

Catalogue

Industrial PoE Switch

Fluent

Stable

Industrial

Looped network

Smart

Optical Network Video Technology (Shenzhen) Co.,Ltd

14-year experience of data transmission contributes to ONV

Industrial PoE Switch



## Product Description

OPTICAL NETWORK VIDEO TECHNOLOGIES (SHENZHEN) CO., LTD is a high-tech enterprise in research and development, production, sales and service. The headquarter is located in Terra Building in Futian District of Shenzhen in China, with the communication products covering global market.

ONV was established in 2003, focusing on industrial communications for fourteen years, with product ranges from the earliest industrial data communications products to the current industrial PoE products. ONV always adheres to the business philosophy of "Emphasis the detail & Pursuit of effectiveness". Meanwhile, with the strategy of "the Professional Industrial Internet Communication Expert" and technical guide of " Embedded, Intelligent, Systematic, Integrated ", ONV combines the foreign advanced information technology, management methods and business experience with the specific reality of domestic enterprises, and providing clients with a reliable industrial Internet communications products and embedded innovation solutions as well as a comprehensive system, hardware, software, user-centric design services. The ONV industrial communications products are related to several professional fields including industrial Ethernet communications, industrial Ethernet power supply, industrial fiber access, industrial communications management platform and other fields. There are independent intellectual rights for the main products, and also with many other international certifications including CE, FCC and RoHS etc, which is meeting several industry standards of the smart grid, intelligent transportation and new energy etc.

## Product Model and Appearance

### ONV-IPS31032PF



- 2\*10/100M PoE +1\*155M SC Fiber Port
- Dual Power Input ( DC:48-57V)
- Packet Forwarding Rate : 0.47Mpps
- Switching Capacity : 1.2Gbps

### ONV-IPS31064P



- 4\*10/100M PoE +2\*10/100MRJ45 Ports
- Dual Power Input ( DC:48-57V)
- Packet Forwarding Rate : 0.89Mpps
- Switching Capacity : 1.8Gbps

### ONV-IPS31074PF-S



- 4\*10/100M PoE +1\*155M SC Fiber Port
- Dual Power Input ( DC:48-57V)
- Packet Forwarding Rate : 1.04Mpps
- Switching Capacity : 1.8Gbps

### ONV-IPS31084PF-S



- 4\*10/100M PoE+2\*155M SC Fiber Ports
- Dual Power Input ( DC:48-57V)
- Packet Forwarding Rate : 1.19Mpps
- Switching Capacity : 1.8Gbps

**ONV-IPS31108P**

- 8\*10/100M PoE+2\*10/100M RJ45 Ports
- Dual Power Input ( DC:48-57V)
- Packet Forwarding Rate : 1.48Mpps
- Switching Capacity : 3.2Gbps

**ONV-IPS31108PG**

- 8\*10/100M PoE+2\*10/100/1000M RJ45 Ports
- Dual Power Input ( DC:48-57V)
- Packet Forwarding Rate : 4.17Mpps
- Switching Capacity : 5.6Gbps

**ONV-IPS31108PFB**

- 8\*10/100M PoE+2\*1000M TP/SFP Combo Uplink Ports
- Dual Power Input ( DC:48-57V)
- Packet Forwarding Rate : 4.17Mpps
- Switching Capacity : 5.6Gbps

**ONV-IPS33032PF**

- 2\*10/100/1000M PoE+1\*1.25G SFP Fiber Port
- Dual Power Input ( DC:48-57V)
- Packet Forwarding Rate : 4.46Mpps
- Switching Capacity : 8Gbps

**ONV-IPS33042PF**

- 2\*10/100/1000M PoE+2\*1.25G SFP Fiber Ports
- Dual Power Input ( DC:48-57V)
- Packet Forwarding Rate : 5.95Mpps
- Switching Capacity : 8Gbps

**ONV-IPS33054PF**

- 4\*10/100/1000M PoE + 1\*1.25G SFP Fiber Port
- Dual Power Input ( DC:48-57V)
- Packet Forwarding Rate : 7.44Mpps
- Switching Capacity : 12Gbps

**ONV-IPS33064PF**

- 4\*10/100/1000M PoE+2\*1.25G SFP Fiber Ports
- Dual Power Input ( DC:48-57V)
- Packet Forwarding Rate : 8.93Mpps
- Switching Capacity : 12Gbps

**ONV-IPS33064PFM**

- Managed 4\*10/100/1000M PoE + 2\*1.25G SFP Fiber Ports
- Dual Power Input ( DC:48-57V)
- Packet Forwarding Rate : 8.93Mpps
- Switching Capacity : 12Gbps

**ONV-IPS33108PF**

- 8\*10/100/1000M PoE+ 2\*1.25G SFP Fiber Ports
- Dual Power Input ( DC:48-57V)
- Packet Forwarding Rate : 14.88Mpps
- Switching Capacity : 48Gbps

**ONV-IPS33108PFM**

- Managed 8\*10/100/1000M PoE+ 2\*1.25G SFP Fiber Ports
- Dual Power Input ( DC:48-57V)
- Packet Forwarding Rate : 14.88Mpps
- Switching Capacity : 20Gbps

**ONV-IPS33148PFM**

- Managed 8\*10/100/1000M PoE+ 2\*10/100/1000M+2\*1.25G SFP Fiber Ports
- Dual Power Input ( DC:48-57V)
- Packet Forwarding Rate : 20.83Mpps
- Switching Capacity : 52Gbps

**ONV-IPS33168PFM**

- Managed 8\*10/100/1000M PoE+ 8\*1.25G SFP Fiber Ports
- Dual Power Input ( DC:48-57V)
- Packet Forwarding Rate : 23.81Mpps
- Switching Capacity : 52Gbps

**ONV-IPS33026PFM**

- Managed 24\*10/100/1000M PoE + 2\*1.25G TP/SFP Combo + 2\*1.25G SFP+ Fiber Ports
- AC Power Supply 400W
- Packet Forwarding Rate : 38.69Mpps
- Switching Capacity : 52Gbps

**ONV-IPS33026PFM-at**

- Managed 24\*10/100/1000M PoE + 2\*1.25G TP/SFP Combo + 2\*1.25G SFP+ Fiber Ports
- AC Power Supply 600W
- Packet Forwarding Rate : 38.69Mpps
- Switching Capacity : 52Gbps

**ONV-IPS36024PFM**

- Managed 24\*10/100/1000M PoE+24\*10/100/1000M+4\*10G SFP+ Fiber Ports
- AC Power Supply 400W
- Packet Forwarding Rate : 131Mpps
- Switching Capacity : 184Gbps

**ONV-IPS36032PFM**

- Managed 32\*10/100/1000M PoE+12\*10/100/1000M+4\*10G SFP+ Fiber Ports
- AC Power Supply 600W
- Packet Forwarding Rate : 131Mpps
- Switching Capacity : 184Gbps

**ONV-IPS36048PFM**

- Managed 48\*10/100/1000M PoE + 4\*10G SFP+ Fiber Ports
- AC Power Supply 600W
- Packet Forwarding Rate : 131Mpps
- Switching Capacity : 184Gbps

# Product Feature

- 01 All Port support line-speed forwarding mode.
- 02 Support V-Ring (Looped Network redundancy technology), ERPS Self-healing time < 20ms (Managed Series Only)
- 03 Support Auto MDI/MDIX
- 04 Operation Temperature ranges from -40°C to 75 -40°C
- 05 Low consumption fanless design. (Except for the IP30 housing)
- 06 IP40
- 07 Support redundant power input, with overload anti-reverse protection
- 08 Support 802.1X, VLAN, LLDP and broadcast storm suppression
- 09 Support loop detection and binding for port + IP + MAC
- 10 Supports port traffic real-time monitoring and abnormal traffic warning
- 11 Support Web visualization interface / CLI Dos command line configuration / SNMP management device
- 12 Support standard IEEE802.3af / at and PoE network management function
- 13 With managed function, the switch can meet LLDP and SNMP. Also it can manage and query for whole network nodes through software NMS.

