

L2+ 48-Port 10/100/1000T 802.3at PoE + 4-Port Shared 100/1000X SFP Managed Switch with Hardware-based Layer3 IPv4/IPv6 Static Routing

WGSW-48040HP



Presentation Outlines

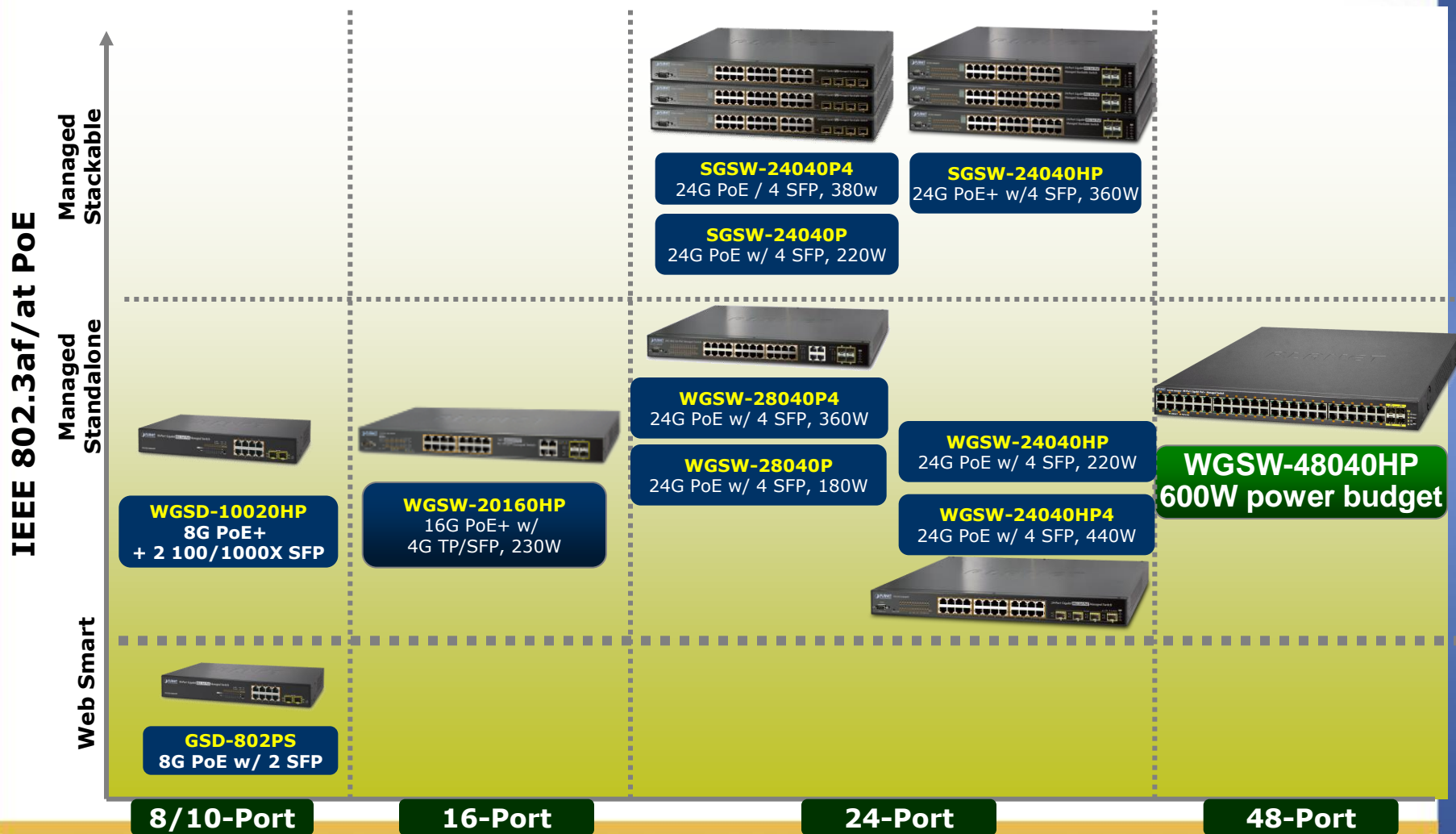
- ◆ **Product Overview**
- ◆ **Product Benefits**
- ◆ **Product Features**
- ◆ **Applications**
- ◆ **Comparison**
- ◆ **Appendix**

