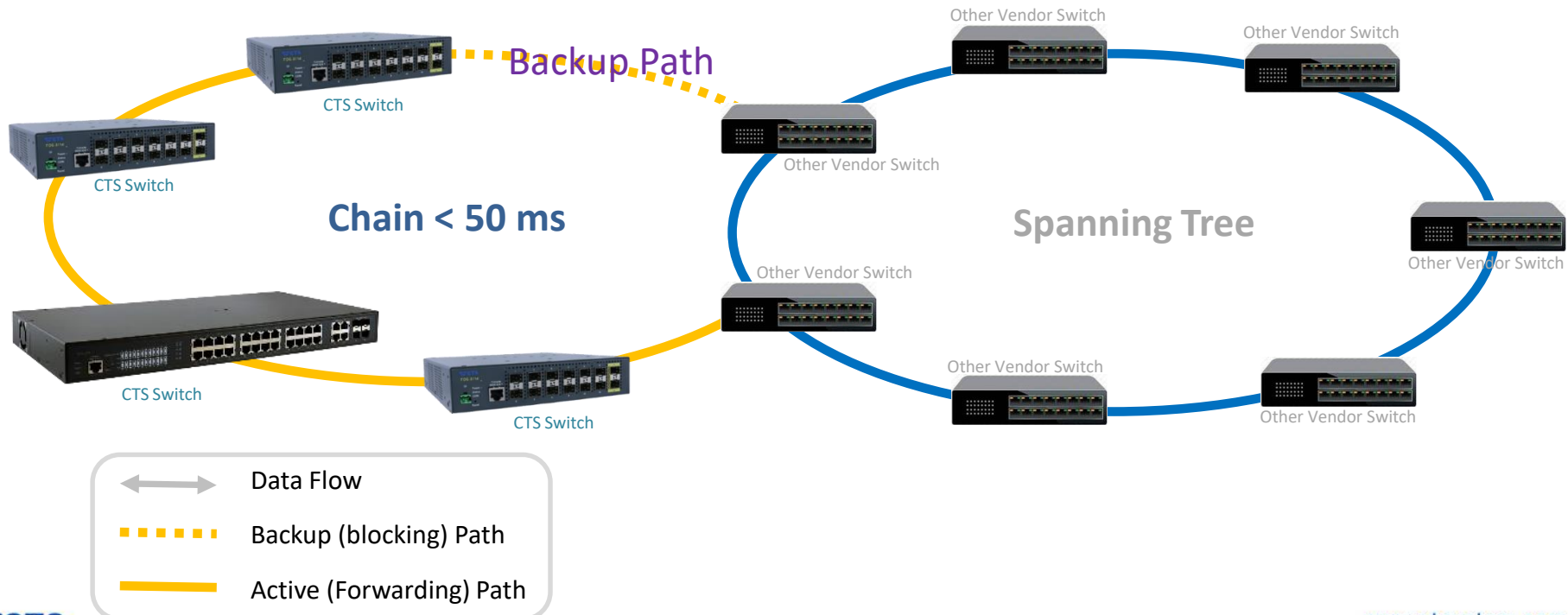   - Ability to support up to 200 nodes

Backup Path

Fast Ring v2 < 50 ms

Data Flow
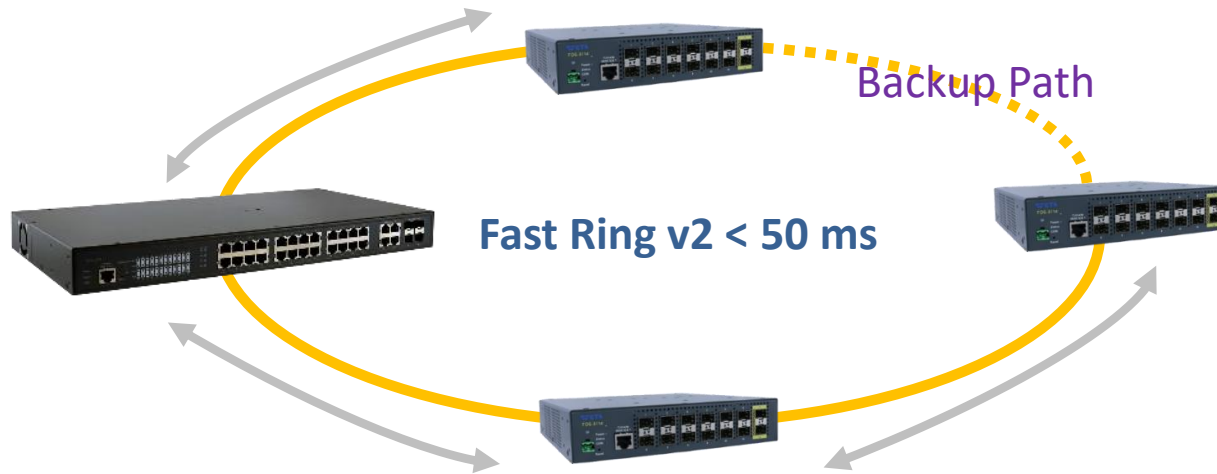
Backup (blocking) Path

Active (Forwarding) Path
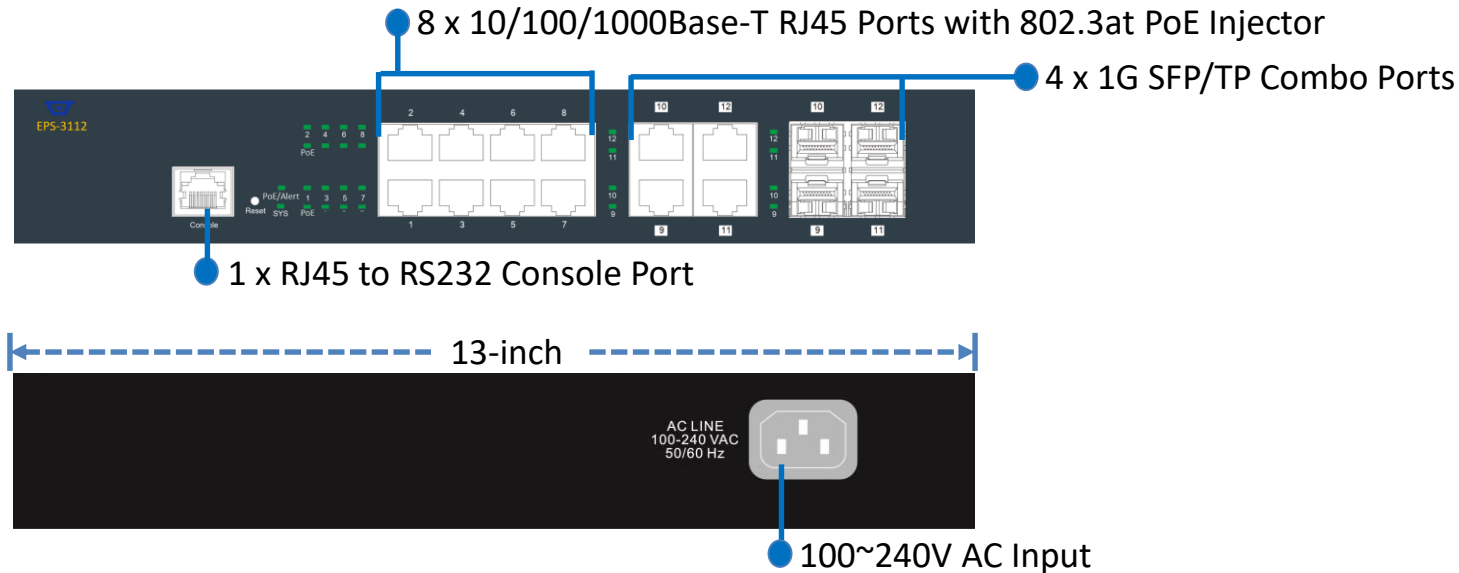
Network Redundancy – Fast Chain

- ## Chain Benefits
    - High-speed Recovery Time: Less than 50 milliseconds
    - Ability to support up to 200 nodes
    - Flexible and scalable network deployment
    - Compatible with other redundant protocol (Ex: RSTP, STP, etc.)
    - Unlimited to extend multiple chain in any topology (Ex: 1. Ring + chain + … + chain; 2. STP/RSTP + chain + … + chain)