## New energy-saving design, leading green communications

- The IPS31000 / IPS33000 follows the EEE 802.3az (Energy Efficient Ethernet) to provide low-power idle mode for ports and significantly reduces power consumption.
- The IPS31000 / IPS33000 can adjust the output power according to the cable length and support port sleep when there is no connection.
- Fanless design reduces the power consumption of the machine eliminates noise annoyance.

## Non-blocking high-speed forwarding

- All port of the IPS31000 / IPS33000 series switch provide Layer 2 line-speed switching to ensure that all ports are forwarded without blocking.
- IPS31000 / IPS33000 support "Fiber + RJ45" GE Uplink port, to facilitate flexible access to customers.
- The IPS31000 / IPS33000 series offer 1K-32K MAC address with multi-function selection, which is greatly facilitating the user's expansion and application.

## Convenient management and maintenance

- Managed series provide convenient management and maintenance, with simple operation by long pressing the reset button in front of housing to restore the factory configuration.
- The IPS33000FM network managed switch support configuration of devices by SNMP network management, which facilitates the centralized device management of small and medium-sized enterprise.
- The IPS33000FM network management switch supports SNMP v1 / v2c and Web management, and also supports the command line (CLI) and console port configuration.

## Excellent Security

- The IPS33000FM series features with 802.1x, RADIUS, SSH, ACL, DHCP, and ARP and supports MAC address filtering and port filtering, with which can effectively prevent hackers, virus attacks and provide safe and reliable network services.

## Powerful networking and bandwidth scalability.

- IPS33000FM provides LACP, STP / RSTP / MSTP and other functions, which can effectively implement link expansion and backup. Through the LLDP function and NMS management software, it keeps the network safe.

## Technical Specification

### Industrial PoE Switch Series

Type	10/100M Industrial PoE Switch Series 01			
Model	ONV-IPS31032PF	ONV-IPS31064P	ONV-IPS31074PF-S	ONV-IPS31084PF-S
Ethernet Interface	2*10/100MRJ45 Port +1*155M SC Fiber Port	4*10/100MRJ45 Port +2*10/100M RJ45 Port	6*10/100M RJ45 Port +1*155M SC Fiber Port	6*10/100M RJ45 Port +2*155M SC Fiber Port
MAC Address	2k	1K	1K	1K
PoE Port Numbers	2	4	4	8
PoE Standard	15.4W@ IEEE 802.3af ; 30W@IEEE802.3at			
Dimension(mm)	119*100*30		128*105*54	165*145*45
Input Power	DC 48~57 V			
Power Consumption	af ≤ 30W at ≤ 60W	af ≤ 60W at ≤ 120W		af ≤ 120W at ≤ 250W
Operation Temperature	-40 ° ~ 75 °C			
Operation Humidity	5% ~ 95%			
Cooling Method	Fanless, natural cooling			

Type	10/100M Industrial PoE Switch Series 02		
Model	ONV-IPS31108P	ONV-IPS31108PG	ONV-IPS31108PFB
Ethernet Interface	8*10/100MRJ45 Port +2*10/100M RJ45 Port	8*10/100M RJ45 Port +2*10/100/1000M RJ45 Port	8*10/100M RJ45 Port +2*10/100/1000M Combo TP/SFP
MAC Address	8K	16K	16K
PoE Port Numbers	8	8	8
PoE Standard	15.4W@ IEEE 802.3af ; 30W@IEEE802.3at		
Dimension (mm)	165*145*45		
Input Power	DC 48~57V		
Power Consumption	af ≤ 120W at ≤ 250W		
Operation Temperature	-40 ° ~ 75 °C		
Operation Humidity	5% ~ 95%		
Cooling Method	Fanless, natural cooling		

## Industrial PoE Switch Series

Type	10/100/1000M Industrial PoE Switch Series				
Model	ONV-IPS33032PF	ONV-IPS33042PF	ONV-IPS33054PF	ONV-IPS33064PF	ONV-IPS33108PF
Ethernet Interface	2*10/100/1000M+ 1*1.25G SFP	2*10/100/1000M+2* Fiber Port1.25G SFP Fiber Port	4*10/100/1000M +2*1000M SFP Fiber Port	4*10/100/1000M +2*1000M SFP Fiber Port	4*10/100/1000M+2 *1000M SFP Fiber Port
MAC Address	8K	8K	8K	8K	8K
PoE Port Numbers	2	4	4	4	8
PoE Standard	15.4W@ IEEE 802.3af ; 30W@IEEE802.3at				
Dimension (mm)	119*100*30		128*100*47		165*145*45
Input Power	DC 48~57 V				
Power Consumption	af ≤ 30W at ≤ 60W		af ≤ 60 W at ≤ 120 W		af ≤ 120W at ≤ 250W
Operation Temperature	-40 °C ~ 75 °C				
Operation Humidity	5% ~ 95%				
Cooling Method	Fanless, natural cooling				

Type	10/100/1000M Managed Industrial PoE Switch Series 01				
Model	ONV-IPS33108PFM	ONV-IPS33148PFM	ONV-IPS33168PFM	ONV-IPS36168PFM	ONV-IPS33026PFM
Ethernet Interface	8*10/100/1000M+2* 1.25G SFP Fiber Port	8*10/100/1000M+ 2*1.25G SFP Fiber Port	8*10/100/1000M +8*1.25G SFP Fiber Port	12*10/100/1000M+ 4*10G SFP+ Fiber Port	12*10/100/1000M+ 4*10G SFP+ Fiber Port
MAC Address	8K	8K	8K	32K	8K
PoE Port Numbers	8	8	8	8	24
PoE Standard	15.4W@ IEEE 802.3af ; 30W@IEEE802.3at				
Dimension (mm)	165*145*45	165*145*45	165*145*45	165*145*45	440 *290* 44.5
Input Power	DC 48~57 V				AC100 -240V
Power Consumption	af ≤ 12 0W at ≤ 25 0W				af ≤ 40 0W
Operation Temperature	- 40 °C ~ 75 °C				
Operation Humidity	5% ~ 95%				
Cooling Method	Fanless, natural cooling				

## Industrial PoE Switch Series

Type	10/100/1000M Managed Industrial PoE Switch Series 02			
Model	ONV-IPS33026PFM - at	ONV- IPS36024PFM	ONV- IPS36032PFM	ONV- IPS36048PFM
Ethernet Interface	12*10/100/1000M+4*10G SFP+Fiber Port	48*10/100/1000M+ 4*10G SFP+ Fiber Port	48*10/100/1000M+ 4*10G SFP+ Fiber Port	48*10/100/1000M+4*10G SFP+Fiber Port
MAC Address	8K	32K	32K	32K
PoE Port Numbers	24	24	32	48
PoE Standard	15.4W@ IEEE 802.3af ; 30W@IEEE802.3at			
Dimension (mm)	440*275*44.5	440*275*44.5	440*275*44.5	440*275*44.5
Power Input	AC100 - 240V 50 - 60Hz			
Power Consumption	at ≤ 600W	af ≤ 400W	af ≤ 500W	af ≤ 600W
Operation Temperature	- 40 °C ~ 75 °C			
Operation Humidity	5% ~ 95%			
Cooling Method	Fanless, natural cooling			