Hardware
Layer3 Static Routing



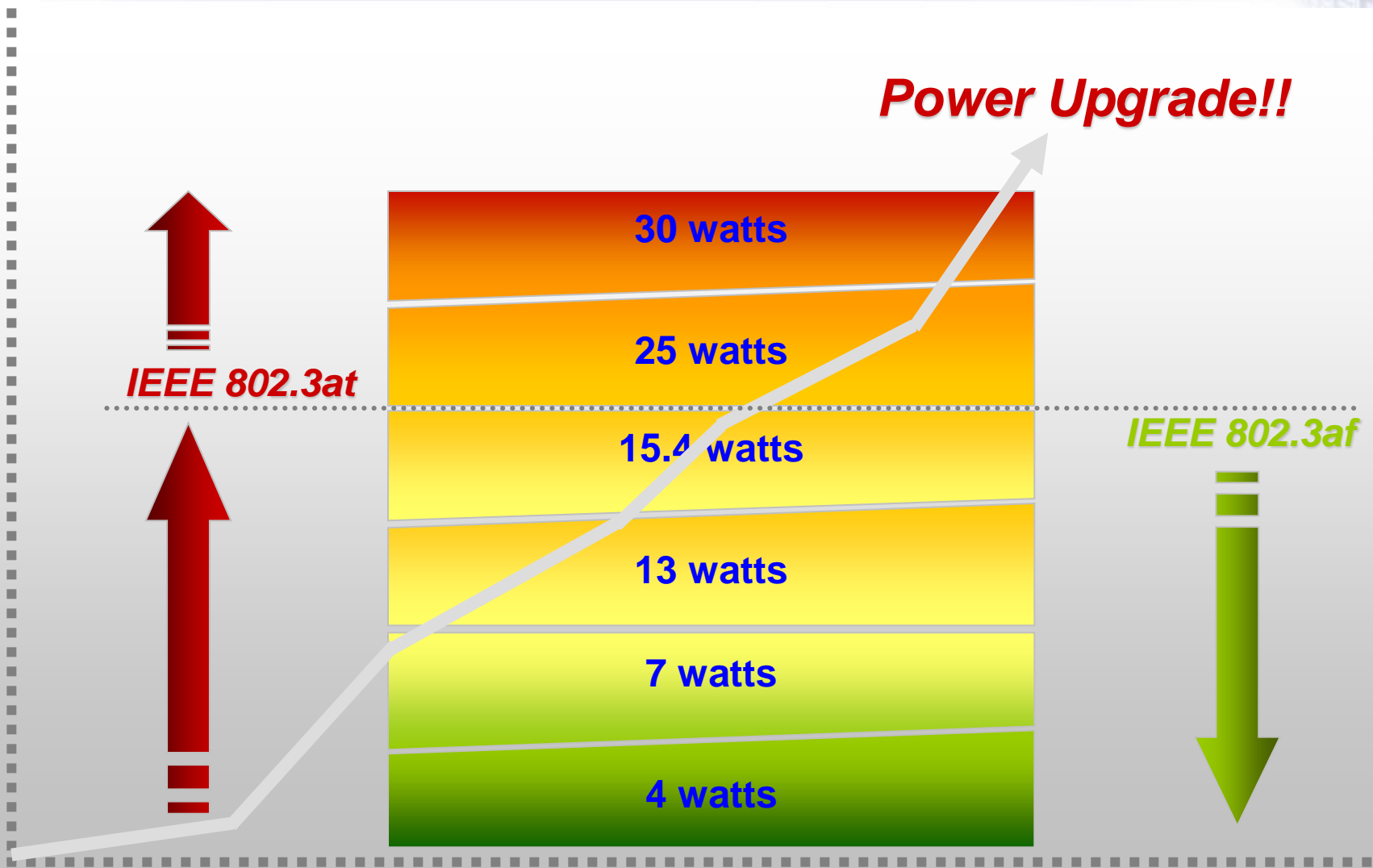
Product Overview

◆ The PLANET Layer 2 / 2+ Managed Gigabit *PoE* & *PoE+* Switch Family





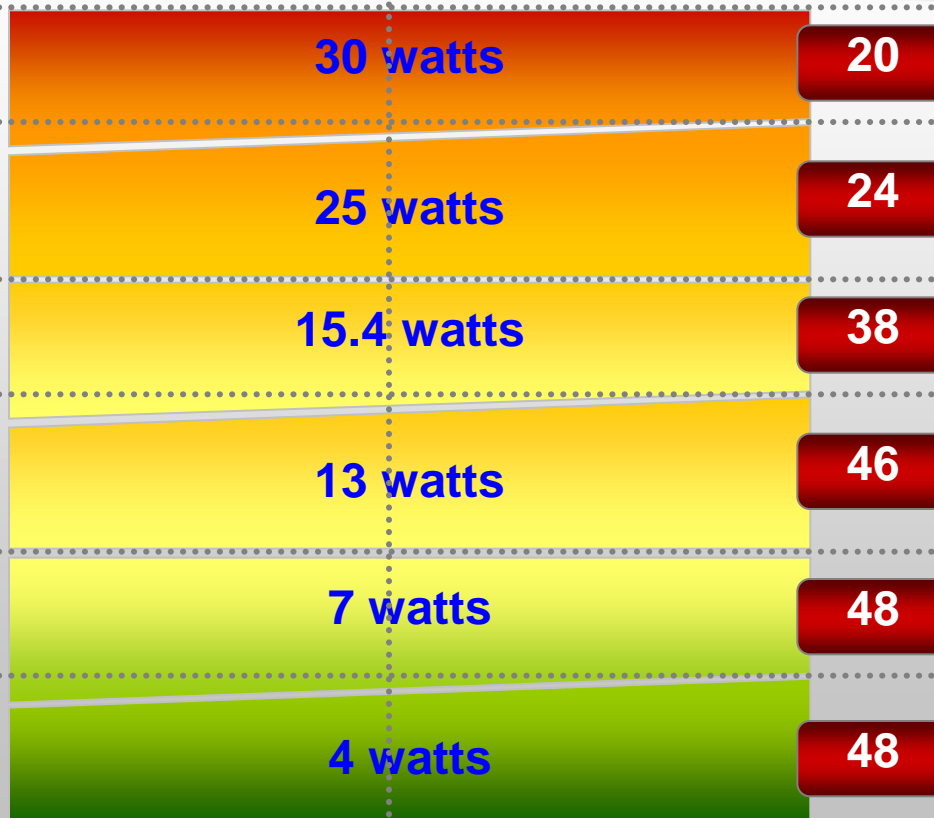
Product Overview



Product Overview

Power Budget

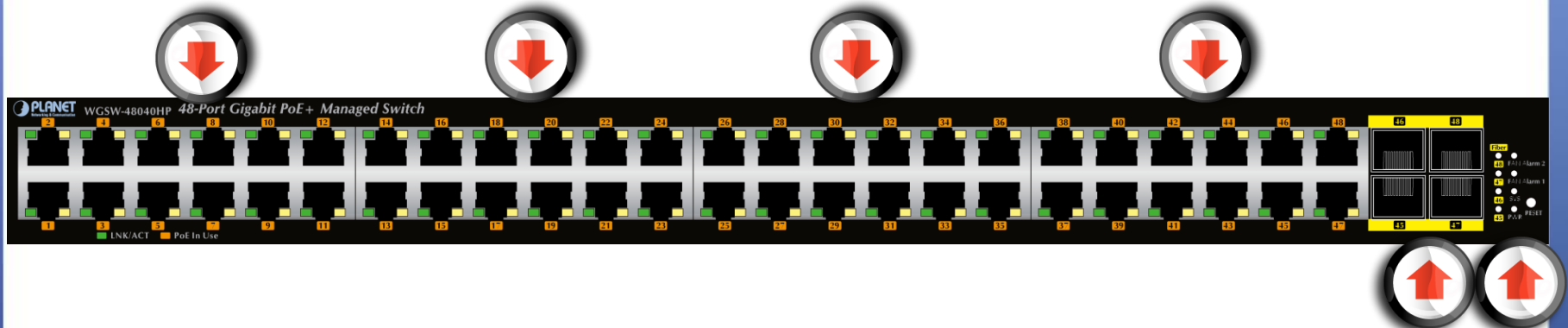
WGSW-48040HP
600W power budget



PD support

Product Overview – **Front Panel**

- ◆ **48-port 10/100/1000Base-T with PoE+ injector function**
- ◆ **4-port 100/1000X shared SFP mini-GBIC slot**
- ◆ **RESET button**
- ◆ **System LED, PoE-in-Use LED and Port LED**
- ◆ **Power, Fan1 and Fan2 Alert LEDs**



