



Flexible WAN Connectivity with High Availability for Small Offices

- Multiple WAN interface support for various connectivity options
- Supports VDSL bonding to expand bandwidth for fixed-lines (SBG3500-N)
- 802.11n technology for extreme performance
- VPN, Firewall and URL/key word filtering provide solid data security
- Comprehensive mobile broadband USB dongle compatibility and multi-WAN load-balancing, failover and fall back support

Networking services are now becoming more imperative for small businesses to take advantage of easy communication and effective services. The ZyXEL SBG3500-N Series Wireless N Fiber WAN Small Business Gateway is the “multi-WAN gateway” that provides high-speed Internet access for business users. Featuring not only VDSL2/ADSL2+ functionality but also one GbE WAN with Small Form Pluggable (SFP) interface, this device offers flexible multiple-WAN connectivity to adopt various Internet interfaces. It also enhances network performance for small businesses to pursue the ultimate success.

Benefits

Multi-WAN connectivity with load balancing and failover

The ZyXEL SBG3500-N Series provides multiple WAN interfaces, including DSL and Gigabit Ethernet, for load balancing and WAN backup. Service providers can flexibly offer WAN services of the highest availability in one single box for small business owners to enjoy non-stop services. Powered by the load balancing and fail-over mechanisms among multiple WANs, it maximizes WAN stability for mission-critical Internet applications with benefits of the integrated bandwidth.

Increased bandwidth and flexible range

The advanced VDSL2/ADSL2+ bonding* and dual-personality Ethernet WAN functionalities enable service providers to increase bandwidth and extend coverage. With the available copper lines, service providers can take advantage of VDSL2/ADSL2+ bonding to not only provide higher speeds for the existing subscribers, but also improve the user experience for those who are far away from the cabinet with stable, sufficient bandwidth regardless of the distance. Besides, if fiber lines are preferred, the ZyXEL SBG3500-N Series can use the Small Form Pluggable (SFP) interface to connect Fiber Ethernet for distances much longer than Gigabit networks, or simply connect to other Ethernet WAN devices without additional cost laying new fiber.

*VDSL2/ADSL2+ bonding only support in SBG3500-N (Annex A)

Robust security design

Based on Access Control List (ACL) rules, Stateful Packet Inspection (SPI), Denial of Service (DoS) and Distributed Denial of Service (DDoS) measures, the ZyXEL SBG3500-N Series provides the first-line defense against hackers, network intruders and other harmful threats. The configurable Demilitarized Zone (DMZ) is another benefit that provides more flexible accessibility while preventing external attacks toward the confidential resources and databases.



SBG3500-N Series
Wireless N Fiber WAN
Small Business Gateway



Model List

SBG3500-N



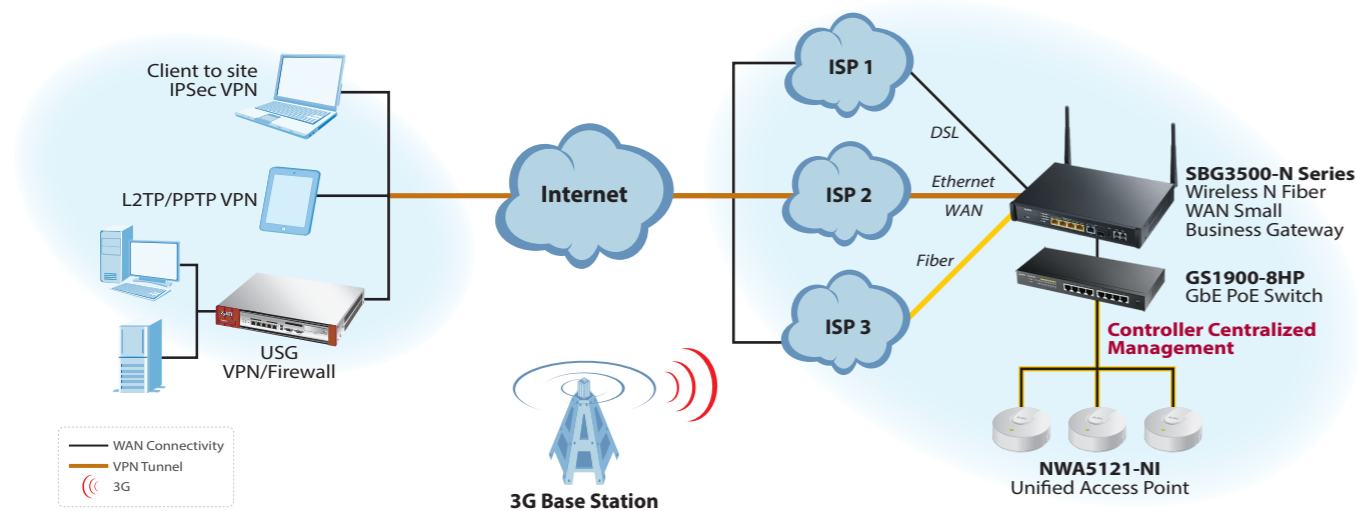
- 4 x GbE LAN ports
- 1 x GbE WAN port
- 1 x SFP port
- 1 x USB port
- 2 x RJ-11 DSL ports

