



User Manual

AI 24V PoE Switch

Outdoor Water Resistant AI PoE Switch

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Notice: This Manual takes 8-port switch as an example

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Foreword

General

This Manual contains explanations about the features and physical structure of PoE Switches and other products (hereinafter referred as "The Device")

Safety Instructions

The following signs may appear in the manual.

Signal Words	Meaning
 DANGER	Indicates a hazard with a high level of risk, which if not avoided, will result in death or serious injury.
 WARNING	Indicates a potentially hazardous situation, which if not avoided, could result in equipment damage, data loss, performance degradation, or unexpected results.
 CAUTION	Indicates a potential risk which, if not avoided, could result in property damage, data loss, lower performance, or other unpredictable results.
 TIPS	Provides methods to help you solve a problem or save time.
 NOTE	Provides additional information to emphasize points in the main text.

About the Manual

The manual is for reference only. If there is inconsistency between the manual and the actual device, the actual device shall prevail.

1. We are not liable for any loss or property damage caused by operating the device differently than described in this manual.
2. The manual will be updated according to the latest laws and regulations of related jurisdictions. For detailed information, refer to the paper manual, CD-ROM, QR code or our official website. If there is inconsistency between paper manual and the electronic version, the electronic version shall prevail.
3. All the designs and software are subject to change without prior written notice. The device updates might bring some differences between the actual device and the manual. Please contact the customer service or your distributor for the latest update and supplementary documentation.
4. There still might be deviations in technical data, functions and operation description, or errors in print. If there is any doubt or dispute, we reserve the right of final explanation.
5. Upgrade the reader software or try other mainstream reader software if the manual (in PDF format) cannot be opened.
6. All trademarks, registered trademarks and the company names in the manual are the properties of their respective owners.
7. Please visit our website contact the supplier or customer service if there is any problem occurring when using the device.
8. If there is any uncertainty or controversy, we reserve the right of final explanation.

Important Safeguards and Warnings

This manual helps you to use the device properly. To avoid any danger and property damage, read the manual carefully before using the device. It is highly recommended that you keep this manual stored in a safe place for future reference.

Operating Requirements

1. Do not expose the device directly to the sunlight and keep it away from heat sources.
2. Do not install the device in damp environments and avoid dust and soot.
3. Make sure the device is installed in horizontal position, on solid and flat surface.
4. Avoid liquid spattering on the device. Do not place any liquid container on top or near the device.
5. Install the device in well-ventilated environment. Do not block the air vents of the device.
6. Use the device at rated input and output voltages.
7. Never disassemble the device. There is risk of electric shock!
8. Transport, use, and store the device in allowed ranges of humidity and temperature.

Power Supply Requirements

Always use the power cords and power adapters provided with the device. If the power adapter or power cord gets damaged, please ask your distributor for a replacement. We assume no responsibility for damage and problems caused by the use of non-standard power adapters and power cords.

Main Characteristics

1. Always use patch cords rated for the power needed by the wireless AP/CPE and IP camera/PTZ
2. Network standard followed by all PoE devices is: IEEE802.3af/at/bt.
3. Auto-Adaption 250m Transmission can be found in some device
4. AI Watchdog Function offers: detection front-end PoE cameras and PD, automatic detection, automatic restart.
5. 6KV lightning protection, 8KV surge protection, anti-reverse connection, over-current protection, over-voltage protection, over-temperature protection, short circuit protection.
6. Maximum output power of the bt ports is 60W. These ports can be used to power hi-power equipment.
7. Zero configuration feature gives the possibility for the device to sense if the appliance connected to it needs PoE and the wattage needed.

AI Watchdog Function (Part of model)

Auto-detect and restart an IP camera if the camera is not responding



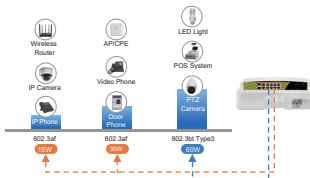
6KV Lightning & 8KV ESD Protection

*6KV lightning and 8KV Static electricity protection in the PoE ports, protects the PoE switch from lightning strikes and other electrical surges, offering reliable performance even in harsh environments.



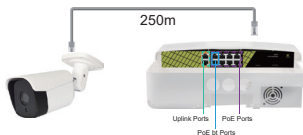
Support of bt 60W High Power (Part of model)

*60W high-power ports meet the needs of more and more high-power powered devices.



