

CAMPUS & ACCESS

# CAMPUS AND ACCESS SWITCH

## SN-2312G-2XGF

L2, 12\*1G ETH+ 2\*10G, no PoE, USB+OOB+Console



## HIGHLIGHTS

- Seamless Stack Management: Control Up to 8 Switches as One,
- Advanced QinQ Stacking for Multi-Tenant Networks and
- Support Layer 3 (Optional)
- Supports PoE+ or PoE++ (Optional)
- The switch model with a 1G SFP uplink port does not support the stacking feature.
- Each switch has USB, OOB, and Console interfaces. In PoE-enabled devices, all 12 ports support PoE.
- Enterprise access switching with high-speed fiber uplinks
- Advanced Layer 2 and Layer 3 network services
- Secure management, policy enforcement, and traffic control
- Flexible PoE, power, and cooling options across supported models

**2312G-2XGF**

MODEL

**CAMPUS & ACCESS**

PLATFORM

**CUSTOM CONFIGURATION**

AVAILABLE

## PRODUCT SPECIFICATIONS

SN-2312G-2XGF is a campus and access switch configured for L2, 12\*1G ETH+ 2\*10G, no PoE, USB+OOB+Console.

|                      |                                                  |
|----------------------|--------------------------------------------------|
| Product              | SN-2312G-2XGF                                    |
| Platform             | Campus and Access Switch                         |
| Application          | L2, 12*1G ETH+ 2*10G, no PoE, USB+OOB+Console    |
| Source specification | Corresponding technical product series datasheet |

### Technical Characteristics

| Characteristic        | Specification                                     |
|-----------------------|---------------------------------------------------|
| MTBF                  | MTBF 100,000h                                     |
| Operating Temperature | Operating temperature -5°C (23°F) to 65°C (149°F) |
| Operating Humidity    | Humidity 5% ~ 95% non-condensing                  |
| MAC Address Table     | MAC address table Max 16k                         |
| Packet Buffer         | Packet buffer size 3 MB                           |

*The product configuration and applicable interface, power, cooling, and software options are defined by the selected model and project requirements.*

# NETWORK FEATURES

## Quality of Service

|                                                   |                                             |
|---------------------------------------------------|---------------------------------------------|
| Traffic classification and prioritization         | Strict priority and weighted scheduling     |
| Rate limiting, traffic shaping, and policing      | Policy maps and class-based traffic actions |
| QoS based on IP, MAC, VLAN, and protocol criteria |                                             |

## Security

|                                           |                                             |
|-------------------------------------------|---------------------------------------------|
| RADIUS and TACACS+ authentication         | Port security and role-based access control |
| DHCP snooping and IP source protection    | Access-control lists and management ACLs    |
| DoS protection, secure copy, SSH, and SSL |                                             |

## Layer 2

|                                               |                                                   |
|-----------------------------------------------|---------------------------------------------------|
| 802.1Q VLANs, QinQ, and private VLAN services | STP, RSTP, and MSTP loop prevention               |
| Link aggregation and LACP                     | Port mirroring, isolation, and loopback detection |
| LLDP and LLDP-MED neighbor discovery          |                                                   |

## Layer 3

|                                                       |                                         |
|-------------------------------------------------------|-----------------------------------------|
| IPv4 and IPv6 dual-stack operation                    | Static routing and inter-VLAN routing   |
| Policy-based routing and route maps                   | DHCP server, relay, and client services |
| OSPF and RIP capabilities on supported configurations |                                         |

## Multicast

|                             |                                                   |
|-----------------------------|---------------------------------------------------|
| IGMP and MLD snooping       | PIM multicast routing on supported configurations |
| Multicast VLAN registration | Traffic containment and multicast policy control  |

## High Availability

|                                                             |                                                         |
|-------------------------------------------------------------|---------------------------------------------------------|
| Redundant network protocols and equal-cost multipath        | Virtual router redundancy                               |
| Storm control for broadcast, multicast, and unicast traffic | Stacking or redundant chassis operation where supported |