SBG3500-NB



- 4 x GbE LAN ports
- 1 x GbE WAN port
- 1 x SFP port
- 1 x USB port
- 1 x RJ-45 DSL port

Key Applications



Specifications

Model	SBG3500-N	SBG3500-NB
Hardware Specifications		
DSL	VDSL2/ADSL2+ 17a bonding, 2 x RJ-11 (DSL)	VDSL2/ADSL2+ 17a single line, 1 x RJ-45 (DSL)
Ethernet WAN	RJ-45/SFP dual personality	
LAN port	4	
DMZ	V (LAN selectable)	
USB port	1	
3G/4G	External mobile USB dongle	
System Capacity & Performance		
SPI firewall throughput (Mbps)	800 Mbps	
VPN throughput (Mbps)	40 Mbps	
Max. concurrent IPsec	20	
VLAN interface	16	
WLAN Management		
AP controller	Yes	
Managed AP number (default/max.)	2/10	
Wireless Specifications		
Standard compliance	802.11 b/g/n	
Wireless frequency	2.4 GHz	
Radio	1	
SSID number	4	
Maximum transmit power	EU (ETSI) 2.4 GHz	20 dBm, 2 antennas
No. of antenna	2.4 GHz: 2T2R MIMO (Detachable, SMA-R)	
Antenna gain	3 dBi	
Data rate	<ul style="list-style-type: none"> • 802.11 b/g: 1, 2, 5.5, 6, 9, 11, 12, 18, 24, 36, 48 and 54 Mbps • 802.11n: up to 300 Mbps in MCS15 (40 MHz; GI = 400 ns) 	
Receive sensitivity (2.4 GHz)	<ul style="list-style-type: none"> • 11 Mbps ≤ -76 dBm; 54 Mbps ≤ -65 dBm • HT20 ≤ -64 dBm; HT40 ≤ -61 dBm 	
Key Software Features		
WAN load balancing/failover	Yes	
Virtual Private Network (VPN)	Yes (IPsec, PPTP/L2TP over IPsec)	
VPN failover/fallback	Yes	
Captive portal	Yes	
Access control list	Yes	
SNMP MIB II	Yes	
TR-069	Yes	
Power Requirements		
Power input	12 VDC, 2 A	
Max. power consumption (watt)	15.3	
Physical Specifications		
Rack mountable	Yes	
Included accessories	<ul style="list-style-type: none"> • Ethernet cable • DSL cable • Power adapter • Rack mount bracket and screws 	
Item	Dimensions (WxDxH)(mm/in.)	242 x 170 x 36/9.53 x 6.69 x 1.42
	Weight (kg/lb.)	1.19/2.62
Packing	Dimensions (WxDxH)(mm/in.)	343 x 209 x 75/13.50 x 8.23 x 2.95
	Weight (kg/lb.)	1.93/4.26
Environmental Specifications		
Operating	Temperature	0°C to 40°C/32°F to 104°F
	Humidity	10% to 95% (non-condensing)
Storage	Temperature	-30°C to 70°C/-22°F to 158°F
	Humidity	10% to 95% (non-condensing)
Others		
MTBF (hr)	300,000	

Features

Software Features

High Availability WAN

- 3 WAN interface (VDSL, Ethernet/SFP) options
- User configurable multi-WAN load balancing with one WAN for failover/fallback

VDSL Compliance

- G.993.1 VDSL, G.993.2 VDSL2 Annex A/B compliant, band plan 997, 998
- G.994.1 (G.hs) Handshake, G.997.1
- Support VDSL profiles up to 17a
- Packet Transfer Mode (PTM) 17a bonding
- Rate adaption
- Seamless Rate Adaption (SRA)
- INP: Up to 16 symbols
- G.INP, G.Vector
- PhyR configurable