Auto-Adaption 250m Transmission (Part of model)

Using the latest transmission technology, each port of the switch intelligently judges the transmission distance. When the distance exceeds 130m, the speed of the corresponding port will reduce from 100Mbps to 10Mbps. At this time, the farthest transmission distance of the corresponding port will reach 250m.



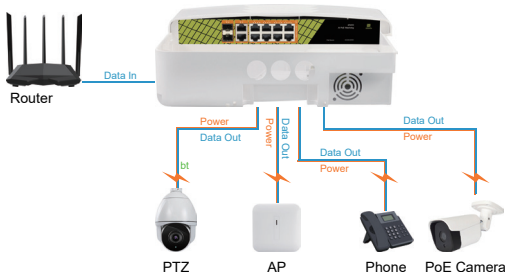
Installation Guidelines

Installation Steps:

Please follow these installation steps

1. Turn off all signal sources and devices. Installation of powered on devices may damage the equipment.
2. Use correct number of network cables and check that all cables are correctly crimped and certified according to industry standards.
3. Use another network cable (or optical fiber) to connect switch's UPLINK port to NVR or PC.
4. Connect the power adapter (or power cable) to the switch.
5. Check one last time if everything is installed correctly and then power up the device.
6. Make sure that every device is powered up correctly and the devices work as they should.

Installation Diagram:

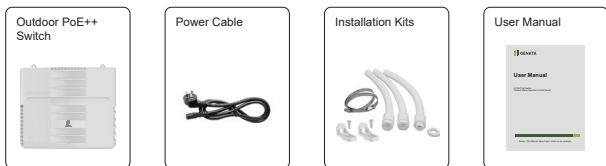


Caution:

1. The device is never to be opened. Opening the device will void the warranty and puts you in risk of electric shock or death.
2. When the devices are powered there is risk of high current and voltage, so caution is advised at all stages.
3. Always use provided power adapters and power cords. If the power adapter is lost or damaged please contact your distributor.
4. Don't operate the PoE switch in humid environments. liquids or humidity entering the device case can cause damage to the devices or personnel.
5. Turn on power to the device only after all cables are connected.
6. Do not plug-in or plug-out any connection cables when devices are powered up.
7. Do not operate the PoE switch in dusty or EME environment.
8. Do not put any equipment or other objects on top of the device.
9. According to the IEEE802.3af/at/bt standard, if the device needs to reach 250m, Cat5e or above cable standard is needed.
10. Calculate carefully the maximum power budget so it doesn't exceed device's capability.
11. Check carefully and use the appropriate model for indoor or outdoor use.

Items List

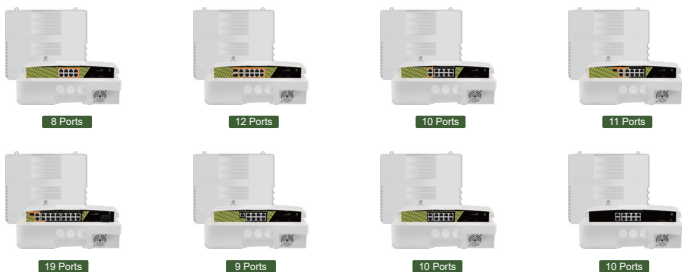
Outdoor PoE++ Switch Items



Outdoor Switch installation diagram



Model classification



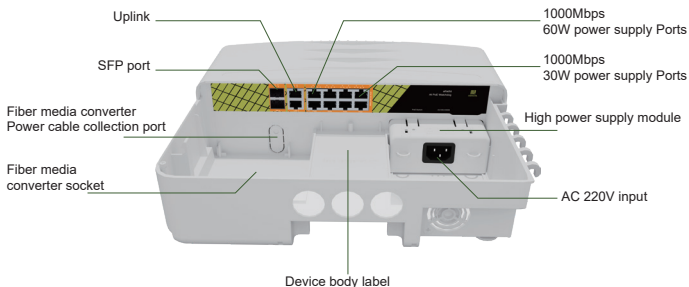
Port Description



- 1 -100Mbps PoE Ports
- 2 -1000Mbps PoE Ports
- 3 -1000Mbps Uplink Ports
- 4 -1000Mbps SFP Ports
- 5 -60W power supply Ports
- 6 -100Mbps Uplink Ports
- 7 -100Mbps Ports

Take GNT-P1012G6-F as example:

