Layer 3 Multi-Gigabit Network Switches

GWN7821P - GWN7822P

The GWN7820 series are Layer 3 multi-gigabit managed PoE switches that allow medium-to-large enterprises to build scalable, secure, high performance and smart business networks that are fully manageable. It supports advanced VLAN for flexible and sophisticated traffic segmentation, advanced QoS for prioritization of network traffic, IGMP/MLD Snooping for network performance optimization, comprehensive security capabilities against potential attacks, and provides smart dynamic PoE output to power IP phones, IP cameras, Wi-Fi access points and other PoE endpoints. GWN7820 series can be managed in a number of ways, including the local Web user interface of the GWN7820 series switch and CLI, the command-line interface, and GWN router. The series is also supported by GDMS Networking and GWN Manager, Grandstream's cloud and on-premise network management platform. With complete end-to-end quality of service and flexible security settings, the GWN7820 series are the best value enterprise-grade managed PoE switches for medium-to-large businesses.

8 & 24 Gigabit Ethernet ports and 2 & 4 Gigabit SFP+ ports

Smart power control to support dynamic PoE/PoE+ and PoE++

Supports deployment in IPv6 and IPv4 networks

Reliability features including fault detection, device protection, dual boot, dual system file redundancy, link aggregation, storm control, and more

ACL filtering of data packets by configuring matching rules, processing operations and time schedule, and provides flexible security access control policies

Management options include: Embedded controlle; GDMS Networking and GWN Manager, Grandstream's free cloud and on-premise network management platform; CLI management; GWN router

Built-in QoS allows for prioritization of network traffic

Supports stacking (pending) for easy management on one interface while creating redundant backup between multiple devices