Backup Path

CTS Switch

CTS Switch

CTS Switch

CTS Switch

Chain < 50 ms

Spanning Tree

Other Vendor Switch

Other Vendor Switch

Other Vendor Switch

Other Vendor Switch

Other Vendor Switch

Other Vendor Switch

Other Vendor Switch

Data Flow

Backup (blocking) Path

Active (Forwarding) Path

8x PoE Management

EPS-3112: 8x 1G PoE+ + 4x 1G Ethernet Switch Solution

8 x 10/100/1000Base-T RJ45 Ports with 802.3at PoE Injector

4 x 1G SFP/TP Combo Ports

1 x RJ45 to RS232 Console Port

13-inch

100~240V AC Input

- Total PoE Budget: 130W

Model Name	PoE Port	PoE Output	PoE Budget	Fiber Port	Dimensions
EPS-3112	8	Per Port 30W	130W	4 Combo	330 x 230 x 44 mm

EPS-3112

Key Selling Features

- **PoE Quick Control**
    - Enables operators to monitor PoE status from one page, and remotely control PoE output power on/off to save human resources.

- **PoE Power Saving**
    - By setting schedules on PoE ports saves costs by turning off the power on periodically unwanted PD devices.

- **Dual Use of WAN Port**
    - Combo port (SFP/Copper) provides more options to fulfill future needs

- **Future-Proof**
    – Web UI, telnet, SSH & SNMP Management, DHCP Snooping, MLD Snooping ready for future IPv6 environments.

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- **Multi-Service Setup**
    – Provides 802.1q VLAN configuration, Double Tag Q-in-Q and QoS priority settings for best performance in multi-service scenarios.

- **Reduced Operation Cost**
    – SNMP Power Down Trap provides Smart monitoring and DHCP Auto Provisioning eases field engineers' effort in maintaining and upgrading the existing network.

Layer 2 Features

- **VLAN**
  - Port-based VLAN
  - IEEE 802.1Q tagged VLAN
  - Up to 2K VLAN groups, out of 4094 VLAN IDs
  - IEEE 802.1ad VLAN Q-in-Q
  - VLAN Translation with CoS Mapping
  - Port Isolation
- **Security**
  - Network Access Authentication Mechanism
    - 802.1X Port-based authentication
    - 802.1X MAC Address Authentication Bypass
    - 802.1X dynamic VLAN assign
  - Access Control List
    - IP-based ACL to permit or deny traffic
    - MAC-based ACL to permit or deny traffic
  - Management source IP address binding to provide unauthorized intruder
  - DHCP Snooping
    - Supports DHCP server trust/untrust port
    - Supports DHCP Option 82/DHCPv6 Option 37 and

- IP Source Guard prevents IP spoofing attacks
- **Link Aggregation**
  - IEEE 802.3ad Link Aggregation Control Protocol (LACP)
  - Static Port Trunk
- **Quality of Service**
  - 8 priority queues
  - Traffic Classification
    - 802.1p CoS/IP DSCP
  - Ingress and Egress Rate Limit
  - Strict Priority and Weight QoS policies
  - QoS Remarking
    - 802.1p CoS/IP DSCP
- **Spanning Tree Protocol**
  - IEEE 802.1D Spanning Tree Protocol (STP)
  - IEEE 802.1w Rapid Spanning Tree Protocol (RSTP)
- **Multicast**
  - Supports per VLAN IGMP Snooping v1, v2 and v3
  - Supports per VLAN MLD Snooping v1 and v2
  - Per VLAN querier mode support
  - Fast Leave and IGMP/MLD Snooping Filter

Management

- **Management Interface**
  - Basic Management Interface
    - Web browser, SNMP v1/v2c and command line interface (CLI) – telnet, console port

  - Secure Management Interface
    - SSH and SNMPv3

  - SNMP RMON 1 and 2 for in/out traffic and event monitoring

  - SNMP Trap
    - Cold start, warm start
    - Port link up/down, console port link up/down
    - Fan, CPU loading, CPU temperature
    - Authentication failure, auto backup, storm control, MAC limit

- **Management Tools**
  - Built-in File Transfer Protocol (FTP) and Trivial File Transfer Protocol (TFTP) client
  - Firmware upgrade/downgrade via HTTP/FTP/TFTP
  - Configuration backup/restore via HTTP/FTP/TFTP
  - NTP (Network Time Protocol)
  - LLDP (Link Layer Discovery Protocol)
    - Neighbor discovery protocol is used for network devices to advertise information about themselves to other devices on the network