Internal introduction



Specification

AI 24V PoE Switch

Model	GNT-9828-4F	
Ports	8X10/100Mbps PoE Ports (RJ45) 2X10/100Mbps Uplink Port (RJ45)	
Transmission Rate	200Mbps Full Duplex; 10 or 100Mbps Half Duplex	
Transmission Distance	130m	
Performance Specification	Bandwidth: 2.0Gbps	
	Network Latency (10 to 100Mbps): $\leq 16\mu s$ (use the 64byte package size)	
	MAC address table: 2K	
	The Frame Filter & Transmission Rate: 14880pps the most for 10M port, 14880pps the most for 100M port	
Networking Standard	IEEE 802.3i 10BASE-T	
	IEEE 802.3u 100BASE-TX	
	IEEE 802.3x Flow Control	
	IEEE 802.3af Power over Ethernet	
Power Support	Power Input: AC 90~240V Totals 120W	
	AI Watchdog: Port 1~8	
	Power Output: PoE 1~8 Port: 4/5(+24V), 7/8(GND) $\leq 15W$	
Protection Level	Lightning Protection: 6KV	
	ESD Protection: 8KV	
Physical Specifications	Size(L*W*H): 310mm*280mm*100mm	
Working Environment	Operating Temperature: -30°C~60°C	
	Storage Temperature: -40°C~70°C	
	Operating Humidity: 10%~90% Non-condensing	
	Storage Humidity: 5%~90% Non-condensing	
Certification	CE	
	FCC	
	RoHS 2.0	
Warranty	Whole Device: 1 year	
Package Content	AC Power Cable, User Manual, Installation Kits (Steel hoops, Waterproof pipes, Wall mounting earrings)	

Outdoor Waterproof Series 01:

Model	GNT-P9109EA-F	GNT-P9828F6
Ports	8X10/100Mbps PoE Ports (RJ45) 1X10/100Mbps Uplink Port (RJ45)	8X10/100Mbps PoE Ports (RJ45) 2X10/100Mbps Uplink Port (RJ45)
Transmission Rate	200Mbps Full Duplex; 10 or 100 Mbps Half Duplex	
Transmission Distance	10/100Mbps 130meters; 10Mbps Auto-adaption 250meters	130m
Performance Specification	Bandwidth: 1.8Gbps	Bandwidth: 2.0Gbps
	Network Latency (10 to 100Mbps): $\leq 16\mu s$ (use the 64byte package size)	
	MAC address table: 2K	
	The Frame Filter & Transmission Rate: 14800pps the most for 10M port, 148800pps the most for 100M port	
Networking Standard	IEEE 802.3i 10BASE-T	
	IEEE 802.3u 100BASE-TX	
	IEEE 802.3x Flow Control	
	IEEE 802.3af/at/bt Power over Ethernet	
Power Support	Power Input: AC 90~240V Totals 120W	
	AI Watchdog: Port 1~8	
	Power Output: PoE1~8 Port: 1/2(+52V), 3/6(GND) $\leq 30W$ PoE 7~8 Port: 1245(+52V), 3678(GND) Compatible 1/2(+52V), 3/6(GND) $\leq 60W$	
Protection Level	Lightning Protection: 6KV	
	ESD Protection: 8KV	
Physical Specifications	Size(L*W*H): 310mm*260mm*100mm	
Working Environment	Operating Temperature: -30°C~60°C	
	Storage Temperature: -40°C~70°C	
	Operating Humidity: 10%~90% Non-condensing	
	Storage Humidity: 5%~90% Non-condensing	
Certification	CE	
	FCC	
	RoHS 2.0	
Warranty	Whole Device: 1 year	
Package Content	AC Power Cable, User Manual, Installation Kits (Steel hoops, Waterproof pipes, Wall mounting earrings)	