# MANAGEMENT & COMPLIANCE

## Management

|                                                  |                                                          |
|--------------------------------------------------|----------------------------------------------------------|
| Web-based graphical interface                    | Industry-standard command-line interface                 |
| SSH, Telnet, SNMP, and syslog integration        | Controller-based or standalone operation where supported |
| USB, console, and out-of-band management options |                                                          |

## Monitoring and Diagnostics

|                                                                |                                         |
|----------------------------------------------------------------|-----------------------------------------|
| System event, alarm, and operating logs                        | Port and traffic statistics             |
| Temperature, power-supply, and fan monitoring where applicable | Ping, traceroute, and cable diagnostics |
| Digital diagnostic monitoring on supported optical interfaces  |                                         |

## Standards and Compliance

|                                                   |                                                       |
|---------------------------------------------------|-------------------------------------------------------|
| IEEE 802.1 and 802.3 Ethernet standards           | RoHS environmental compliance                         |
| CE and FCC regulatory conformity where applicable | Energy-efficient Ethernet on supported configurations |
| PoE and PoE+ standards on power-enabled models    |                                                       |

## Source-Specified Standards

|                                                                                                       |
|-------------------------------------------------------------------------------------------------------|
| Optimized Voice VLAN with Intelligent QoS for Lag-Free VoIP                                           |
| Performance                                                                                           |
| Quality of Service                                                                                    |
| Flow mirror, 802.1p Support SP+WRR                                                                    |
| AAA (Authentication, Authorization, and Accounting) 802.1x authentication (Port Based, MAC Based, Web |
| IP source guard DoS prevention                                                                        |
| Guest VLAN Auto voice VLAN                                                                            |
| QinQ (802.1Q) Loop guard                                                                              |

# DETAILED TECHNICAL SPECIFICATIONS

TECHNICAL DATA | 1 OF 6

## HARDWARE SPECIFICATIONS

|                 | 1G RJ45<br>Downlinks | 1G Fiber<br>Uplinks | 10G Fiber<br>Uplinks | PoE/<br>W | Switching<br>capacity/<br>Gbps | Forwarding<br>rate/<br>Mpps |
|-----------------|----------------------|---------------------|----------------------|-----------|--------------------------------|-----------------------------|
| SN-2312GP-2XGF  | 12                   | -                   | 2                    | 180       | 64                             | 47.62                       |
| SN-2312GMP-2XGF | 12                   | -                   | 2                    | 400       | 64                             | 47.62                       |
| SN-2312G-2XGF   | 12                   | -                   | 2                    | -         | 64                             | 47.62                       |
| SN-2312G-2GF    | 12                   | 2                   | -                    | -         | 28                             | 20.83                       |

The switch model with a 1G SFP uplink port does not support the stacking feature.

Each switch has USB, OOB, and Console interfaces. In PoE-enabled devices, all 12 ports support PoE.

## Hardware

|                 |                              |
|-----------------|------------------------------|
| Marvell Chipset | 98DX2518                     |
| MTBF            | 100,000h                     |
| Case            | 440*250*44 (L*W*H)           |
| Weight          | PoE: 3.5KG<br>Non PoE: 2.8KG |

## Environment

|                       |                                     |
|-----------------------|-------------------------------------|
| Operating temperature | -5 ° C (23 ° F) to 65 ° C (149 ° F) |
| Humidity              | 5% ~ 95% non-condensing             |

## Capacity

|                          |             |
|--------------------------|-------------|
| MAC address table        | Max 16k     |
| Packet buffer size       | 3 MB        |
| Active VLANs support     | 4096        |
| Maximum jumbo frame size | 9,216 bytes |

# DETAILED TECHNICAL SPECIFICATIONS

TECHNICAL DATA | 2 OF 6

## SOFTWARE FEATURES

### Quality of Service

|                                                         |                                                                                     |
|---------------------------------------------------------|-------------------------------------------------------------------------------------|
| DiffServ (Differentiated services)                      | Strict priority support                                                             |
| Priority queue                                          | Traffic shaping/policing                                                            |
| ACL mapping to priority queue                           | WRR support                                                                         |
| Flow mirror, 802.1p Support                             | SP+WRR                                                                              |
| Flow redirection                                        | Rate limiting (Based on per port and per queue)                                     |
| Single Rate Three Color Marker (srTCM)                  | Class map defines traffic flow with ACLs or support for network traffic management  |
| Two Rate Three Color Marker (trTCM)                     | Policy map & route MAP to define the action for a set of classified inbound traffic |
| QoS based on classification (Based on IP, MAC and VLAN) |                                                                                     |