	GWN7821P	GWN7822P
Network Protocols	IPv4, IPv6, IEEE 802.3, IEEE 802.3i, IEEE 802.3u, IEEE 802.3ab, IEEE 802.3z, IEEE 802.3ae, IEEE 802.3az, IEEE 802.3ad, IEEE 802.3x, IEEE 802.3af/at/bt, IEEE 802.1p, IEEE 802.1Q, IEEE 802.1d, IEEE 802.1w, IEEE 802.1s, IEEE 802.1x	
Memory	256MB RAM 8MB Nor Flash, 128MB Nand Flash	
Jumbo Frame (Bytes)	10240	
PoE Standards	IEEE 802.3af/at/bt	
Gigabit Ports	8x 2.5G	16x 1G, 8x 2.5G
SFP+ Ports	2 (To Support DAC, cable must be ≤ 5m)	4 (To Support DAC, cable must be ≤ 5m)
Maximum Amount of Supported Modules	SM-10G: 2 MM-10G: 2 RJ45-10G: 2	SM-10G: 4 MM-10G: 4 RJ45-10G: 2 (Note: RJ45-10G modules must be interval inserted)
Console	1	
Link Aggregation Groups	5	14
Integrated Power Supply	280W(54V/5.19A)	420W(54V/7.78A)
External Redundant Power Supply (RPS)	/	54V(300W)
Maximum Output Power Per PoE Port	60W	30W for port 1-16, 60W for port 17-24
Max Total PoE Output Power	240W	360W
Surge Protection	± 6KV CM and DM for power ± 4KV CM for network ports	
ESD	± 12KV for contact discharge	
Auxiliary Ports	1x Reset Pinhole	
Forwarding Mode	Store-and-forward	
Total non-blocking throughput	40Gbps	76Gbps
Switching Capability	80Gbps	152Gbps
Forwarding Rate	59.52Mpps	113.088Mpps
Packet Buffer	12Mb	
Network Latency	<4µs	
Stacking	Yes, up to 4 devices	
Switching	• 16K MAC addresses, including static, dynamic and filtering MAC address • 4K VLANs, port-based VLAN, IEEE 802.1Q VLAN tagging, MAC-based VLAN, Protocol-based VLAN, voice VLAN • Private VLAN (pending) • VLAN virtual interface with 9216 MTU • 256 ARP/NDP • Spanning tree, 32 instances for STP/RTSP/MSTP/PVST(+)	
Routing	• 512 (IPv4)/128(IPv6) routes • 32 static routing • Policy routing • Dynamic routing, including RIP, RIPng, OSPF, OSPFv3, BGP and IS-IS(pending) • Routing policy • VRRP(pending)	
Multicast	• IGMP snooping with IGMPv1 and IGMPv2 • MLD snooping with MLDv1 and MLDv2 • MVR	
QoS/ACL	• Port priority • Priority mapping • Queue scheduling, including SP, WRR, WFQ, SP-WRR and SP-WFQ • Traffic shaping • Rate limit • 2K ACL for Ethernet, IPv4 and IPv6	
DHCP	DHCP server, DHCP relay, Option 82, 60, 160 and 43	
Maintenance	CPU and memory monitoring, SNMP, RMON, LLDP&LLDP-MED, backup and restore, syslog, diagnostics including Ping, Traceroute, mirroring, UDLD(pending) and copper test	
Security	• User hierarchical management and password protection, HTTPS, SSH, Telnet • Identity authentication including 802.1X and MAC authentication • AAA authentication including RADIUS, TACACS+ • Storm control • Port isolation, port security, sticky MAC • Filtering MAC address • IP source guard, DoS attack prevention, ARP inspection • DHCP Snooping • Loop protection including BPDU protection, root protection and loopback • protection • Kensington Security Slot (Kensington Lock) support	
Mounting	Desktop, or Rack-Mount (rack-mounting kits included)	
System LEDs	1x tri-color LED for device tracking and status indication	
Power Supply LEDs	/	2x green-color LEDs for per power supply PWR&RPS
PoE Powered LEDs	8x yellow-color LEDs	24x yellow-color LEDs
Data Transferring LEDs	10x green-color LEDs	28x green-color LEDs
Fan	2	2
Environmental	Operation: 0°C to 45°C, humidity 10% to 90% RH(Non-condensing) Storage: -10°C to 60°C, humidity: 10% to 90% RH(Non-condensing)	
Dimensions	330mm(L)x175mm(W)x44mm(H)	440mm(L)x300mm(W)x44mm(H)
Unit Weight	1.9Kg	4.1Kg
Package Content	1x Switch	
	1x 1.2m AC Cable	
	1x 25cm Ground Cable	
	4x Rubber Footpads	
	1x Power Cord Anti-Trip	
	2x Extended Rack-Mounting Kits	2x Rack-Mounting Kits
	/	1x RPS, External Redundant Power Supply(Optional)
	8x Screws(KM 3*6)	
	1x Quick Installation Guide	
	1x Console Cable (Optional)	
Compliance	FCC, CE, RCM, IC	

Features & Benefits

Powerful Processing Capabilities
- Routing including static routing, dynamic routing, policy routing and routing policy to realize routing data communication between different network segments. Simpler, more efficient and more reliable.
- DHCP Server and Relay to assign IP address to hosts in the network.
- QoS, including Port Priority, Priority Mapping, Queue Scheduling, Traffic Shaping and Rate Limit.
- ACL to realize the filtering of data packets by configuring matching rules, processing operations and time schedule, and provide flexible security access control policies.
- IGMP Snooping and MLD Snooping to meet the needs of multi-terminal HD video surveillance and video conference.
- IPv6 to meet the needs of the network transition from IPv4 to IPv6.
- 1588 PTP TC satisfies high-precision time synchronization between network devices, improves security while reducing costs compared to GPS time synchronization schemes.
- Stacking (pending) provides powerful network expansion capability. By adding member devices, you can easily expand the number of ports, bandwidth and processing capacity of the stacking system.