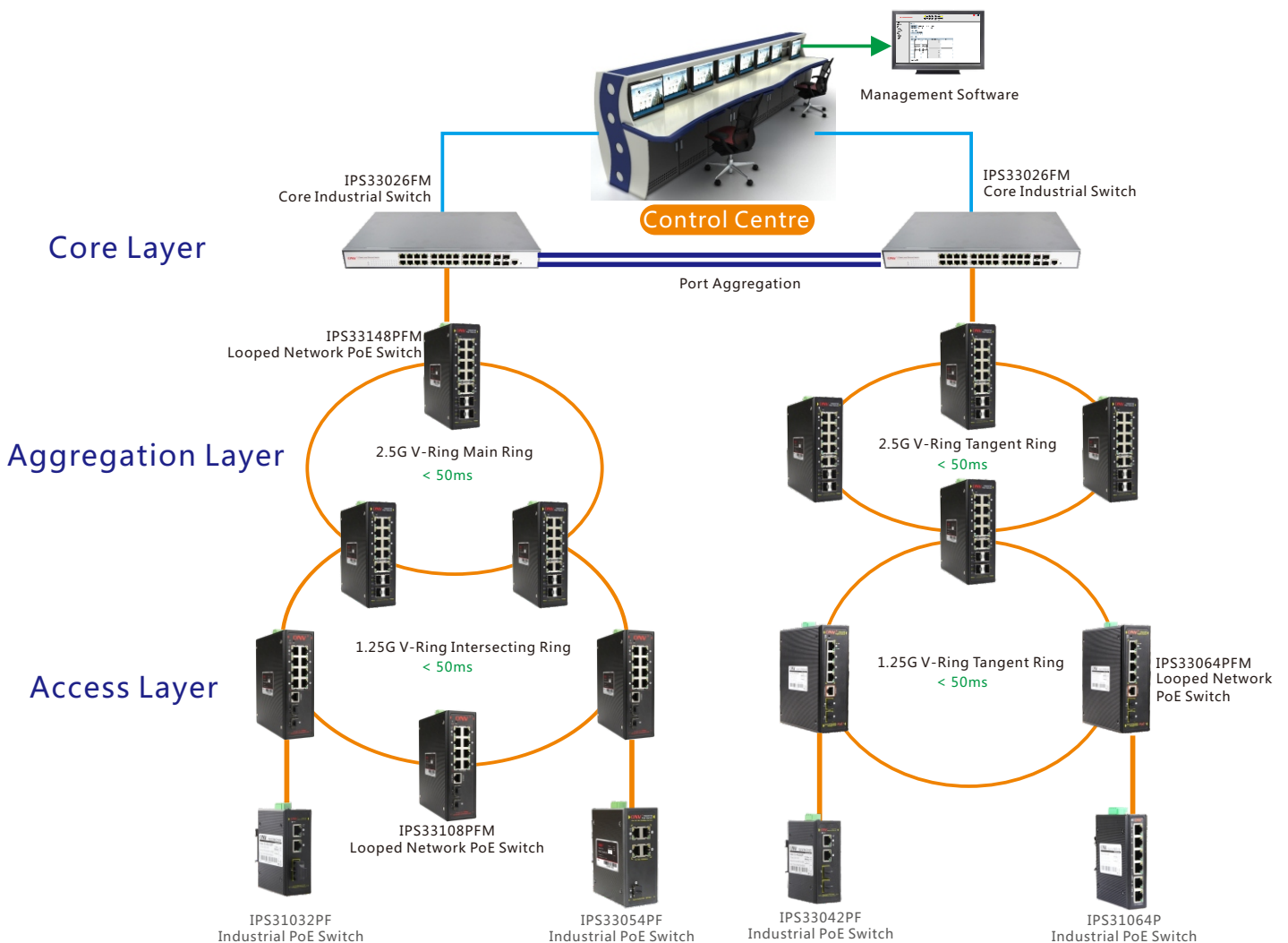
## WEB Management Feature

Function	Full Management Device
<b>Security features</b>	ACL MAC filtration based on port MAC Authentication 802.1X RADIUS Port Isolation port storm suppression System self-defense, prevent broadcast flow, ARP ICMP, TCP, Worm virus, DOS DHCP Snooping
<b>VLAN</b>	4K VLAN Access Port Trunk Port Hybrid Port VLAN Management
<b>QoS</b>	Priority and WRR scheduling methods 8 queues per port Queue scheduling according to 802.1p/DSCP
<b>STP</b>	STP(IEEE 802.1d) RSTP(IEEE 802.1w) MSTP(IEEE 802.1s) ERPS(G.8032)
<b>Multicast</b>	IGMP Snooping Internet (GroupManagement Protocol Snooping), 256 Groups Max Support users to quickly log out
<b>Routing characteristics</b>	Support IPv4, IPv6 static routing
<b>Port Aggregation</b>	Support 12 aggregation groups, max 8 ports for each group Support static LACP
<b>Port Mirroring</b>	Support port-based bidirectional traffic mirroring Mirror port supports Trunk
<b>Port bandwidth control</b>	Support speed limit on incoming and outgoing packets, min particle size is 64Kbps
<b>Broadcast storm suppression</b>	Support storm suppression based on port speed rate and warning alert when the flow reaching the limited value.
<b>Device Management</b>	SNMP Web management (HTTPS) DHCP-client Password protection One key to restore Command line configuration(CLI) Console port
<b>Device Maintenance</b>	RMON (Remote Network Monitoring) Syslog Ping / Traceroute LLDP

## Industrial PoE Switch Solution

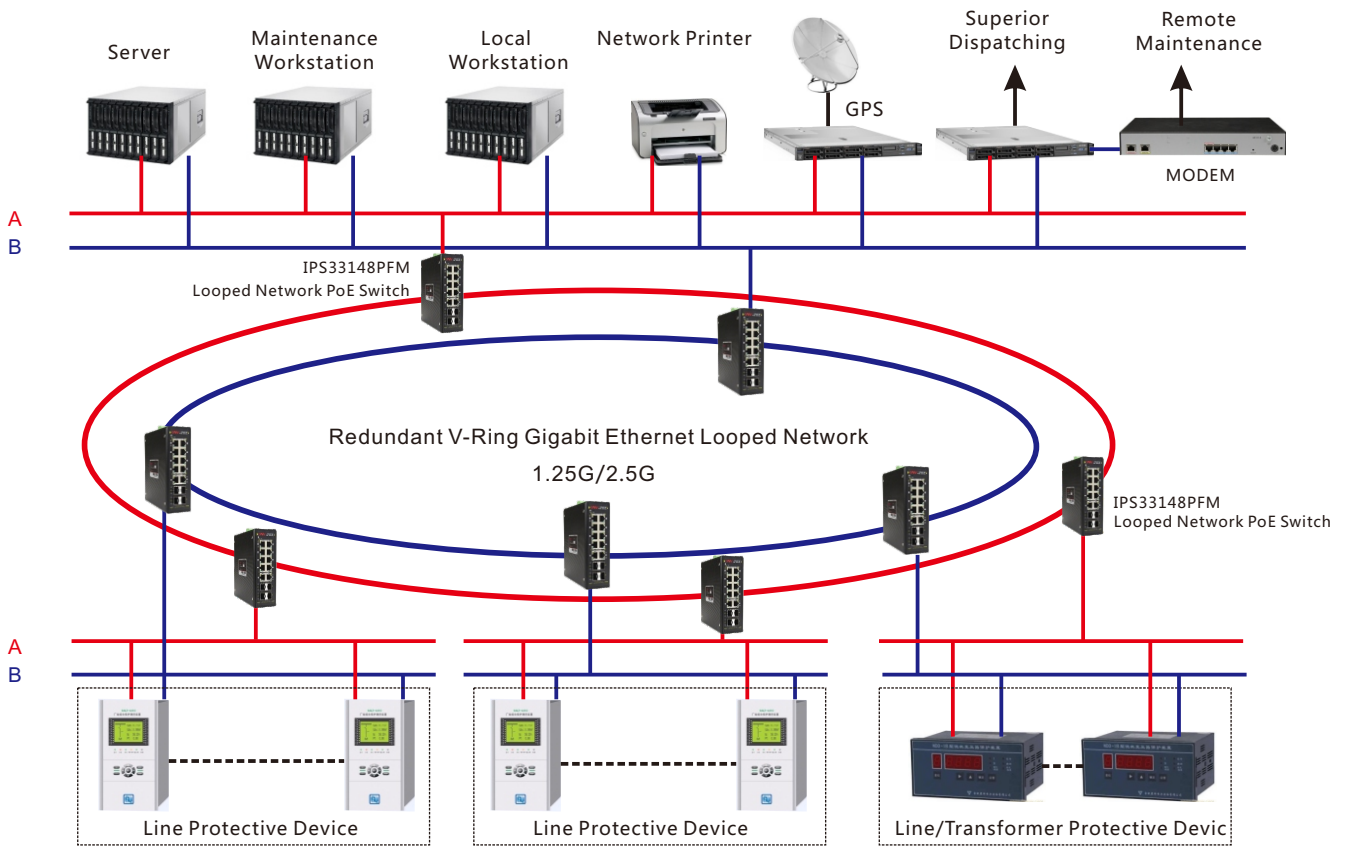
For the earliest industrial network products, most of clients were focusing on their features of electricity, physics, structure and other hardware conditions, while with development direction to smart, flexibility and efficient, more and more clients are willing to use products with powerful functions like web management, looped network switching, redundancy, QoS and platform etc. With more than 14-year experience in security transmission and attention to the industrial application feature, ONV has launched series of industrial PoE switch both with excellent quality in hardware and powerful software functions, which is including looped network switching time ensured that less than 50ms, effective multicast forwarding, broadcast storm suppression, accurate flow control, wide operation temperature range, anti-electromagnetic interference, anti-dust and shockproof etc.