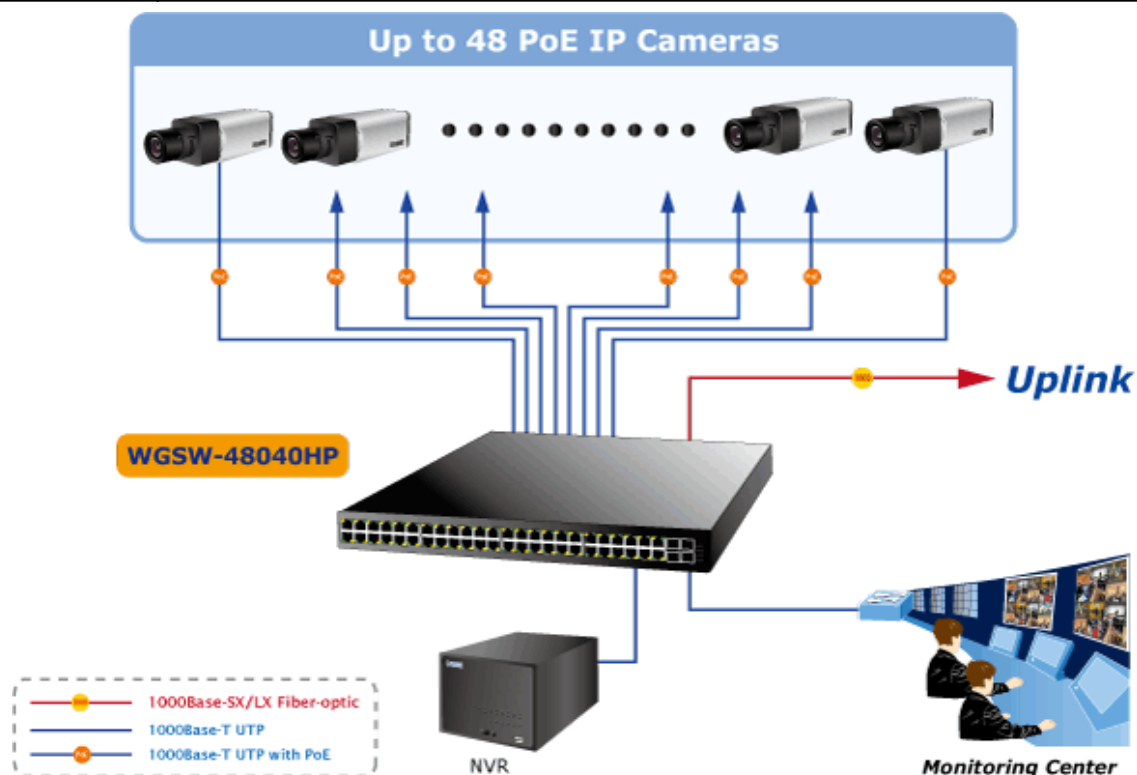
Product Overview – Rear Panel

- ◆ Thermal Fan1 and Fan2
- ◆ Power switch and AC input socket
- ◆ RJ-45 to RS-232 Console Port



Product Benefits

Model Name	WGSW-48040HP
Power Budget	600 watts
Applications	All types of IP surveillance, VoIP and Wi-Fi deployments



Product Benefits

◆ Advanced Intelligent Power / PD Management Functions

PD Alive Check

Scheduled Power Recycle

E-Mail / SNMP Trap Event Alert

PoE Power Schedule

Over Temperature Protection

PoE Usage Status Graphics

PoE Port Sequence

Product Benefits – PoE Alive-Check

◆ Intelligent Powered Device Alive-Check

- ✓ The WGSW-48040HP series can be configured to **monitor connected PD (Powered Device) status in real-time** via ping action.
- ✓ Once the PD stops working and responding, the WGSW-48040HP series will resume the PoE port power and bring the PD back to work.

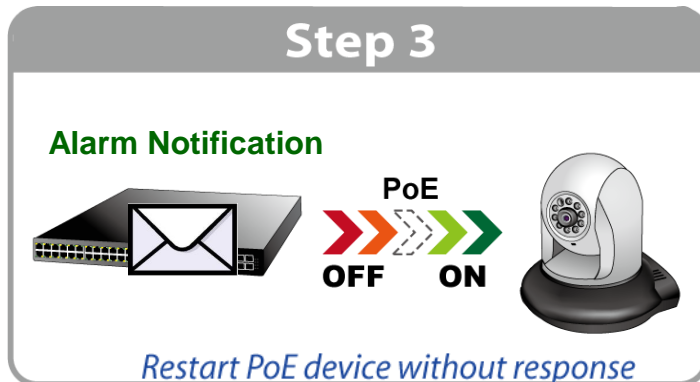
Step 1



Step 2



Step 3



Step 4



Product Benefits – Scheduled Power Recycle

- Allows each of the connected PoE powered device to reboot at a specified time each week. Therefore, it will reduce the chance of powered device crash resulting from buffer overflow.