### Security

|                                                     |                                                          |
|-----------------------------------------------------|----------------------------------------------------------|
| RADIUS, TACACS+                                     | Downloadable ACL                                         |
| Port security                                       | Dynamic ACL                                              |
| DHCP Snooping                                       | Role based access control                                |
| AAA (Authentication, Authorization, and Accounting) | 802.1x authentication (Port Based, MAC Based, Web Based) |
| ACL (Based On IP, Port, Protocol, MAC, Time Based)  | Management ACL                                           |
| IP source guard                                     | DoS prevention                                           |
| Protected port                                      | Secure copy (SCP)                                        |
| ARP inspection (DAI & SAI)                          | Kerberos                                                 |
| SSL                                                 |                                                          |

### Multicast

|                                                   |                                         |
|---------------------------------------------------|-----------------------------------------|
| Internet Group Management Protocol -IGMP v1/v2/v3 | Multicast Listener Discovery- MLD v1/V2 |
| IGMP snooping                                     | MLD snooping                            |
| PIM-SM/SSM                                        | Multicast TV VLAN                       |
| PIM-SMv6                                          | MVR (Multicast VLAN registration)       |

# DETAILED TECHNICAL SPECIFICATIONS

TECHNICAL DATA | 3 OF 6

## Layer 2

|                                 |                                          |
|---------------------------------|------------------------------------------|
| Port Tagging/untagged           | BPDU guard                               |
| MAC based VLANs                 | GVRP                                     |
| Private VLAN                    | LLDP/LLDP MED                            |
| Subnet based VLAN               | RADIUS assigned VLAN                     |
| Auto MDI/MDIX                   | Link aggregation (Ether Channel)         |
| Loopback detection              | Link Aggregation Control Protocol (LACP) |
| Port isolation                  | Port mirroring (Port, ACL, VLAN Based)   |
| Root guard                      | Default VLAN                             |
| Guest VLAN                      | Auto voice VLAN                          |
| Energy Efficient Ethernet (EEE) | Green Ethernet                           |
| Link flapping detection         | Flow control                             |
| STP/RSTP/MSTP                   | Native VLAN                              |
| QinQ (802.1Q)                   | Loop guard                               |

## Layer 3

|                                                          |                                                     |
|----------------------------------------------------------|-----------------------------------------------------|
| IPv4 and IPv6 dual stack                                 | IPv6 prefix list                                    |
| Intra-Site Automatic Tunnel Addressing Protocol (ISATAP) | IP source guard                                     |
| Policy Based Routing (PBR)                               | DHCP server                                         |
| ARP, Gratuitous ARP                                      | DHCP relay                                          |
| DHCP Client                                              | IPv6 NDRA (Neighbor Discovery Router Advertisement) |
| ICMP redirect & ICMP unreachable                         | Duplicate Address Detection (DAD)                   |
| IPv6 SLAAC (Stateless Address Auto configuration)        | IPv6 ND                                             |
| ARP-Proxy                                                | DHCP Option 82, 66, 67                              |

## Layer 3 Routing

|                                                 |                                      |
|-------------------------------------------------|--------------------------------------|
| Static routing (IPv4, IPv6)                     | Inter-VLAN routing                   |
| Routing Information Protocol, version 2 (RIPv2) | OSPFv2/v3 (Open Shortest Path First) |

## High Availability

|                                               |                                           |
|-----------------------------------------------|-------------------------------------------|
| Stacking (Up-to 8 members)                    | Ring Redundancy Protocol (RRP)            |
| Equal-Cost Multi Path (ECMP)                  | Virtual Router Redundancy Protocol (VRRP) |
| Storm control (Broadcast, Multicast, Unicast) |                                           |