  - Loop Detection

  - SFP Information
    - Check the transceiver speed, distance, vendor name, vendor S/N, temperature, voltage, Tx current, Tx power and Rx power in real time
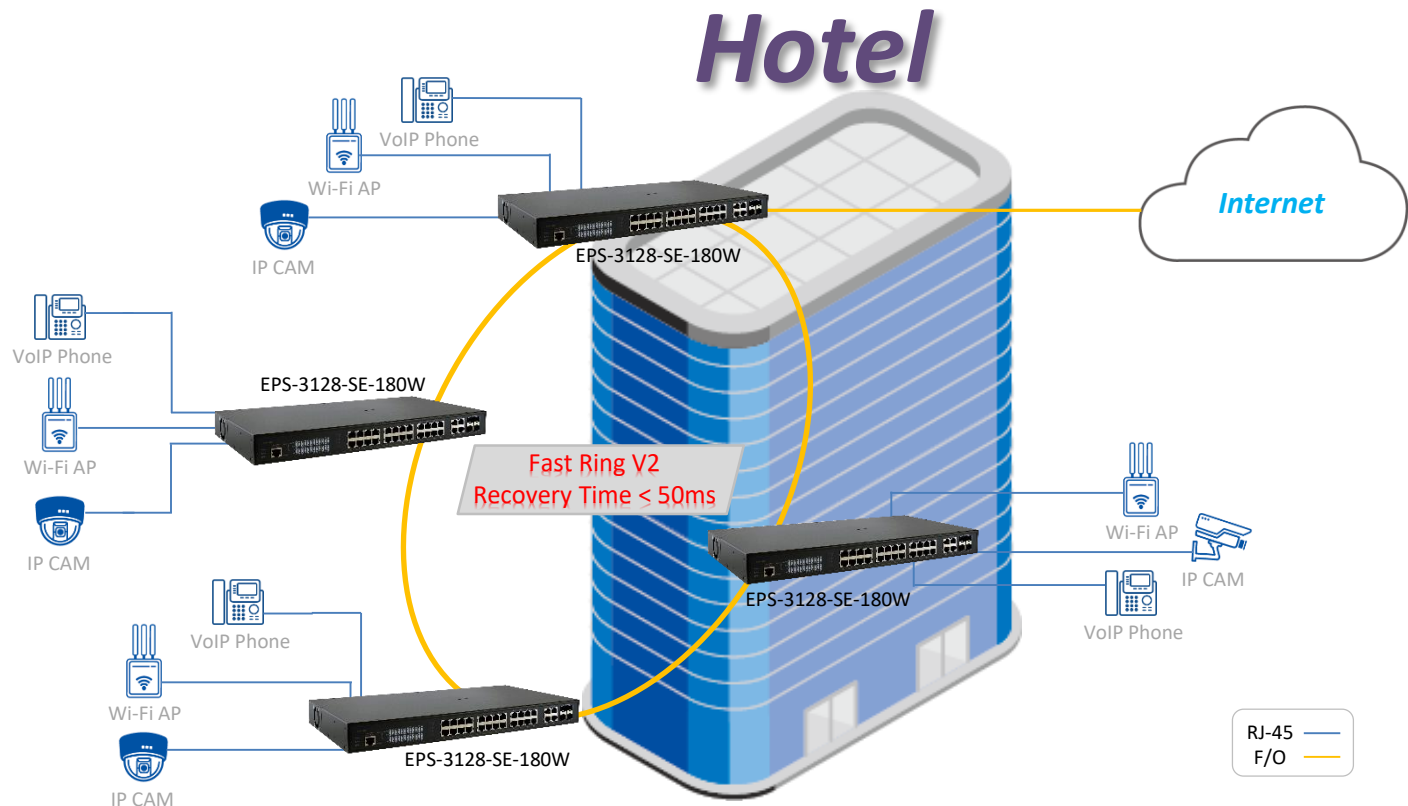
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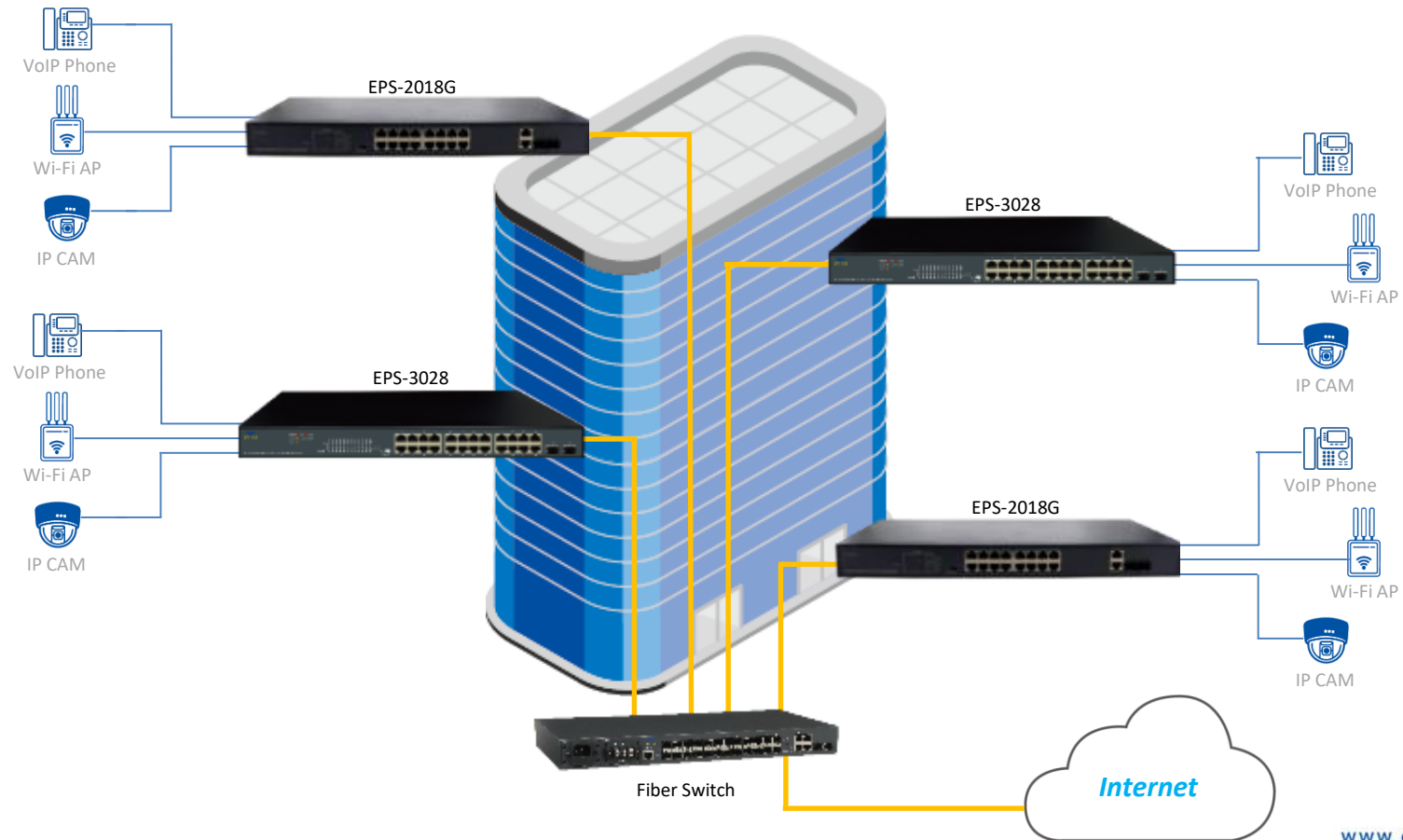- Product Specification
- Ordering Information