What we do:
Auto maintain PoE devices operating with the best performance

Profile: Profile 1

End Hour	End Min	PoE	Reboot Enable
00	0	OFF	OFF

Add New Rule Save

ON

Automatically Reboot Every Friday 23:00

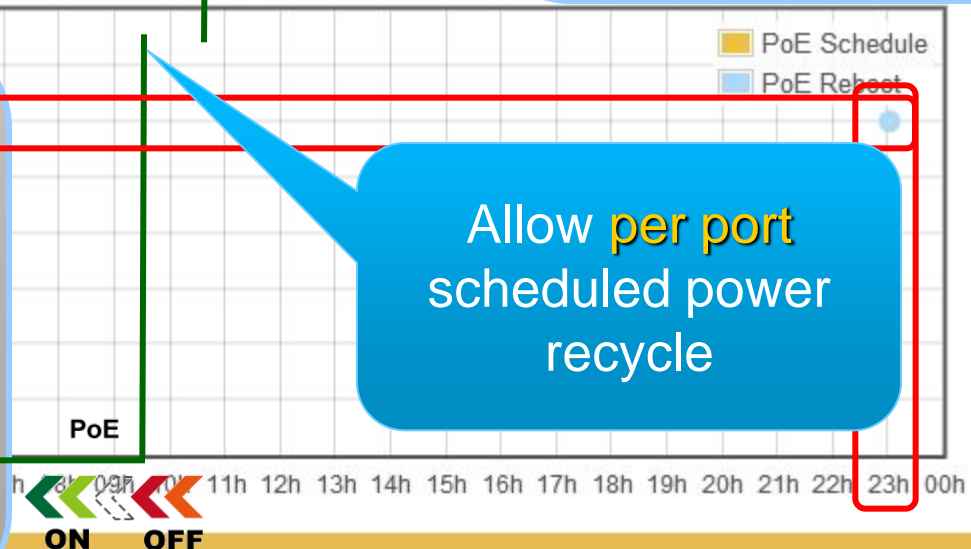
CPU/Buffer Load 85%

Automatically Reboot Every Monday 03:00

ON
OFF

CPU/Buffer Load 10%

Allow per port scheduled power recycle

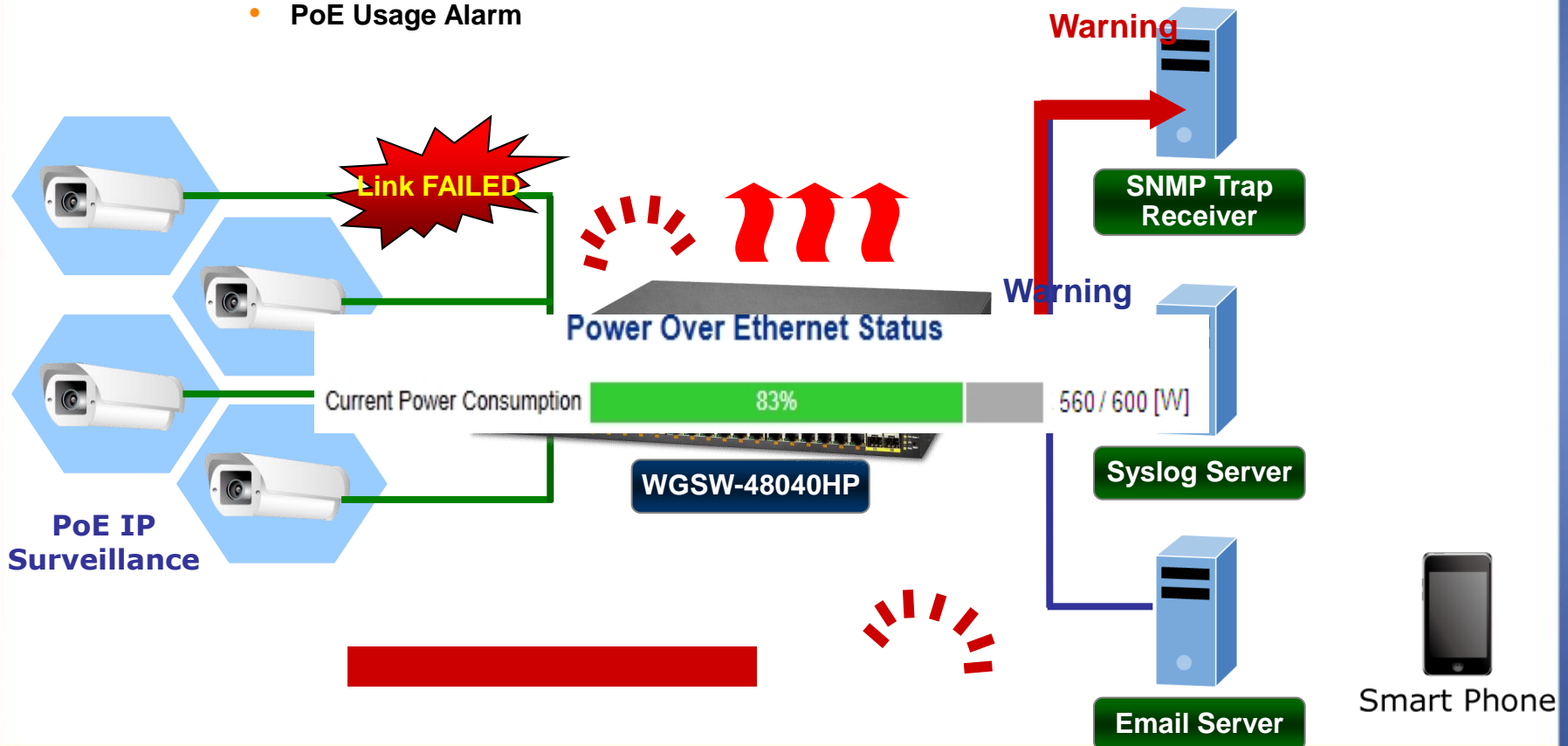


Product Benefits – Event Alarm

◆ Real-time Event Alarm

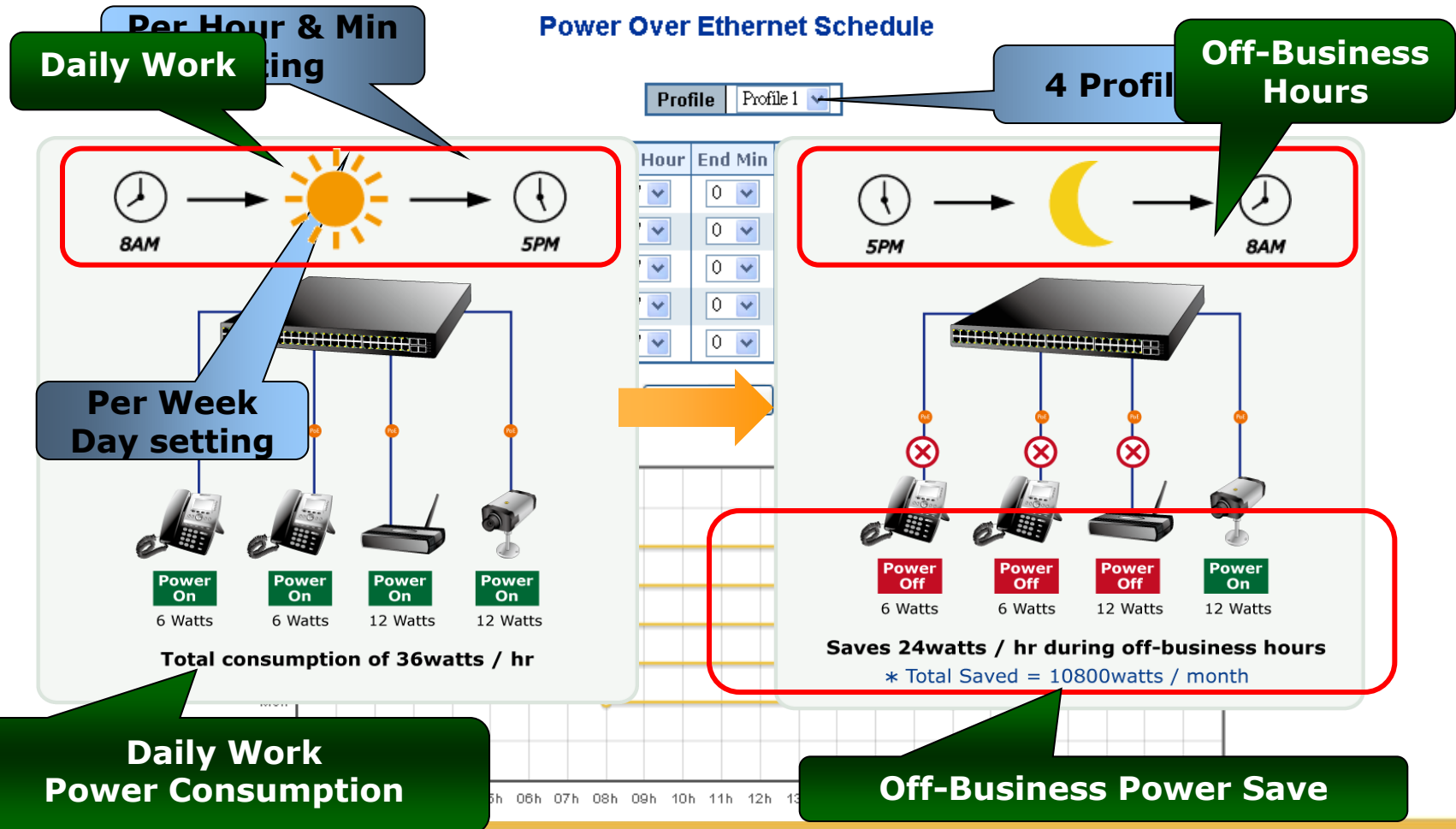
✓ SNMP Trap / Syslog / Email notification

- PoE Port Link Fault Alarm
- Temperature Threshold Alarm
- PoE Usage Alarm



Product Benefits – PoE Schedule

- PoE Schedule is a PoE management function for administrator **scheduling to turn on or turn off PoE device** and saving electricity rate.



Product Benefits – PoE Sequence

- ◆ After the function is enabled and the whole system program has finished running, the PoE port will power up in sequence.

Advantages:

- Avoid the sudden electrical shock that can cause the PD or Switch to break down
- Avoid the switch to detect and analyze the PD devices incorrectly

PoE UP Sequential Mode



Sequential Power up Option	Enable <input type="button" value="v"/>
Sequential Power up Interval	5 <input type="text"/> (1 ~ 30) seconds
Sequential Power up Port Option	By port <input type="button" value="v"/>

Product Benefits – Cisco-like Command

- ◆ Console command is CISCO-like, which allows users to make it work more easily.