Outdoor Waterproof Series 02

Model	  		
Ports	8X10/100Mbps PoE Ports (RJ45) 2X10/100/1000Mbps Uplink Port (RJ45)	6X10/100Mbps PoE Ports (RJ45) 2X10/100/1000Mbps PoE Ports (RJ45) 2X10/100/1000Mbps Uplink Port (RJ45) 1X10/100/1000Mbps SFP Port	15X10/100Mbps PoE Ports (RJ45) 1X10/100/1000Mbps PoE Ports (RJ45) 2X10/100/1000Mbps Uplink Port (RJ45) 1X10/100/1000Mbps SFP Port
Transmission Rate	2000Mbps Full Duplex; 10 or 100 or 1000Mbps Half Duplex		
Transmission Distance	10/100Mbps 130meters; 10Mbps Auto-adaption 250meters	130m	Port1~15:10/100Mbps 130meters; 10Mbps Auto-adaption 250meters Port16:10/100/1000Mbps 130meters
Performance Specification	Bandwidth: 5.6Gbps	Bandwidth: 11.2Gbps	Bandwidth: 11.0Gbps
	Network Latency (10 to 1000Mbps): $\leq 16\mu s$ (use the 64byte package size)		
	MAC address table: 8K		
	The Frame Filter & Transmission Rate: 14800pps the most for 10M port, 148800pps the most for 100M port, 1488000pps the most for 1000M port		
Networking Standard	IEEE 802.3i 10BASE-T/IEEE 802.3u 100BASE-TX		
	IEEE 802.3ab 1000BASE-T		
	IEEE 802.3x FlowControl		
	IEEE 802.3af/at/bt Power over Ethernet		
Power Support	Power Input:AC 90~240V Totals120W		Power Input:AC 90~240V Totals300W
	AI Watchdog: Port 1~8		AI Watchdog: Port 1~16
	Power Output: PoE1~6 Port:1/2(+52V),3/6(GND) $\leq 30W$ PoE 7~8 Port:1245(+52V),3678(GND) Compatible1/2(+52V),3/6(GND) $\leq 60W$		Power Output: PoE1~14 Port:1/2(+52V),3/6(GND) $\leq 30W$ PoE15~16 Port:1245(+52V),3678(GND) Compatible1/2(+52V),3/6(GND) $\leq 60W$
Protection Level	Lightning Protection: 6KV		
	ESD Protection: 8KV		
Physical Specifications	Size(L*W*H):310mm*260mm*100mm		
Working Environment	Operating Temperature: -30°C~60°C		
	Storage Temperature: -40°C~70°C		
	Operating Humidity: 10%~90% Non-condensing		
	Storage Humidity: 5%~90% Non-condensing		
Certification	CE		
	FCC		
	RoHS 2.0		
Warranty	Whole Device: 1 year		
Package Content	AC Power Cable, User Manual, Installation Kits (Steel hoops, Waterproof pipes, Wall mounting earrings)		

Outdoor Waterproof Series 03

Model	GNT-P1008G6-F		GNT-P1012G6-F	
Ports	8X10/100/1000Mbps PoE Ports (RJ45) Compatible Uplink Port (RJ45)		8X10/100/1000Mbps PoE Ports (RJ45) 2X10/100/1000Mbps Uplink Port (RJ45) 2X10/100/1000Mbps SFP Port	
Transmission Rate	2000Mbps Full Duplex; 10 or 100 or 1000Mbps Half Duplex			
Transmission Distance	130m			
Performance Specification	Bandwidth: 16 Gbps		Bandwidth: 24 Gbps	
	Network Latency (10 to 1000Mbps): ≤ 16μs (use the 64byte package size)			
	MAC address table: 8K			
	The Frame Filter & Transmission Rate: 14800pps the most for 10M port, 148800pps the most for 100M port, 1488000pps the most for 1000M port			
Networking Standard	IEEE 802.3i 10BASE-T/IEEE 802.3u 100BASE-TX			
	IEEE 802.3ab 1000BASE-T			
	IEEE 802.3x FlowControl			
	IEEE 802.3af/at/bt Power over Ethernet			
Power Support	Power Input:AC 90~240V Totals≤120W			
	AI Watchdog: Port 1~8			
	Power Output: PoE1~6 Port: 1/2(+52V),3/6(GND)≤30W PoE 7~8 Port:1245(+52V),3678(GND) Compatible1/2(+52V),3/6(GND)≤60W			
Protection Level	Lightning Protection: 6KV			
	ESD Protection: 8KV			
Physical Specifications	Size(L*W*H):310mm*260mm*100mm			
Working Environment	Operating Temperature: -30℃~60℃			
	Storage Temperature: -40℃~70℃			
	Operating Humidity: 10%~90% Non-condensing			
	Storage Humidity: 5%~90% Non-condensing			
Certification	CE			
	FCC			
	RoHS 2.0			
Warranty	Whole Device: 1 year			
Package Content	AC Power Cable, User Manual, Installation Kits (Steel hoops, Waterproof pipes, Wall mounting earrings)			

Troubleshooting

Please check the following if the device isn't operating as expected

1. Confirm that all installation steps were followed as described above in this manual
2. Confirm that the ethernet cables and connectors are terminated according to the EIA/TIA568A or 568B industry standards
3. Power of a/f/at ports can't exceed 30W and power of bt ports can't exceed 60W so make sure that all devices are connected accordingly to their power rating
4. Try a working device to check if the problem is happening inside the device
5. If the problem persists please contact will us.