PoE Solution

- **Provide PoE power to each PDs (Powered Device), such as PoE IP Cam/wireless AP/VoIP**

Office/Hotel Solution

- **Provide 16/24-port PoE interface can easily build PoE application shared by wireless AP, VoIP and surveillance system. Connect to central room via fiber interface.**

www.ctsystem.com

Convenience Store Solution

- **Create small surveillance system for convenience store and small-scale home**
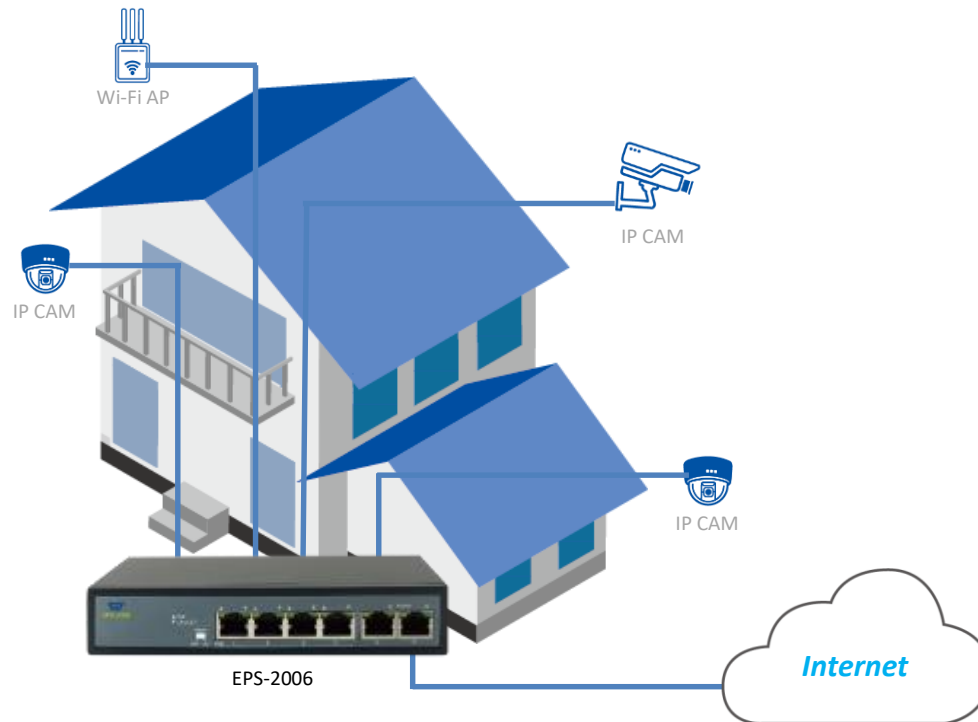
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Product Specifications

Image	1G SFP	1G RJ45	PoE+ Port	PoE Budget	Power
EPS-3112	4 x 100/1000M Combo	12 x 10/100/1000M	8	130	AC
EPS-3128	4 x 100/1000M Combo	28 x 10/100/1000M	24	180/240/480	AC

All Port Gigabit Product Specifications

Image	EPS-3028
10/100/1000Base-T	28
10/100Base-TX	-
PoE Injector Port	24 (Port-1 to Port-24)
1000Base-X	2 combo, shared with Port-27 to Port-28
100Base-FX	-
PoE Power Output	IEEE 802.3af/at standard, per port 30W PoE Power Output
PoE Budget	380W
DIP Switch	Default/VLAN/CCTV
PD Alive Check	O
Operating Temperature	0~50 Degrees C

- = no supported, **O** = supported

Product Specifications

Image	EPS-2006	EPS-2010G	EPS-2018G
10/100/1000Base-T	-	1	2
10/100Base-TX	6	8	16
PoE Injector Port	4 (Port-1 to Port-4)	8 (Port-1 to Port-8)	16 (Port-1 to Port-16)
1000Base-X	-	1	2 combo, shared with Port-17 to Port-18
100Base-FX	-	Compatible	-
PoE Power Output	IEEE 802.3af/at standard, per port 30W PoE Power Output		
PoE Budget	60W	120W	250W
DIP Switch	Default/CCTV	Default/VLAN/CCTV	
PD Alive Check	-	-	O
Operating Temperature	0~50 Degrees C		

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Ordering Information

Model Name	PoE Port	Fiber Port	PoE Budget	6KV Surge Protection	L2 Management	Dimensions
EPS-3028	24	2 Combo	380W	Yes	-	440 x 232 x 45 mm
EPS-2018G-250W	16	2 Combo	250W	Yes	-	440 x 208 x 45 mm
EPS-2010G	8	1	120W	Yes	-	20 x 150 x 44 mm
EPS-2006	4	0	60W	Yes	-	168 x 93 x 32 mm
EPS-3128-SE-180W	24	4 Combo	180W	Yes	Yes	440 x 230 x 44 mm
EPS-3128-240W	24	4 Combo	240W	-	Yes	440 x 330 x 44 mm
EPS-3128-240W-LP	24	4 Combo	240W	Yes	Yes	440 x 330 x 44 mm
EPS-3128-480W	24	4 Combo	480W	-	Yes	440 x 330 x 44 mm
EPS-3128-480W-LP	24	4 Combo	480W	Yes	Yes	440 x 330 x 44 mm
EPS-3112	8	4 Combo	130W	-	Yes	330 x 230 x 44 mm