The ONV industrial switch offers a complete solution in the fields of electricity, transportation and energy. In the future, ONV will continue to focus on industrial automation, expand product development and application, and strive to develop in two aspects: depth of technology and breadth of application.



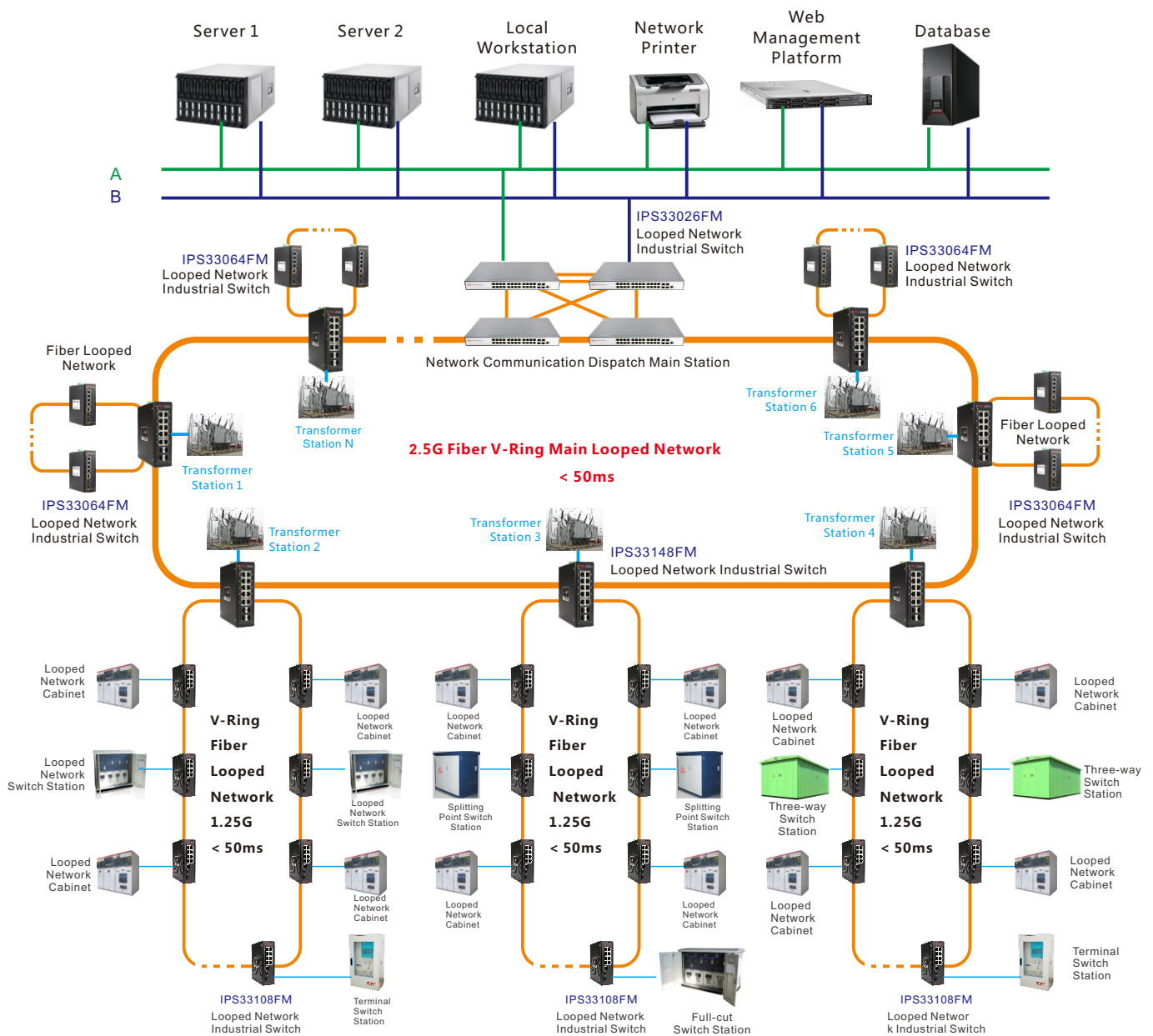
# Digital Substation

The 35kV-500kV digital substation automation system, which is integrated protection, control, monitoring, measurement and other automated functions, is divided into three architecture: interval layer, communication layer and substation layer. It is easy to achieve the interconnection of different factory equipment through the communication layer which adopting the standard communication protocol. Meanwhile, it provides two independent communication network for all devices and ensures high reliability of communication with the dual network industrial Ethernet communication modem. And clients can use the two independent network for communication and fault wave record respectively.