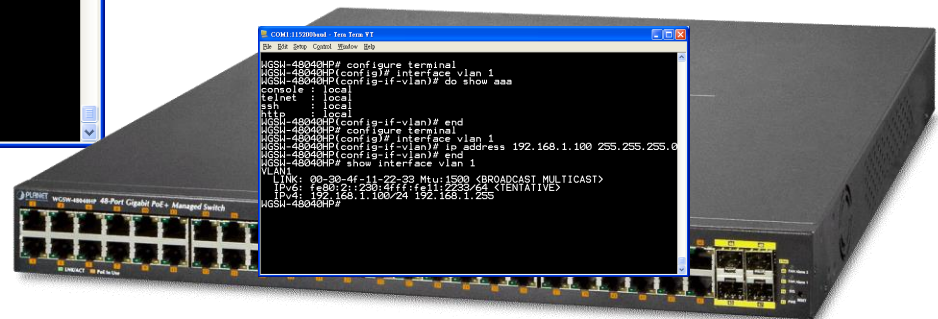
```
COM1:115200baud - Tera Term VT
File Edit Setup Control Window Help

WGSW-48040HP# configure terminal
WGSW-48040HP(config)# interface vlan 1
WGSW-48040HP(config-if-vlan)# do show aaa
console : local
telnet : local
ssh : local
http : local
WGSW-48040HP(config-if-vlan)# end
WGSW-48040HP# configure terminal
WGSW-48040HP(config)# interface vlan 1
WGSW-48040HP(config-if-vlan)# ip address 192.168.1.100 255.255.255.0
WGSW-48040HP(config-if-vlan)# end
WGSW-48040HP# show interface vlan 1
VLAN1
  LINK: 00-30-4f-11-22-33 Mtu:1500 <BROADCAST MULTICAST>
  IPv6: fe80::2::230:4fff:fe11:2233/64 <TENTATIVE>
  IPv4: 192.168.1.100/24 192.168.1.255
WGSW-48040HP#
```

```
COM1:115200baud - Tera Term VT
File Edit Setup Control Window Help

WGSW-48040HP(config-if)# exit
WGSW-48040HP(config)# exit
WGSW-48040HP# show ip interface brief
-----
Vlan Address Method Status
-----
1 192.168.0.100/24 Manual DOWN
WGSW-48040HP# show interface GigabitEthernet 1/1 capabilities

GigabitEthernet 1/1 Capabilities:
SFP Type: None
SFP Vendor name:
SFP Vendor PN:
SFP Vendor revision:
WGSW-48040HP# configure terminal
WGSW-48040HP(config)# interface GigabitEthernet 1/1
WGSW-48040HP(config-if)# flowcontrol on
WGSW-48040HP(config-if)#
```



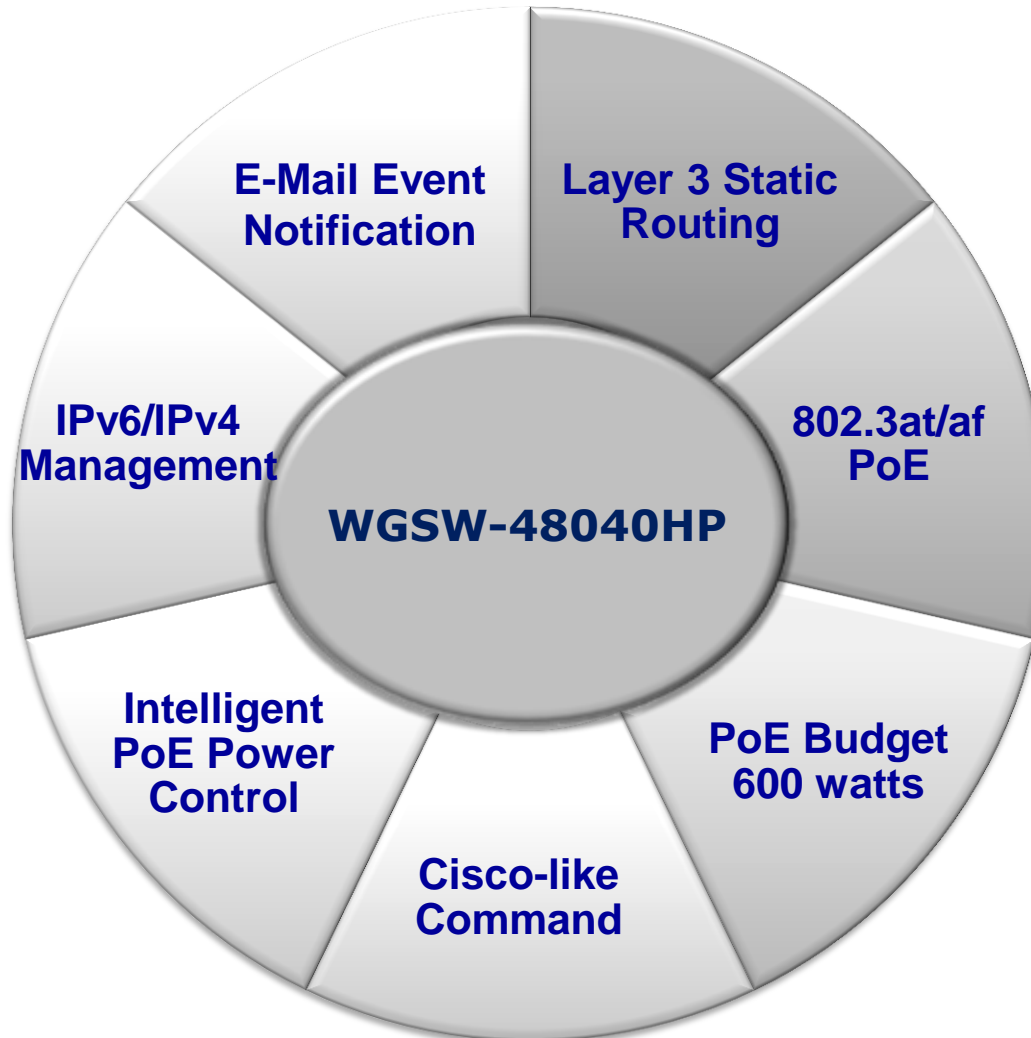
Product Benefits – Hardware-based Layer 3 Accelerator

Hardware Accelerator



Wire-Speed VLAN Routing

Product Key Features



Product Features

◆ Quality of Service

- ✓ **8** priority queues on all switch ports
- ✓ Traffic Classification by:
 - 802.1p CoS
 - IP TOS/**DSCP**/Precedence of IPv4 / IPv6 packets
 - **IP TCP/UDP** port number
 - Typical network applications
- ✓ **Ingress Shaper** and **Egress Rate Limit** per port bandwidth control
- ✓ **Strict priority** and **Weighted Round Robin (WRR)** CoS policies
- ✓ Traffic-policing policies on the switch port
- ✓ **DSCP remarking**

Product Features

- ◆ Excellent Traffic Control guarantees the best performance in Voice and Video conferencing transmission.
 - ✓ **Large file transfers**
 - ✓ **High performance servers**
 - ✓ **Video conferencing**
 - ✓ **Voice over IP**
 - ✓ **Skype Phone, MSN Phone communication**
 - ✓ **Multicast streaming**