Multi-Layer Security Protection
- Static MAC table, dynamic MAC table to allow data transmission, and filter MAC table to avoid network attacks.
- Packet filtering based on binding of IP address, MAC address, VLAN and port.
- Dynamic ARP Inspection to protect against ARP spoofing and ARP flooding attacks such as gateway spoofing, man-in-the middle attacks and etc. that are common in LAN environment.
- IP/IPv6 Source Guard to prevent illegal address spoofing including IP/MAC/VLAN spoofing and IP/VLAN spoofing.
- DoS Attack Defense, including Land Attack, Smurf Attack, TCP SYN Attack, Ping Flooding and more.
- 802.1X, MAC, RADIUS, AAA, TACACS+ authentications to provide authentication function for LAN devices.
- Supports port security. When the number of MAC addresses learned by a port reaches the maximum number, it will be set to error-down status automatically or stop learning to prevent MAC address attack and control the network traffic of the port.
- Supports DHCP/DHCPv6 Snooping. Only allow DHCP/DHCPv6 packets from trusted ports to keep the enterprise DHCP/DHCPv6 environment safe.

IPv4/IPv6 Dual Protocol Stack
- IPv4 routing protocol, including IPv4 unicast routing to satisfy different networking needs.
- IPv6 routing protocols, including IPv6 unicast routing to satisfy different networking needs.
- Supports IPv6 static routing, RIPng, OSPFv3, IS-IS, BGP and IPv6 multicast to meet the requirements of IPv6 independent networking and IPv4/IPv6 hybrid networking.
- Policy routing can not only flexibly adjust routing paths according to actual needs to meet different network requirements, but also dynamically select routing paths based on network load, thereby achieving load balancing.

Power & Green Energy Efficiency
- High efficiency power supply module, higher efficiency of power supply system.
- All Ethernet ports support EEE (Energy Efficient Ethernet), fast transitions between normal operation and low power states with low traffic and low power consumption
- Intelligent control of fan speed based on environmental temperature. Precise temperature control, energy saving and noise reduction

Enterprise Grade Reliability
- RPS, External redundant power module(optional), ensures stable business use continuously.
- Support fault detection and alarm for power supply and fan, and automatically adjust the fan speed based on temperature changes to better adapt to the environment.
- Multiple reliability protection at device level, such as overcurrent protection, overvoltage protection, overheat technology and surge protection.
- Dual boot of hardware level. Use two FLASH chips to store boot software (system boot program), achieve hardware level boot redundancy backup, and avoid switching failure due to FLASH chip failures.
- Dual system file redundancy backup ensures the normal startup and operation of the system, and improves the stability of the device.
- STP/RSTP/MSTP to guarantee fast convergence, improve fault tolerance, ensure stable network and provide link load balance, and redundancy.
- Compatible with PVST/PVST+ for faster convergence. Optimizing network performance through VLAN-based network load balance.
- ERPS (pending), loopback detection to identify and remove loops on the network.
- VRRP (pending) to minimize network downtime caused by gateway failure.
- Link aggregation to increase bandwidth, improve reliability and load balancing.
- Storm control to prevent traffic interruption caused by broadcast, multicast or certain unicast packets.
- Stacking (pending) supports the logical virtualization of up to 4 switches into one. It improves the device-level reliability through redundant backup between multiple member devices and the link-level reliability through the link aggregation function across devices.

Smart PoE Capabilities
- PoE power supply and comply with the IEEE 802.3af/at/bt standards to meet the PoE power supply requirements of security monitoring, audio and video conferencing, wireless signal coverage and more scenarios.
- Supports setting user-defined time period to control the power supply of PoE port on Web GUI.
- Setting priority of PoE ports. When remaining power is insufficient, it will power the ports based on priorities.
- Users can configure the maximum power allowed per port. The maximum limit is 60w per 2.5G port, 30w per 1G port .
- Dynamic power negotiation via LLDP-MED

Easy Management and Maintenance
- Managed by Web GUI, CLI (Console, Telnet, SSH) and SNMP (v1/v2c/v3).
- Monitoring of CPU and memory usage. Support common networking tools such as Ping, Traceroute, UDLD (pending) and Copper Test to analysis networking issues.
- Supports RMON, Syslog, traffic statistics and sFlow (pending) for network optimization.
- LLDP and LLDP-MED for automatic discovery, provisioning and management of endpoint devices.
- Managed by GWN router, GDMS Networking and GWN Manager.
- Stacking (pending) simplifies configuration and management. After stacking is formed, multiple physical devices become a virtual device. Users can log in to the stacking system through any member device to uniformly configure and manage all member devices of the stacking systems