# DETAILED TECHNICAL SPECIFICATIONS

TECHNICAL DATA | 4 OF 6

## Management

|                                    |                                            |
|------------------------------------|--------------------------------------------|
| Local GUI                          | Management: RUDDER (Controller)/Standalone |
| Industrial standard CLI            | SPAN/RSPAN                                 |
| Telnet support                     | SSHv1/v2                                   |
| Storage & File management with USB | Firmware auto install support              |
| TFTP support                       | Syslog server                              |
| SNMP v1/v2c/v3                     | RMON (All 4 Groups 1,2,3,9)                |

## Standard Compliance

|                                                                            |                                   |
|----------------------------------------------------------------------------|-----------------------------------|
| <i>IEEE Standards Compliance</i>                                           |                                   |
| 802.1AB LLDP/ LLDP-MED                                                     | 802.3ae 10 gigabit Ethernet       |
| 802.1D MAC bridging                                                        | 802.3at power over Ethernet Plus  |
| 802.1p Mapping to priority queue                                           | 802.3u 100Base-TX                 |
| 802.1s Multiple Spanning Tree (MST)                                        | 802.3x flow contro                |
| 802.1w Rapid Reconfiguration of Spanning Tree (RSTP) 802.3z 1000Base-SX/LX |                                   |
| 802.1x Port-based Network Access Control (PNAC)                            | 802.3 MAU MIB (RFC 2239)          |
| 802.3 Carrier Sense Multiple Access/Collision Detection(CSMA/CD)           | 802.1Q VLAN tagging               |
| 802.3ab 1000Base-T                                                         | 802.3az Energy Efficient Ethernet |
| 802.3 10Base-T                                                             | 802.3af Power over Ethernet       |
| 802.3ad link aggregation (Dynamic and Static)                              |                                   |

## Monitoring and Troubleshooting

|                                            |                                      |
|--------------------------------------------|--------------------------------------|
| Errdisable detection and recovery          | CPU Utilization                      |
| Device temp/PSU/FAN/status display & alarm | User operation logs                  |
| Virtual cable test                         | Management logs, alarms              |
| ICMPv4/v6                                  | DDM (Digital Diagnostic Monitoring)  |
| Traceroute                                 | UDLD (Unidirectional Link Detection) |

## Packaging Content

Switch with type D power cord with rack mounting kit





# DETAILED TECHNICAL SPECIFICATIONS

TECHNICAL DATA | 5 OF 6

## CERTIFICATION & COMPLIANCES

| Regulatory | Environmental |
|------------|---------------|
| FCC        | RoHS          |
| BIS        | CE            |
| TEC        |               |



# DETAILED TECHNICAL SPECIFICATIONS

TECHNICAL DATA | 6 OF 6

## ORDERING INFORMATION

| Models          | Description                |
|-----------------|----------------------------|
| SN-2312GP-2XGF  | 12x1G ETH+ 2x10G, PoE 180W |
| SN-2312GMP-2XGF | 12x1G ETH+ 2x10G, PoE 400W |
| SN-2312G-2XGF   | 12x1G ETH+ 2x10G, no PoE   |
| SN-2312G-2GF    | 12x1G ETH+ 2x1G, no PoE    |

*In all configurations: USB, OOB, and Console.*

*All switches include a 1-year HW Warranty.*

# SUPPORT & CUSTOM ENGINEERING

| Service Area          | SIDERA Intelligent Systems Capability                                         |
|-----------------------|-------------------------------------------------------------------------------|
| Technical support     | Pre-sales, deployment, configuration, and operational assistance              |
| Product customization | Customer-specific hardware, software, interface, and mechanical modifications |
| Project engineering   | Application review, design adaptation, validation, and implementation support |
| Lifecycle support     | Documentation, troubleshooting, maintenance guidance, and upgrade planning    |

## TECHNICAL SUPPORT & CUSTOM ENGINEERING

SIDERA Intelligent Systems provides comprehensive technical support and customer-specific product customization, tailored to individual operational and project requirements.

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Technical specifications are subject to change without notice.