Product Features

◆ Multicast

- ✓ Supports IGMP Snooping v1, v2 and **v3**
- ✓ Supports MLD Snooping v1 and **v2**
- ✓ Querier mode support
- ✓ IGMP Snooping filtering
- ✓ MLD Snooping filtering
- ✓ MVR (Multicast VLAN Registration)

◆ Supports Link Aggregation

- ✓ IEEE 802.3ad Link Aggregation Control Protocol (LACP)
- ✓ Cisco ether-channel (Static Trunk)
- ✓ 24 trunk groups, up to 8 ports per trunk group
- ✓ Up to 16Gbps bandwidth (Full Duplex Mode)

Product Features

◆ Security

✓ Network Access Authentication mechanism

- IEEE 802.1x Port-based authentication for user identity control
- **MAC-based** authentication for easy deployment
- RADIUS / **TACACS+** / Local profile

✓ Access Control List (ACL)

- IP-based filtering to permit or deny traffic
- MAC-based filtering to permit or deny traffic

✓ Management **Source MAC / IP address binding** to prevent unauthorized intruder

✓ 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

Product Features

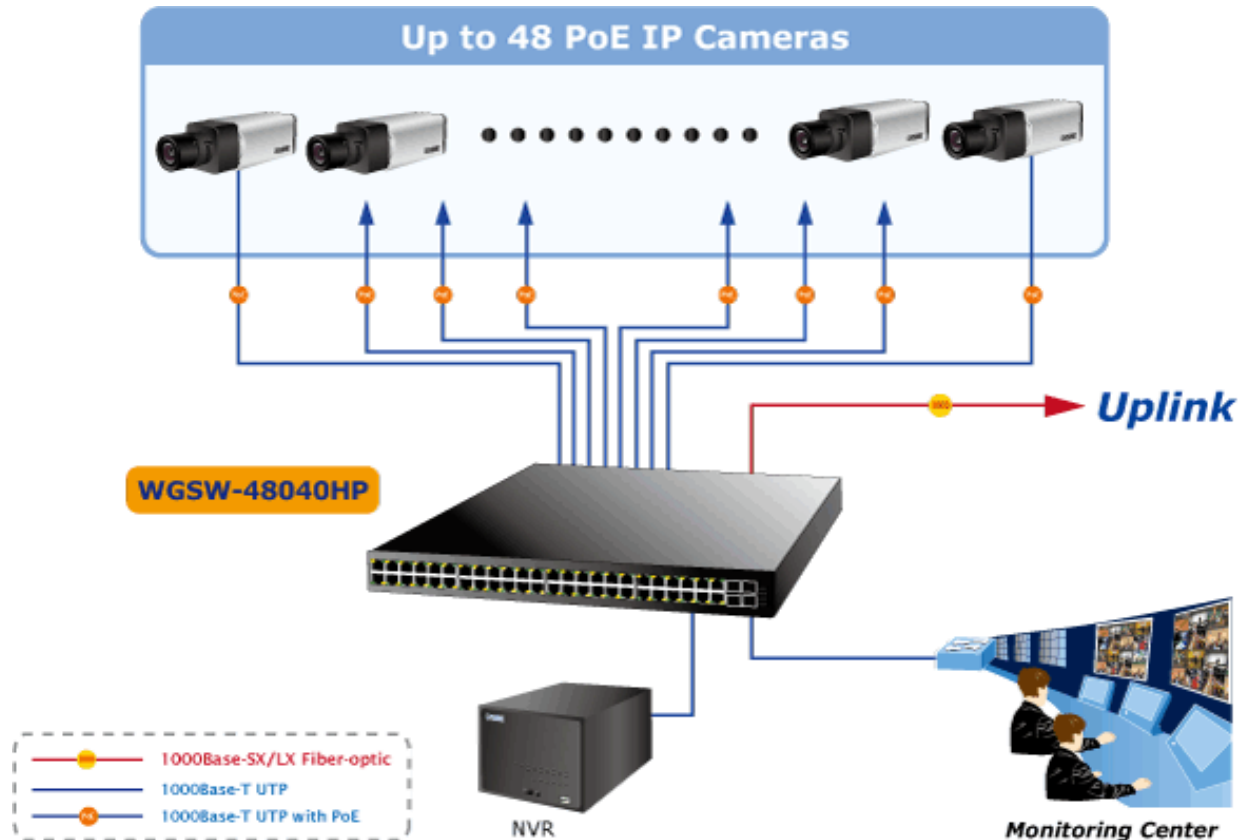
◆ Management Tools

- ✓ Four RMON groups (history, statistics, alarms and events)
- ✓ IPv6 IP Address / NTP / DNS management
- ✓ Built-in Trivial File Transfer Protocol (TFTP) client
- ✓ Firmware upload/download via HTTP / TFTP
- ✓ DHCP Relay
- ✓ DHCP Option82
- ✓ User Privilege levels control
- ✓ NTP (Network Time Protocol)
- ✓ Link Layer Discovery Protocol (LLDP)
- ✓ SFP-DDM (Digital Diagnostic Monitor)
- ✓ Cable Diagnostic technology provides the mechanism to detect and report potential cabling issues
- ✓ PLANET Smart Discovery Utility for deployment management