RJ 45 Making Method

Tools to make RJ45: wire crimper, network tester;

Wire sequence of RJ45 plug should conform with EIA/TIA568A or EIA/TIA568B standard;

1. Strip off the 2cm insulating layer to expose the 4 pairs UTP cable;
2. Separate the 4 pairs of UTP cable and straighten them;
3. Line up the 8 separated pieces of cables per EIA/TIA 568A or 568B;
4. Cut the cables to leave 1.5cm bare wire and make sure 8 thread ends are flat and neat;
5. Plug 8 cables into RJ45 plug, make sure each cable is in each pin;
6. Then use wire crimper to crimp the RJ45;
7. Do the above 5 steps again to make the another end of the twisted pair and make sure consistent cable order between two ends;
8. Using network tester to test the cable.

pin color	
1	white/green
2	green
3	blue
4	white/orange
5	white/blue
6	white/brown
7	orange
8	brown



EIA/TIA 568A

pin color	
1	white/orange
2	orange
3	white/green
4	blue
5	white/blue
6	green
7	white/brown
8	brown



EIA/TIA 568B



Notice

Make sure both ends use EIA/TIA568A connection method when using RJ45 port.
Make sure both ends use EIA/TIA568B connection method when using RJ45 port.

Device Installation

* optional 1: Waterproof pipe

1-1.Route the power cable and network cable through the waterproof pipe



* optional 2: Silicon cap

1-2.Route the power cable and network cable through the waterproof silicon cap



Device Installation

2.Slide down the front lower cover to open



3-1.Screw the waterproof pipe to the round hole at the bottom of the switch and tighten it, Connect the power cable and network cables to the ports



3-2.Through the silicon cap to connect the power cable and network cables to the ports.



Device Installation

4.Close the cover and tighten the screws



5. .Check whether the installation is secure.



After-sales Service

Warranty card

The following situations are not covered by free maintenance, the company can provide paid service for out-of-warranty devices:

- 1.The Device failure or damage is caused by installation, use, maintenance and storage not according to the instructions in this manual.
- 2.Out of the warranty period.
- 3.Alter or tear up of the product barcode by unauthorized personnel.
- 4.The product barcode or model number on the product warranty card does not match with the product itself.
- 5.Modification of firmware or disassembly and repair from unauthorized personnel.
- 6.Damage caused from accidental factors or human actions, such as exposing to strong light sources, inappropriate voltage, high temperature, water ingress, mechanical damage, falling, severe oxidation and rusting of the product etc.
- 7.Damage caused by delivery, loading and unloading during maintenance
- 8.Product failure or damage caused by force majeure such as earthquake, fire, flood, lightning.
- 9.All other failures or damage that are not caused by the product's own design, technology, manufacturing, quality and other issues.

Device after-sales service period and policy:

Product Category	Commitment Policy	Service Method
Switch	One year warranty	Customer delivery for repair



Notice

- 1.This warranty and replacement service is limited to the main device. Accessories such as packaging, various connection cable, software products and technical equipment are not covered.
- 2.During the warranty period (up to 1 year after the moment of purchase) the product will be checked by the authorized personnel in the distributor office. After the issue is confirmed the product will be repaired. If the issue can't be repaired, a replacement new device or similar model will be provided to the client. The old device will be property of the distributor. If not issue is detected in the device that the client delivered, that same device will be given back to the client after checkup
- 3.When asking for warranty, original invoice and warranty card must be provided to the distributor personnel. The original invoice and warranty card can be returned after a photocopy of it is made. If paid service will be provided, a warranty of 3 months will be applied for the repaired device
- 4.For a free warranty replaced device or repaired device, the original warranty period will remain a cative plus the days that the device remained in the distributor's premises.
- 5.All shipping costs, removal and installation of the device, delivery of the device to the distributor's premises are covered by the client.

User stub

In order to protect your rights, please fill in it carefully and keep it properly as a proof of repair:

Dealers Information	Model		Contact Number	
	Serial Number		Sale Date	
User Information	User Name		Contact Number	
	Address		E-mail	

Idea Transmission Navigator