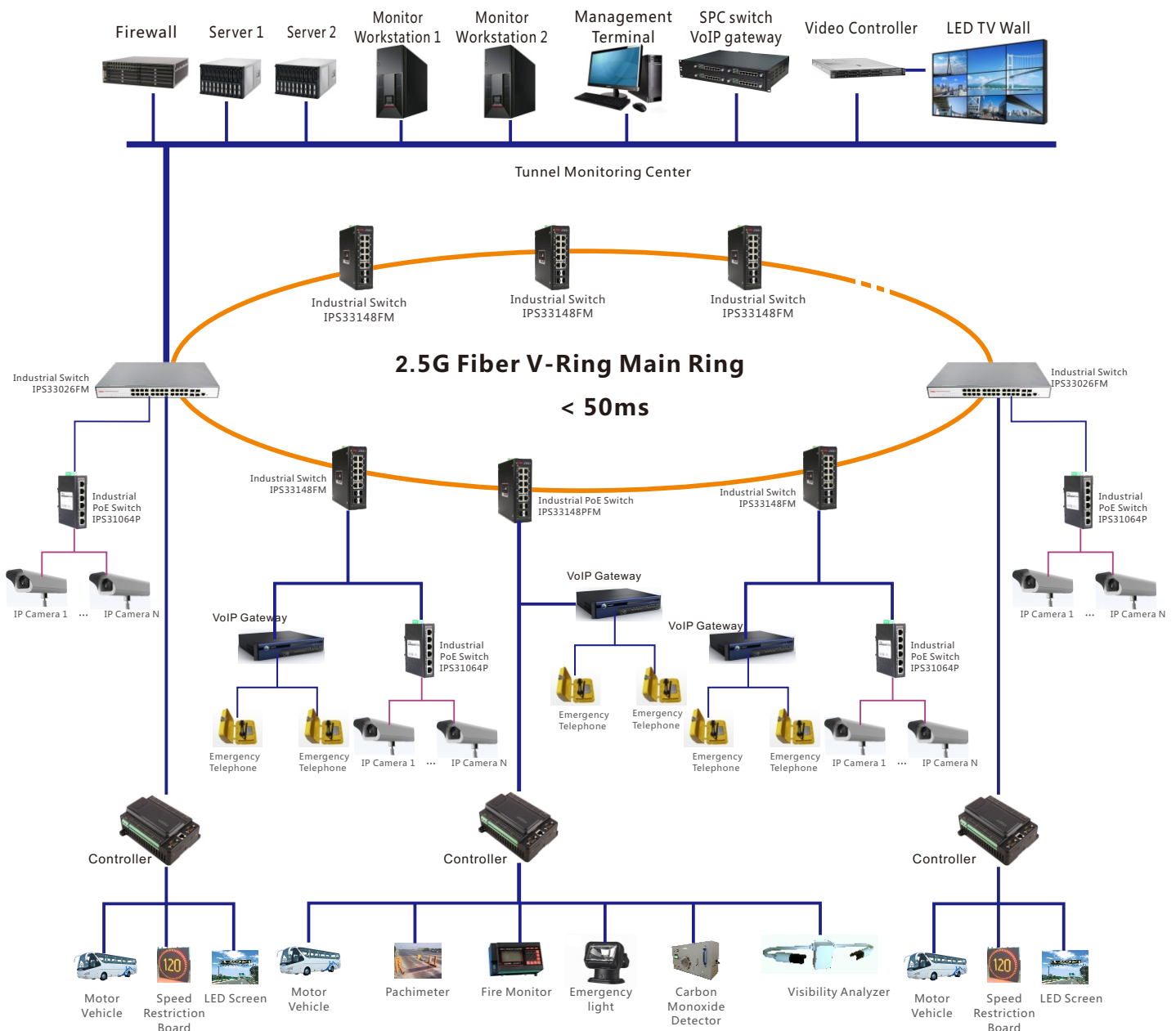
## Power Information Acquisition

Smart grid uses the advanced communication, information and control technology to build a unified, strong and intelligent power grid with the characteristics of informatization, automation and interaction, and it is on the basis of coordinated development of the strong networks at all levels with the high voltage grid as the backbone frame. The typical hardware logic structure of the distribution SCADA system consists of computer nodes, communications equipment, and other auxiliary devices. In order to further improve the efficiency of power distribution, power distribution reliability, service level and information interaction, it is necessary to construct local grid around informatization and some main parts including power generation, power transmission, power transformation, power distribution, electricity consumption and dispatching etc. Among those parts, the power automatic distribution and electricity consumption information acquisition are the first step. At the same time, the industrial Ethernet technology provides information and communications support to the strong smart grid.



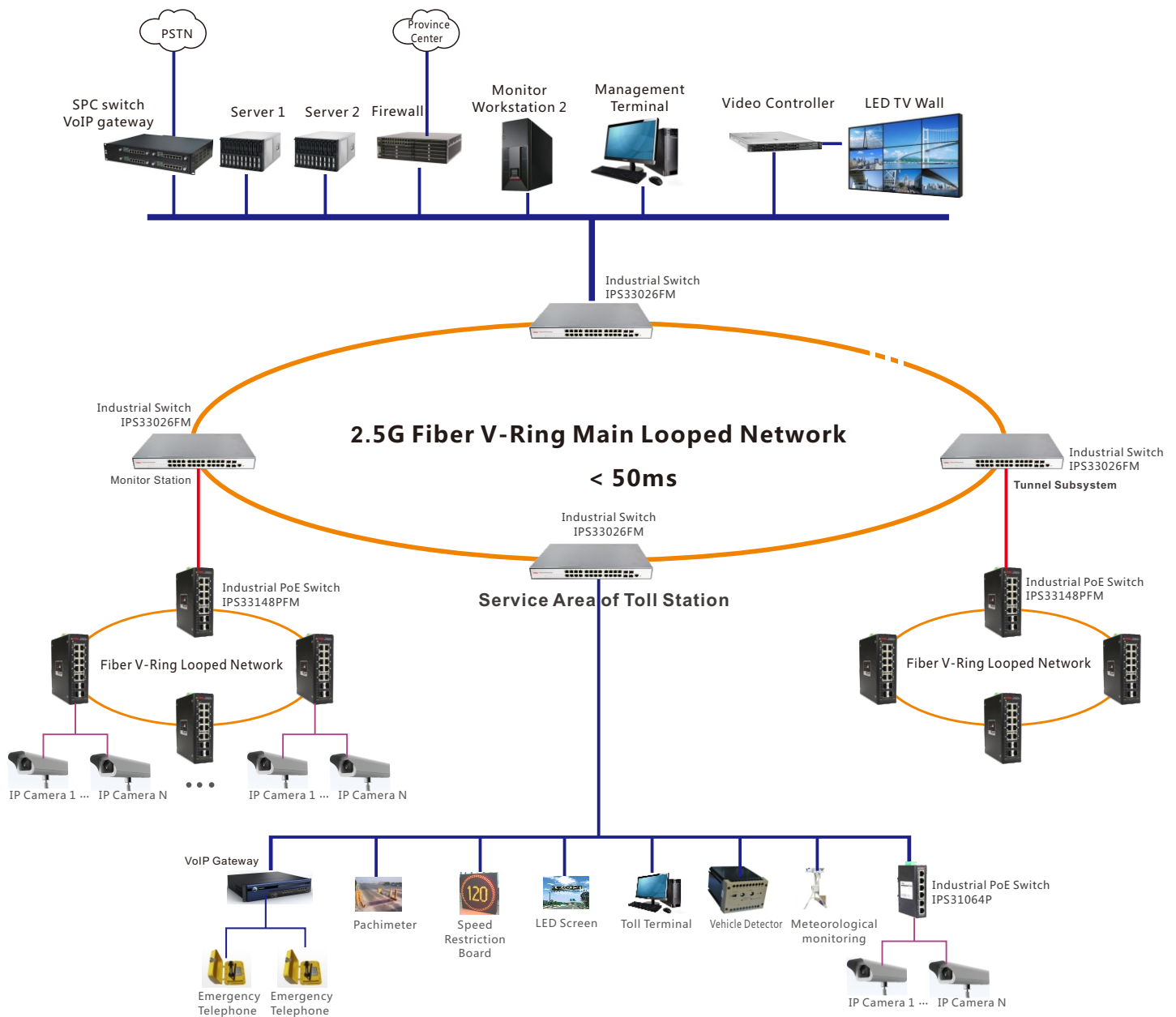
## Expressway Tunnel Monitoring System

According to the various subsystems, Expressway tunnel monitoring system can be divided into general lighting system, ventilation system, traffic guidance system, fire alarm system, fire control system, emergency telephone system and broadcasting system etc. The whole system is including the site layer, the communication layer and the administrative control layer. The site includes all kinds of test equipment such as fire alarm probe, vehicle detector, visibility detector, wind speed wind direction, control equipment such as traffic area controller, lighting area controller, ventilated area controller, etc. The communication layer consists of the communication between various controllers, PLC devices, and control centers. The control center includes computer workstation, electronic large screen monitor, alarm, etc. Due to the environment is more complex in Expressway tunnel, it is suitable to use industrial Ethernet switches to form a optical fiber looped network featured with fast redundancy, wide operation temperature, high protection grade and strong electromagnetic interference.