Applications

◆ High Density of IP Surveillance Network

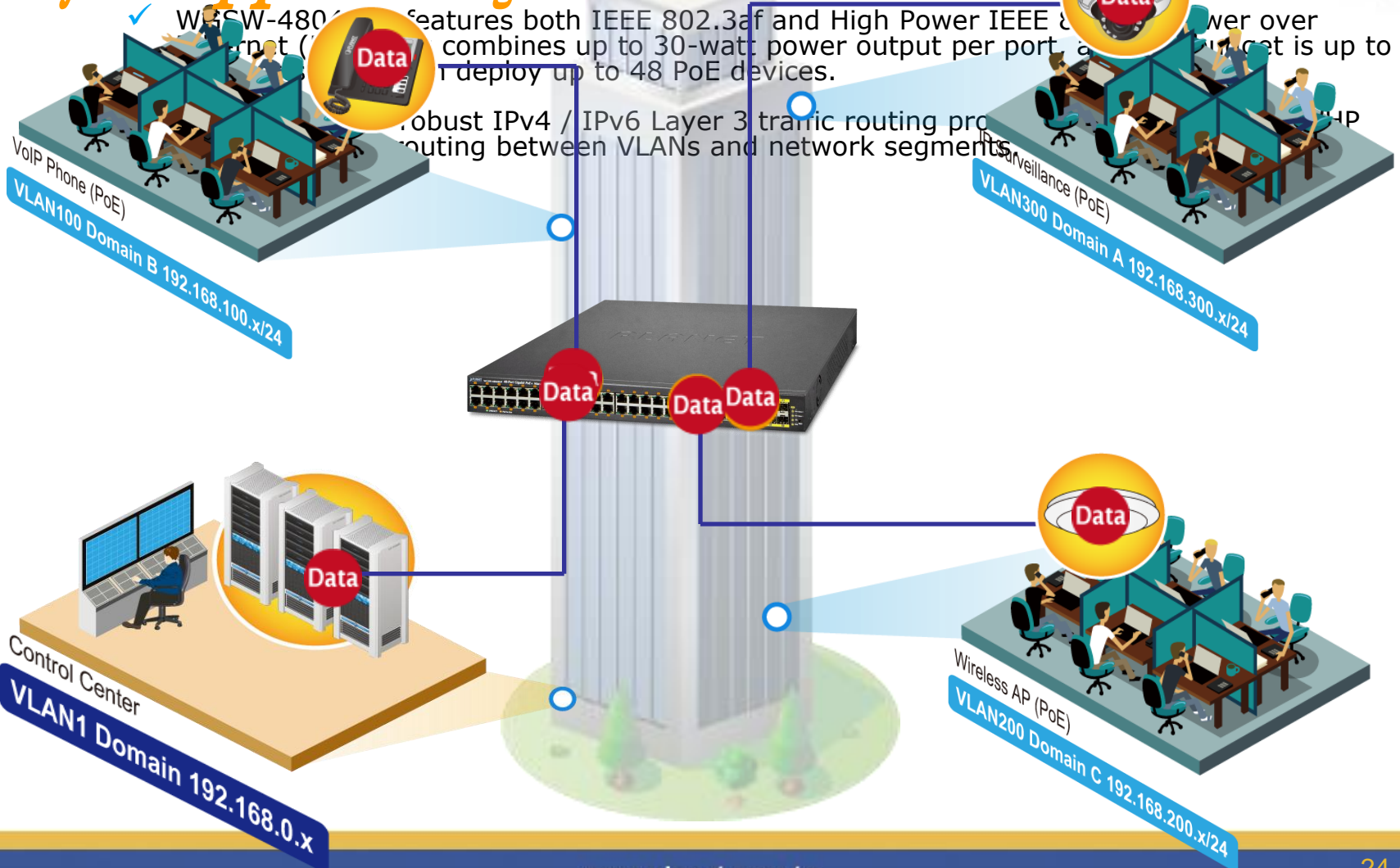
- ✓ Providing up to 48 PoE+, in-line power interfaces. It can work with 8/16/32-channel NVR and surveillance software to perform comprehensive security monitoring.






Applications

Layer 3 *Static Routing*




Layer 3 Static Routing and PoE Application



Product Comparison




Brand	PLANET	Cisco	HP
Model Name	WGSW-48040HP	2960S-48LPS-L	2530-48G-POE(JA772A)
Outlook			
Feature	L2+ Managed	L2 Managed	L2 Managed
Interface			
10/100/1000Base-T	48	48	48
100FX/1000SXLX SFP Slots	4 (Combo)	4	4
802.3at PoE Ports	48	48	48
802.3af PoE Ports	Compatible	Compatible	Compatible
Console	RJ-45 / RS-232	RS-232	RJ-45 / RS-232
Power over Ethernet			
PoE Standard	IEEE 802.3af / 802.3at PoE / PSE	IEEE 802.3af / 802.3at PoE	IEEE 802.3af / 802.3at
PoE Power Supply Type	End-Span	-	-
PoE Power Output	Per port 52V DC, Max. 30.8 Watts	Max. 30 Watts	Max. 30 Watts
Power Pin Assignment	1/2(+), 3/6(-)	-	-
PoE Power Budget	600 watts Max.	370 watts Max.	382 watts Max.
PD Alive Check	■	-	-
PoE Schedule	■	-	-
PoE PD Power Reboot Schedule	■	-	-
Layer 3 Functions			
IP Interfaces	128	-	-
Routing Table	32	-	-
Routing Protocol	IPv4 Static Routing IPv6 Static Routing	-	-

Product Comparison

Brand	PLANET	Cisco	HP
Model Name	WGSW-48040HP	2960S-48LPS-L	2530-48G-POE(JA772A)
Outlook			
Layer 2 Features			
Switch Fabric	96Gbps / non-blocking	104Gbps / non-blocking	104Gbps / non-blocking
Switch Throughput	71.4MppsMpps@64Bytes	77.4MppsMpps@64Bytes	77.4MppsMpps@64Bytes
MAC Address Table	16K	8K	16K
Jumbo Frame	10056 Bytes	9216 Bytes	9220Bytes
Bandwidth Control	In / Out	In / Out	In / Out
Link Aggregation	Static	24 Trunks / 8 Ports	■
	LACP	■	■
VLAN	802.1Q	■	■
	Port-Based	■	■
	Portocol-Based	■	-
	MAC Based	■	-
	IP-Subnet Based	■	-
	Q-in-Q	■	■
	GVRP	■	-
	Voice VLAN	■	■
	MVR	■	■
Private VLAN	■	■	
Active VLAN (1 q/port)	255	255	512
Spanning Tree	802.1D/1w/1s	802.1D/1w/1s	802.1D/1w/1s
STP BPDU Guard	■	■	■
BPDU Filtering	■	■	-
Port Mirror	■	-	■

Product Comparison



Brand		PLANET	Cisco	HP
Model Name		WGSW-48040HP	2960S-48LPS-L	2530-48G-P0E(JA772A)
Outlook				
Multicast				
IGMP Snooping		V1, V2, V3	V1, V2, V3	V1, V2, V3
IGMP Query mode		■	■	-
IGMP Filtering		■	■	-
MLD Filtering		■	-	-
QoS				
QoS	L2 802.1p	■ / 8 queue	■ / 4 queue	■ / 4 queue
	L3 IP TOS / DSCP	■	- / ■	■
	L4 TCP/UDP Port	■	-	■
	Strict / WRR	■ / ■	-	■ / ■
	DSCP Remarking	■	■	-
Security				
802.1X Port Base		■	■	■
ACL		L2 / L3 / L4	■	■
IP / MAC Security		Static MAC / Binding	■	Static MAC / Binding
SSH / SSL		■ / ■	■ / -	■ / ■
IP Source Guard		■	■	-
DoS Protection		■	-	-
Management				
Management & Configuration		WEB, Telnet, Console	WEB, Telnet, Console	WEB, Telnet, Console
SNMP V1, V2C, V3		■	■	■
DHCP Relay		■	■	-
SMTP Event Alarm		■	-	-
Cable Diagnostic		■	■	-
Power Savin	Link down detect	■	-	-
	Length detect	■	-	-

Appendix Sales Target

◆ Target Markets

- ✓ **IP Surveillance Integrator, Wireless Service Provider**
- ✓ **Enterprise / SMB Office / Government / Campus**
- ✓ **ISP / Telecom / Service Provider**
- ✓ **System Integrator**

◆ Profitable Products

- ✓ **The following 30-watt High Power Switches / Injector Hubs are potential to all customers:**
 - WGSW-20160HP
 - WGSW-2620HP
 - SGSW-24040HP
 - WGSW-24040HP / WGSW-24040HP4
 - HPOE-2400G

Appendix

◆ Available Gigabit Ethernet Fiber Optic SFP Modules:

Gigabit Ethernet Transceiver (1000Base-X SFP)