ADSL Compliance

- G.992.1 (G.dmt), G.992.2 (G.lite) Annex A/B compliant
- G.992.3 (ADSL2), G.992.5 (ADSL2+) Annex A/B compliant
- Reach-Extended ADSL (RE ADSL)
- Seamless Rate Adaptation (SRA)
- PPP over ATM AAL5 (RFC2364)
- Support VC-based and LLC-based multiplexing
- ATM traffic shaping (CBR, VBR-rt/nrt, UBR)
- PhyR configurable Ethernet/SFP WAN
- Ethernet WAN and SFP dual personality

Networking

- N-way, automatic speed negotiation supported
- Auto-sensing, auto-detection MDI/MDIX Bridge/Router
- Dynamic learning for up to 1024 MAC address
- PPPoE, PPPoA, IPoE, IPoA (RFC 1483)
- DHCP client/server/relay
- DHCP option 43/60/61/66/121/125/138/150
- DHCP client table
- DNS proxy, DDNS
- RIP I/RIP II supported
- Adjustable MTU size

- QoS classification route, queuing and scheduling
- Interface grouping
- IPv6 support

VPN

- Simple wizard support (Express wizard)
- Concurrent 20 IPsec VPN tunnels
- IPsec, PPTP and L2TP over IPsec VPN
- IPsec HW engine
- Algorithm: AES (128/192/256)/3DES/DES
- Authentication: SHA-1/MD5
- Auto reconnect VPN
- VPN failover/fallback

Firewall & Security

- Full cone NAT/Symmetric NAT/Restrict Cone NAT, NAT ALGs
- 20,000 NAT sessions supported
- Configurable DMZ
- PPTP/IPsec/L2TP pass through
- PAP/CHAP/MS-CHAP v1 and v2
- Stateful packet inspection
- DoS/DDoS protection
- URL/key word filtering
- Access control: up to 256 ACL rules
- Directional ACL rule support

USB

- FTP file sharing
- Supported file system: FAT16/32, EXT2/3
- Support mobile broadband dongle
- Support WWAN package update
- 3G budget control

Wi-Fi Specifications

- IEEE 802.11n compliance, backward compatible with 802.11 b/g
- Dynamic auto channel selection
- WPS on/off configuration in Web GUI
- Multiple number of SSID: Up to 4
- Per-SSID VLAN binding
- WEP data encryption 64/128 bit
- WPA/WPA-PSK with TKIP & AES security type
- WPA2/WPA2-PSK with TKIP & AES security type

- IEEE 802.1x (EAP-MD5, TLS and TTLS)
- 32 MAC filter
- Client connection: A maximum of 32 clients simultaneously connect to the AP
- Adjustable WLAN output power (via CLI, XML)
- Web-based authentication

WLAN Management

- ZyXEL AP Controller (APC) Lite compliant
- Client RSSI threshold to prevent sticky clients
- Wireless Layer 2 isolation
- RADIUS authentication
- Wi-Fi Multimedia (WMM) wireless QoS
- CAPWAP discovery protocol
- ZyXEL Wireless Optimizer (ZWO) AP planning

System Management

- Two-tier log in
- Login privilege
- Dual image firmware protection
- Text based configuration (XML based)
- Support TR-069, TR-098, and TR-111
- SNMP v1, v2c
- Rom-D support
- Syslog
- User management (user data base/profile)

Certification

EMC/RF

- EN 300 328 V1.8.1 (2012-06)
- EN 301 489-1 V1.9.2 (2011-09)
- EN 301 489-17 V2.2.1 (2012-09)
- EN 55022: 2010/AC: 2011
- EN 61000-3-2: 2006+A1: 2009+A2: 2009
- EN 61000-3-3: 2008
- EN 55024: 2010

Safety

- EN 60950-1: 2006+A11: 2009+A1: 2010+A12: 2011

ErP

- EN 50564: 2011 (IEC 62301 Modified)
- EN 50563: 2011

RoHS 2

- EN 50581: 2012

Access Point Compatibility List

Series	NWA3000-N Series	NWA5000 Series	NWA5120 Series
	Unified Pro Access Point	Managed Access Point	Unified Access Point
Model	NWA3160-N NWA3560-N NWA3550-N	NWA5160N NWA5560-N NWA5550-N	NWA5121-NI NWA5121-N NWA5123-NI NWA5301-NJ
Functions			
Central management	Yes	Yes	Yes
Auto provisioning	Yes	Yes	Yes
Data forwarding	Local bridge	Local bridge	Local bridge

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