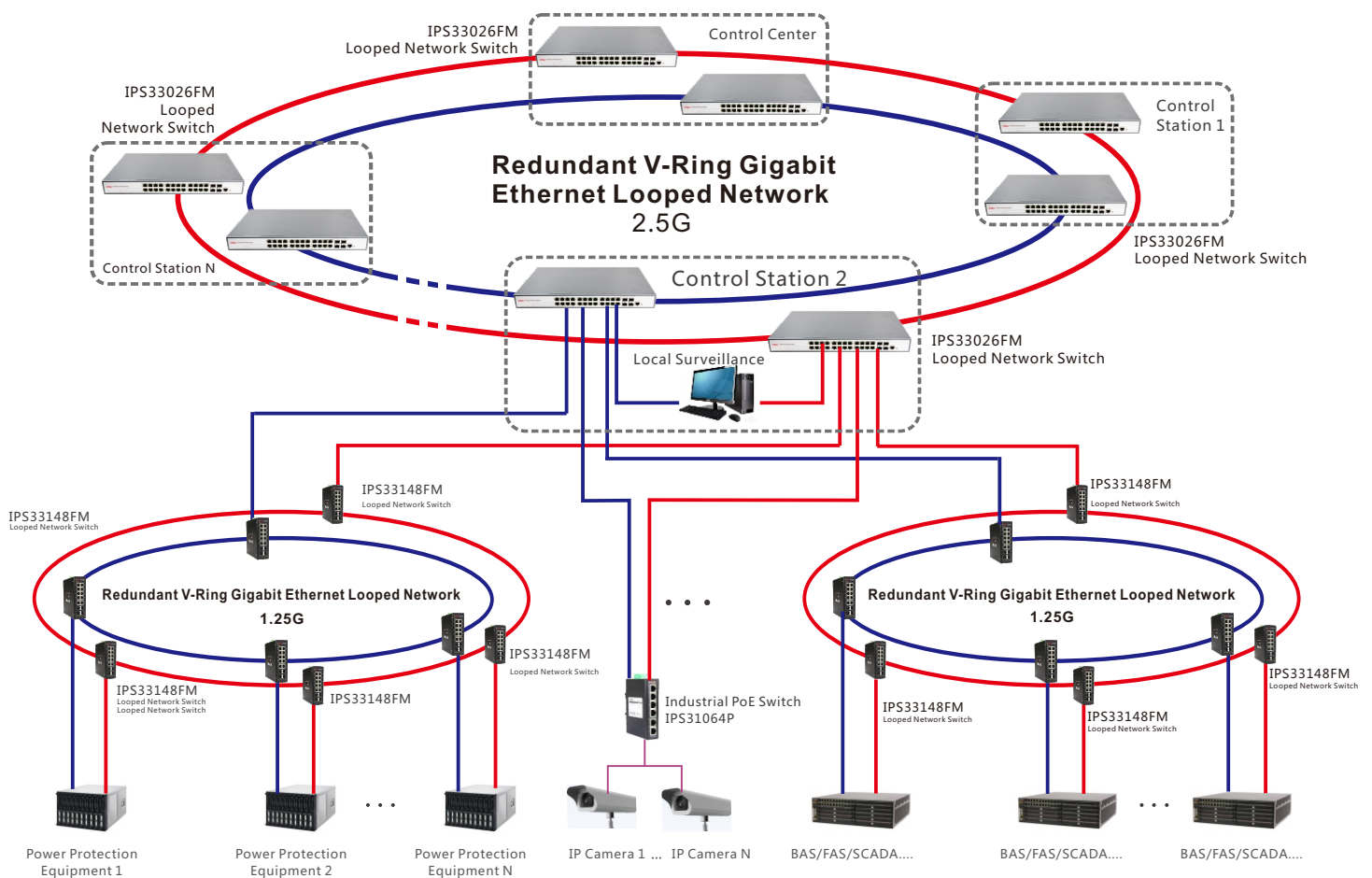
## Expressway Communication System

Expressway communication system is a brace system of Expressway modernization management. It ensures data, voice and image accurate and prompt transmission of monitoring system and charge system. And also keeps communications between internal departments or internal departments and outside. Meanwhile, as the main transmission carrier and important part of traffic communication network, it provides transport channel for network services (Intranet, Internet) and conference television system. To ensure the real-time communication in expressway, a lot of systems are now using industrial Ethernet technology, fiber transmission, industrial-grade (Wide operation temperature, high protection level to dust and wet, strong battery interference) communication equipment and network topology featured with high stability and high reliability.

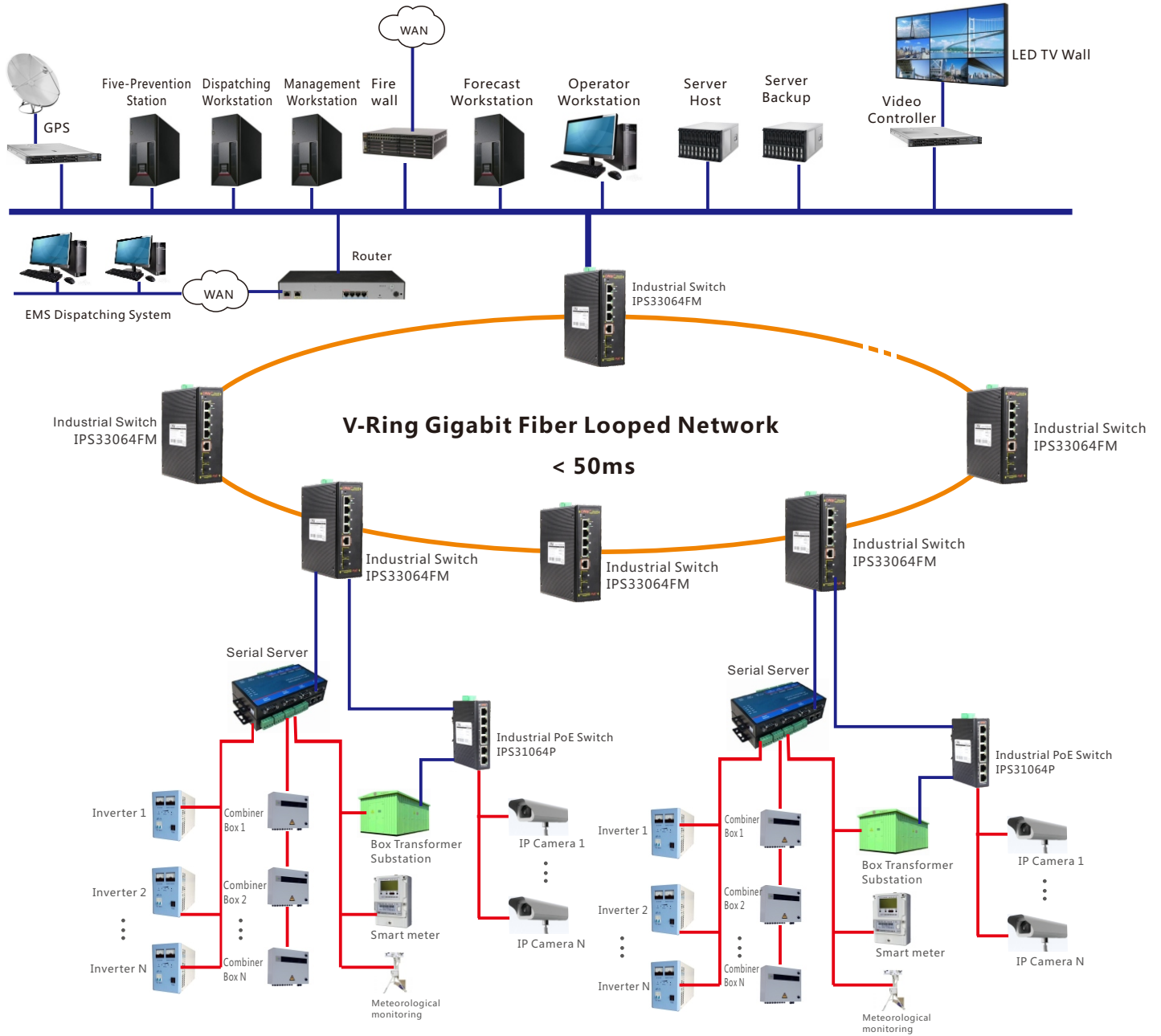


## Smart Track Monitoring System

As the whole network main channel of integrated monitoring system, the backbone network of integrated track monitoring system builds up a WAN which is connecting with the LAN of station and rolling stock depot and the LAN of control center, and it consists of BAS, FAS and SCADA etc. For above subsystems, not only they can work independently, but also share and transmit information between subsystems without any barrier, which is helpful to full range of integrated monitoring and coordination control. Built up with 2.5Gbps industrial-grade double looped Ethernet, the integrated track monitoring backbone network can meet the requirement of data transmission of current project and the line-speed switching, the future trend, access from other lines and the reversed redundancy conditions of higher level integrated system. The 10/100M or 10/100/1000M port of industrial switch is supporting line-speed forwarding, jumbo frame. To keep subsystems efficient operation, it adapts the redundancy configuration, automatic hot standby switching function, OoS (Virtual WLAN, Broadcast storm control and Multicast forwarding etc.) and rich network management functions.