Model	Speed (Mbps)	Connector Interface	Fiber Mode	Distance	Wavelength (nm)	Operating Temp.
MGB-GT	1000	Copper	--	100m	--	0 ~ 60 ℃
MGB-SX	1000	LC	Multi Mode	550m	850nm	0 ~ 60 ℃
MGB-SX2	1000	LC	Multi Mode	2km	1310nm	0 ~ 60 ℃
MGB-LX	1000	LC	Single Mode	10km	1310nm	0 ~ 60 ℃
MGB-L30	1000	LC	Single Mode	30km	1310nm	0 ~ 60 ℃
MGB-L50	1000	LC	Single Mode	50km	1550nm	0 ~ 60 ℃
MGB-L70	1000	LC	Single Mode	70km	1550nm	0 ~ 60 ℃
MGB-L120	1000	LC	Single Mode	120km	1550nm	0 ~ 60 ℃
MGB-TSX	1000	LC	Multi Mode	550m	850nm	-40 ~ 75 ℃
MGB-TLX	1000	LC	Single Mode	10km	1310nm	-40 ~ 75 ℃
MGB-TL30	1000	LC	Single Mode	30km	1310nm	-40 ~ 75 ℃
MGB-TL70	1000	LC	Single Mode	70km	1550nm	-40 ~ 75 ℃

Appendix

◆ Available Gigabit Ethernet WDM Fiber Optic SFP Modules:

Gigabit Ethernet Transceiver (1000Base-BX, Single Fiber Bi-Directional SFP)

Model	Speed (Mbps)	Connector Interface	Fiber Mode	Distance	Wavelength (TX)	Wavelength (RX)	Operating Temp.
MGB-LA10	1000	WDM(LC)	Single Mode	10km	1310nm	1550nm	0 ~ 60 ℃
MGB-LB10	1000	WDM(LC)	Single Mode	10km	1550nm	1310nm	0 ~ 60 ℃
MGB-LA20	1000	WDM(LC)	Single Mode	20km	1310nm	1550nm	0 ~ 60 ℃
MGB-LB20	1000	WDM(LC)	Single Mode	20km	1550nm	1310nm	0 ~ 60 ℃
MGB-LA40	1000	WDM(LC)	Single Mode	40km	1310nm	1550nm	0 ~ 60 ℃
MGB-LB40	1000	WDM(LC)	Single Mode	40km	1550nm	1310nm	0 ~ 60 ℃
MGB-LA60	1000	WDM(LC)	Single Mode	60km	1310nm	1550nm	0 ~ 60 ℃
MGB-LB60	1000	WDM(LC)	Single Mode	60km	1550nm	1310nm	0 ~ 60 ℃
MGB-TLA10	1000	WDM(LC)	Single Mode	10km	1310nm	1550nm	-40 ~ 75 ℃
MGB-TLB10	1000	WDM(LC)	Single Mode	10km	1550nm	1310nm	-40 ~ 75 ℃
MGB-TLA20	1000	WDM(LC)	Single Mode	20km	1310nm	1550nm	-40 ~ 75 ℃
MGB-TLB20	1000	WDM(LC)	Single Mode	20km	1550nm	1310nm	-40 ~ 75 ℃
MGB-TLA40	1000	WDM(LC)	Single Mode	40km	1310nm	1550nm	-40 ~ 75 ℃
MGB-TLB40	1000	WDM(LC)	Single Mode	40km	1550nm	1310nm	-40 ~ 75 ℃
MGB-TLA60	1000	WDM(LC)	Single Mode	60km	1310nm	1550nm	-40 ~ 75 ℃
MGB-TLB60	1000	WDM(LC)	Single Mode	60km	1550nm	1310nm	-40 ~ 75 ℃

Appendix

◆ Available **Fast Ethernet Fiber Optic SFP Modules:**

Fast Ethernet Transceiver (100Base-X SFP)

Model	Speed (Mbps)	Connector Interface	Fiber Mode	Distance	Wavelength (nm)	Operating Temp.
MFB-FX	100	LC	Multi Mode	2km	1310nm	0 ~ 60 ℃
MFB-F20	100	LC	Single Mode	20km	1310nm	0 ~ 60 ℃
MFB-F40	100	LC	Single Mode	40km	1310nm	0 ~ 60 ℃
MFB-F60	100	LC	Single Mode	60km	1310nm	0 ~ 60 ℃
MFB-F120	100	LC	Single Mode	120km	1550nm	0 ~ 60 ℃
MFB-TFX	100	LC	Multi Mode	2km	1310nm	-40 ~ 75 ℃
MFB-TF20	100	LC	Single Mode	20km	1550nm	-40 ~ 75 ℃

Fast Ethernet Transceiver (100Base-BX, Single Fiber Bi-Directional SFP)

Model	Speed (Mbps)	Connector Interface	Fiber Mode	Distance	Wavelength (TX)	Wavelength (RX)	Operating Temp.
MFB-FA20	100	WDM(LC)	Single Mode	20km	1310nm	1550nm	0 ~ 60 ℃
MFB-FB20	100	WDM(LC)	Single Mode	20km	1550nm	1310nm	0 ~ 60 ℃
MFB-TFA20	100	WDM(LC)	Single Mode	20km	1310nm	1550nm	-40 ~ 75 ℃
MFB-TFB20	100	WDM(LC)	Single Mode	20km	1550nm	1310nm	-40 ~ 75 ℃
MFB-TFA40	100	WDM(LC)	Single Mode	40km	1310nm	1550nm	-40 ~ 75 ℃
MFB-TFB40	100	WDM(LC)	Single Mode	40km	1550nm	1310nm	-40 ~ 75 ℃

Appendix

◆ Related PoE Products:

✓ IP Surveillance

- ✓ **ICA-1200** Full HD PoE Cube IP Camera
- ✓ **ICA-2200** Full HD PoE Box IP Camera
- ✓ **ICA-2250VT** Industrial PoE Plus Outdoor IR IP Camera
- ✓ **ICA-2500** 5 Mega-pixel PoE Box IP Camera
- ✓ **ICA-3250V** Full HD Outdoor IR PoE IP Camera
- ✓ **ICA-3350V** 3 Mega-pixel Vari-focal Bullet IR IP Camera
- ✓ **ICA-4200V** Full HD 20M IR Vari-focal Dome IP Camera
- ✓ **ICA-4500V** 5 Mega-pixel 20M IR Vari-focal Dome IP Camera
- ✓ **ICA-5250** Full HD Ultra-mini Vandal Dome
- ✓ **ICA-5250V** 3 Mega-pixel Vandalproof IR IP Camera
- ✓ **ICA-HM620** 2 Mega-pixel PoE Plus Speed Dome Internet Camera



Appendix

◆ Related PoE Products:

✓ Wireless

- ✓ **WNAP-C3220** 802.11n Wireless Ceiling Mount PoE Access Point
- ✓ **WNAP-1120PE** 802.11n Wireless Access Point with PoE
- ✓ **WNAP-W2200** 802.11n 300Mbps In-Wall Access Point w/ USB Charger (EU Type)
- ✓ **WNAP-C7400** 900Mbps Dual Band Ceiling Mount Wireless Access Point

✓ VoIP

- ✓ **VIP-256PT** 802.3af PoE SIP IP Phone
- ✓ **VIP-2020PT** Enterprise HD PoE IP Phone (2-Line)
- ✓ **VIP-5060PT** Professional HD PoE IP Phone (6-Line)



ACTIVATING IP POWER