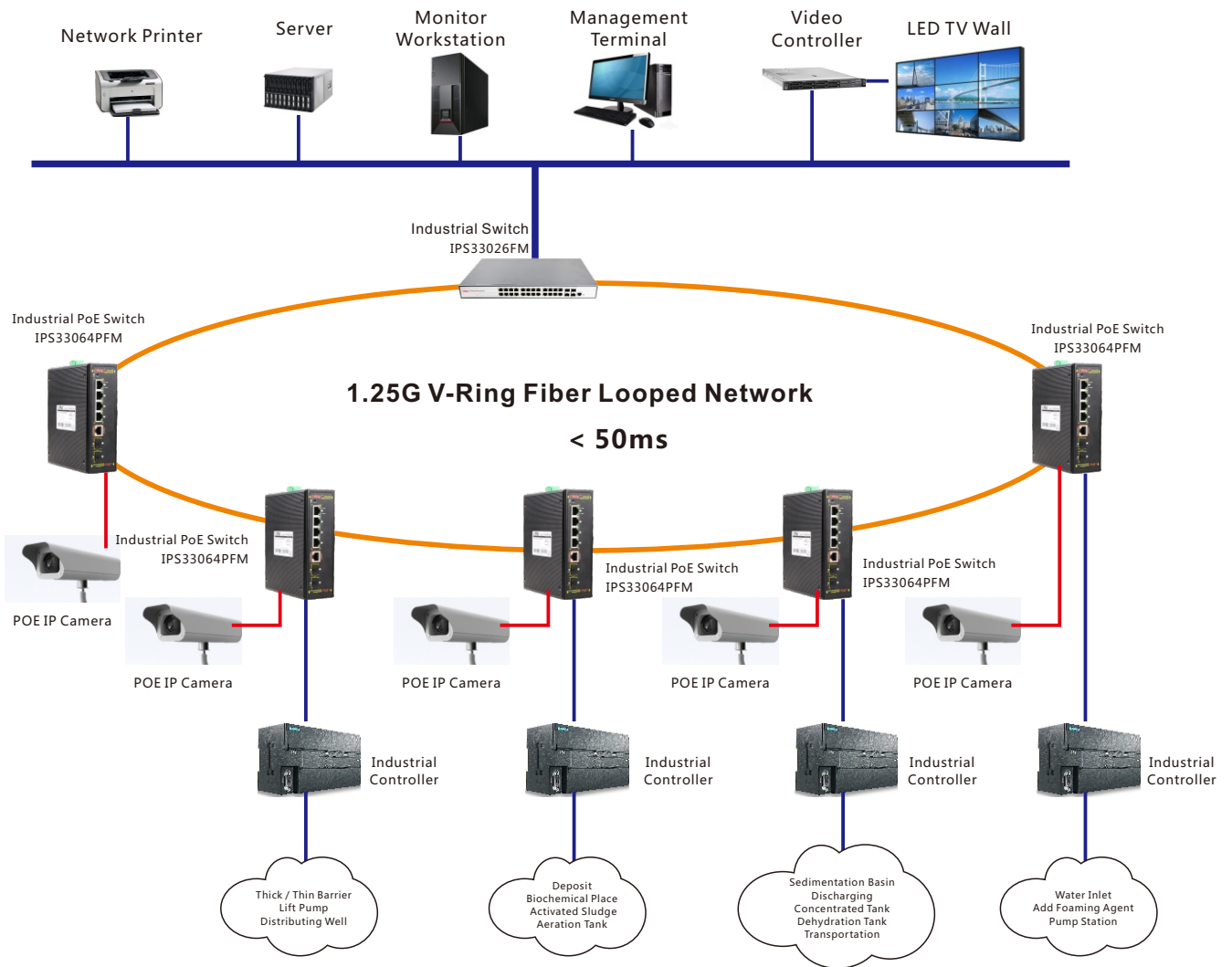


# Grid-Connected Photo-voltaic Smart System Solution

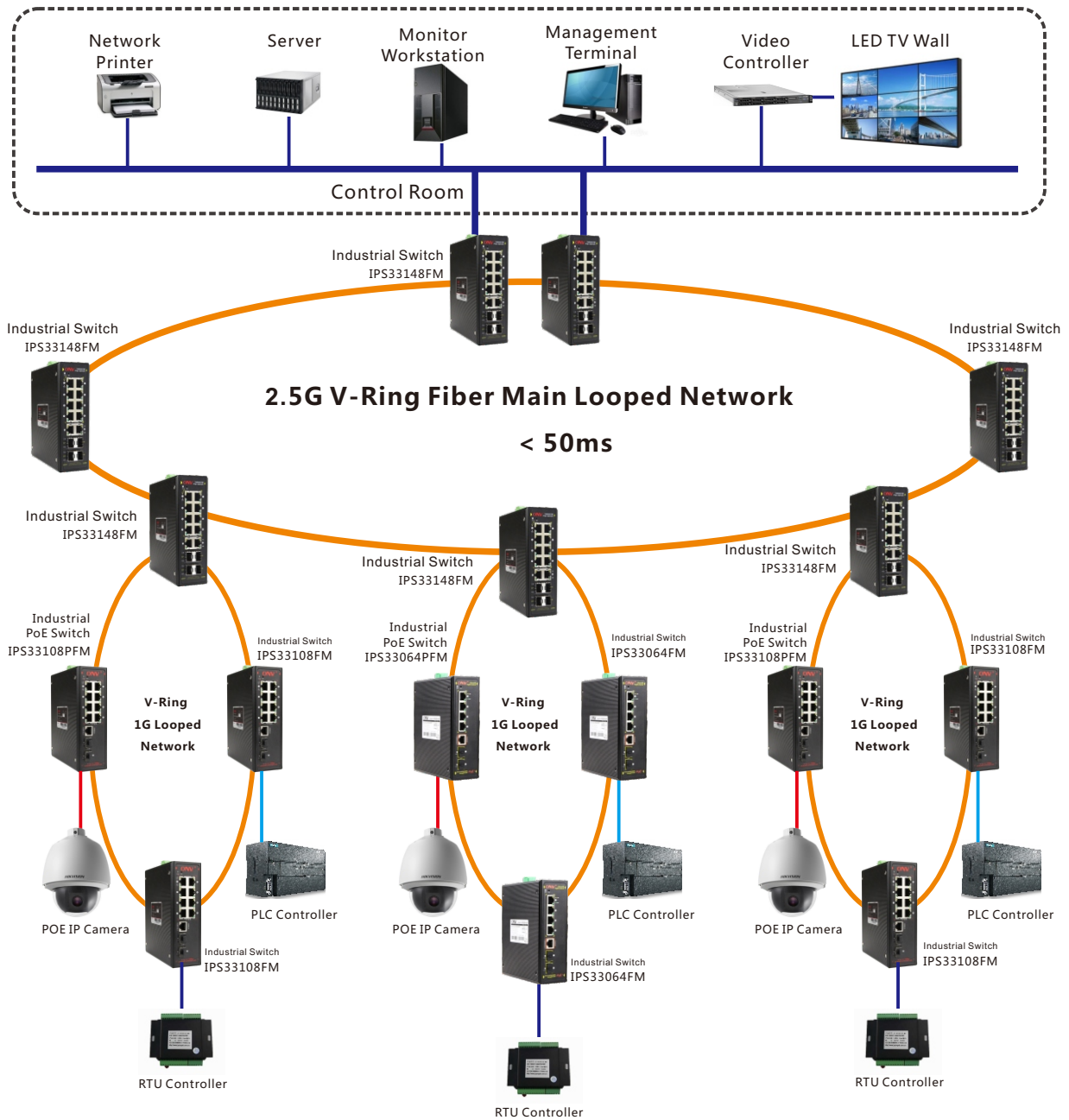




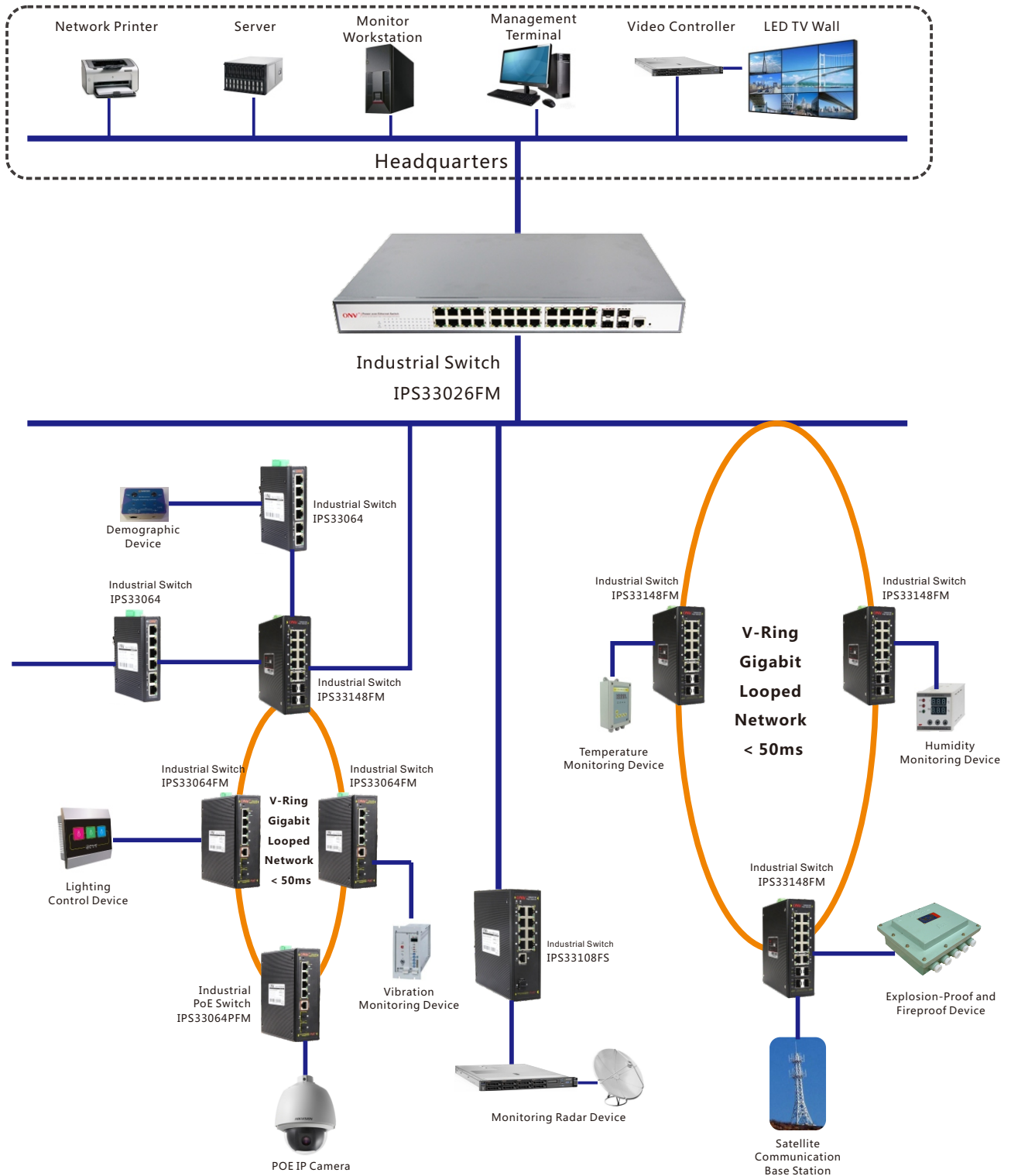
# Industrial Automatic-control Network Solution



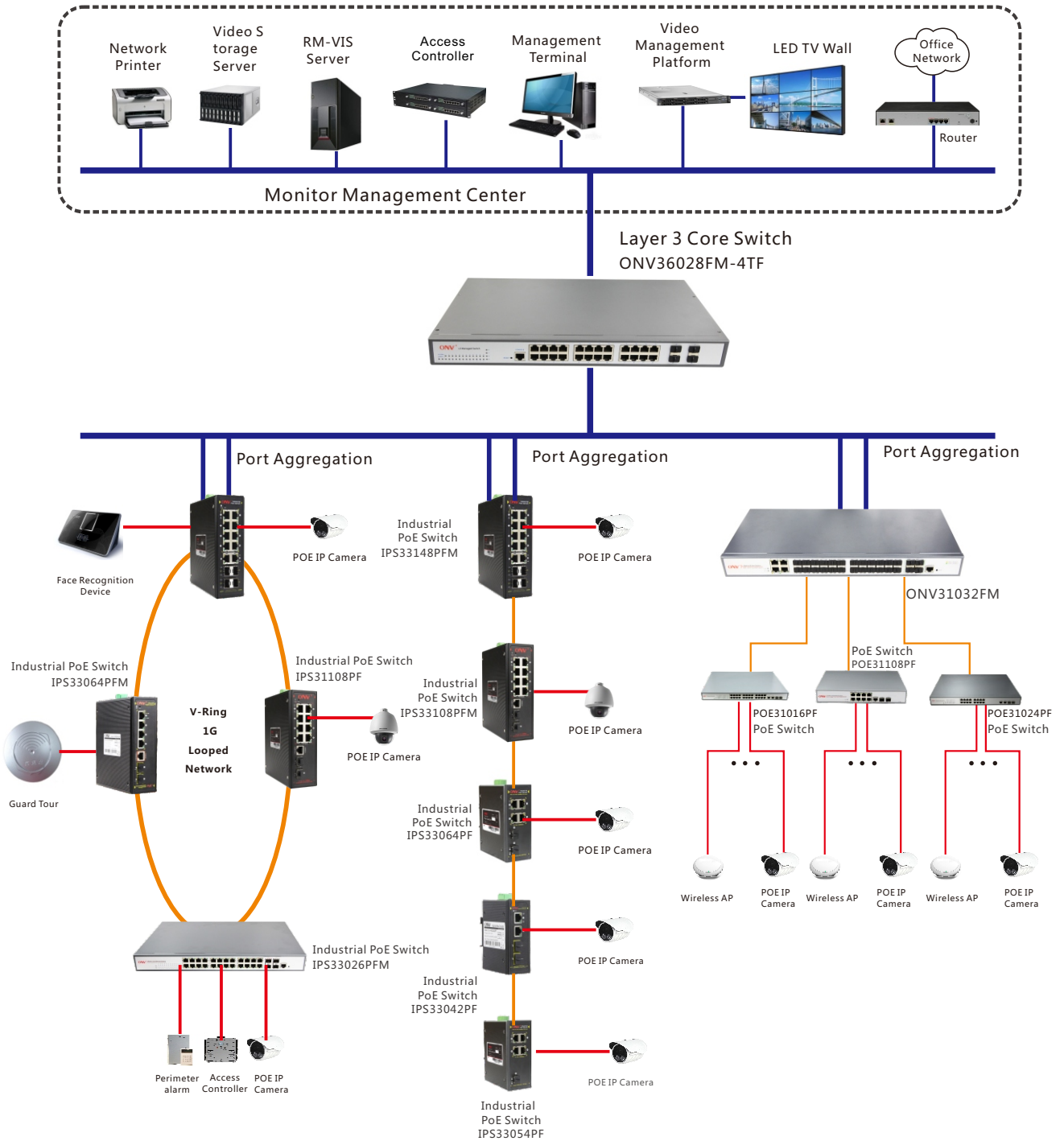
# Industrial Automatic-control Network Solution



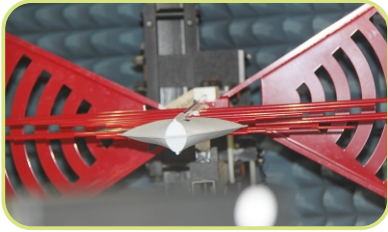
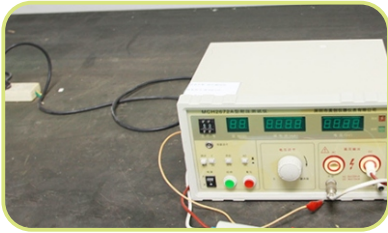
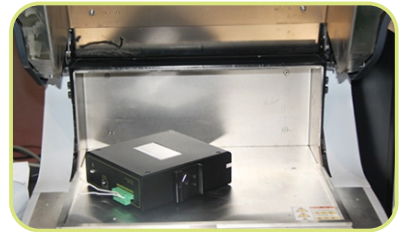
# National Defense and Military Network Communication Solution



# Smart City Network Solution



# Appendix: ONV Testing Lab





For more information in ONV wechat