

PRELIMINARY

## AT-8000GS/48

### Layer 2 Stackable Gigabit Ethernet Switch

#### AT-8000GS/48

48 port stackable 10/100/1000T Layer 2 switch with 4 standby SFP bays (unpopulated)

#### Overview

One of a series of high performance Gigabit Ethernet stackable switches from Allied Telesis, the AT-8000GS/48 provides high performance Layer 2 switching in an affordable fixed configuration platform. This switch offers 48 10/100/1000 ports, with four fixed 1Gbps SFP slots plus two integrated stacking connectors that deliver a total of 20Gbps stacking bandwidth. The stacking capability integrated into this platform is configured as a resilient ring topology designed to provide high reliability and simplified management for higher port density applications. Support for jumbo Ethernet frames enables higher throughput of time sensitive data.

#### Near Silent Operation

Specifically designed to be usable in an open office or retail store environment the AT-8000GS/48 uses the latest in low power technologies to minimize both power consumption and the need for excessive cooling fans.

#### Ideal Branch Office and Wiring Closet Connectivity

Powerful line rate performance and stackability make this switch ideal for branch offices or the wiring closet of larger offices. The state-of-the-art QoS capability of this product ensures reliable delivery of advanced network services such as voice while effectively controlling the continually increasing traffic needs found in today's networks.

#### Easy Access Networking

Featuring an industry standard CLI and Allied Telesis' intuitive yet fully featured Web interface the advanced features of the AT-8000GS/48 are accessible to a wide range of system administrators. The well known CLI and Web interfaces significantly reduce learning time and minimize the cost of deployment.

#### Secure Management

Only authorized administrators can access the management interface of the 8000GS series. Protocols such as SSL, SSH and SNMPv3 facilitate this protection of your network with local or remote connections.

#### Securing the Network Edge

To ensure the protection of your data, it is important to control access to your network. Protocols such as IEEE 802.1x port-based authentication guarantee that only known users are connected to the network. Unknown users who physically connect can be isolated to a pre-determined part of your network offering guests such benefits as Internet access while ensuring the integrity of your private network data.

#### Key Features

##### Easy, Well Known Management

- Industry standard CLI
- Simple intuitive, full featured Allied Telesis Web Interface
- Secure encrypted Web and CLI management with SSHv2 and SSL
- Two levels access privileges
- SNMP

##### Affordable Truly Stackable 10/100/1000 Switching Platform

- Single IP address stack management
- 20Gig resilient ring stacking architecture
- Across stack link aggregation
- Across stack VLAN configuration
- Across stack port mirroring
- Redundant standby stack master

##### All the QoS Needed in the Wiring Closet for Today's Voice and Data Networking

- Eight priorities assigned to four queues
- IEEE 802.1p for Layer 2 QoS
- DSCP (DiffServ) for Layer 3 QoS
- IEEE 802.1p to DSCP remarking traffic ready for transport to the Layer 3 core of the network
- Layer 2 and Layer 3 Access Control Lists (ACL)

##### Securing the Network at its Most Vulnerable Point

- IEEE 802.1x and RADIUS network login: *for advanced control of user authentication and accountability*
- Guest VLAN: *to ensure visitors or unauthorized users connect only to services defined by IT. E.g. Internet*
- TACACS+: *for ease of management security administration*
- Layer 2 and Layer 3 Access Control Lists (ACL)
- Port MAC Address security options

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## Access Control Lists (ACLs)

Access Control Lists enable inspection of incoming frames and classify them based on various criteria. Specific actions can then be applied to these frames in order to more effectively manage the network traffic. Typically ACLs are used as a security mechanism, either permitting or denying entry (hence the name Access Control) for frames in a group, but can also be applied to QoS.

Supported ACL types are:

- IP ACLs – applicable to IP packet type. All classification fields are related to IP packets.
- MAC ACLs – classification fields are based on Layer 2 fields.

## Technical Specifications

### System Configuration

Dimensions (W x D x H)	44cm x 25.8cm x 4.32cm (17.32" x 10.16" x 1.7")
Weight	7.62kg (16.8lb)
Mounting	19" rack-mountable hardware included

### System Capacity

128MB RAM
16MB flash memory
Up to 4,096 VLAN ID
8,000 MAC address

### Performance

Wirespeed switching on all Ethernet ports for all packet sizes including jumbo frames up to 10Kbytes	
Throughput up to	86.3Mpps
Switching capacity	116Gbps
Switch fabric speed	136Gbps

Port speed:

10/100TX	RJ-45
10/100/1000T	RJ-45
100FX, 1000SX, 1000LX	SFP slot
Console RS232	RJ-45 connector

## Interface Standards

IEEE 802.3	10T and 10FL
IEEE 802.3u	100TX and 100FX
IEEE 802.3z	1000SX
IEEE 802.3ab	1000T

## General Standards

IEEE 802.1D	Bridging
IEEE 802.3x	BackPressure/flow control

## Redundancy Standards

IEEE 802.1D	Spanning-Tree Protocol with optional fast link capability
IEEE 802.1W	Rapid Spanning-Tree
IEEE 802.1s	Multiple Spanning-Tree
IEEE 802.3ad	LACP link aggregation (with up to eight members per group and up to eight groups per device)

Static port trunk

## Quality of Services (QoS)

QoS in Layer 2 (IEEE 802.1p compliant Class of Service)

Traffic prioritization using IEEE 802.1p, ToS, DSCP fields  
Map IEEE 802.1p priorities to CoS queues to prioritize traffic at egress

Strict scheduling and weighted round robin

## VLANs

IEEE 802.1Q VLAN tagging
Up to 256 active VLANs
Port-based VLANs
MAC-based VLANs
Private VLANs
GARP VLAN Registration Protocol (GVRP)

## Multicast Standards

RFC 1112	IGMP snooping (ver. 1)
RFC 2236	IGMP snooping (ver. 2)
RFC 3376	IGMP snooping (ver. 3)
RFC 3376	IGMP querier

## Management and Monitoring

WEB, CLI, Telnet, SSH, serial console port	
RFC 1157	SNMPv1/v2c
RFC 2570	SNMPv3
RFC 1213	MIB-II
RFC 1573	Evolution of MIB-II
RFC 1215	TRAP MIB
RFC 1493	Bridge MIB
RFC 2863	Interfaces group MIB
RFC 1643	Ethernet like MIB
RFC 1757	RMON 4 groups: Stats, History, Alarms, Events
RFC 2674	IEEE 802.1Q MIB
RFC 1866	HTML
RFC 2068	HTTP
RFC 854	Telnet
RFC 783	TFTP

IP address allocation

RFC 951/ RFC 1542      BootP/ DHCP manual

RFC 2030 SNTP, Simple Network Time Protocol  
Syslog event  
Dual software images

Stacking:

Up to six units with a mix of AT-8000GS/24, AT-8000GS/24POE and AT-8000GS/48 can be stacked together in any combination

Single system appearance

Single IP management

Backup master

Redundant ring stacking topology with 20Gbps performance

Link aggregation/trunking across stack

Port mirroring across stack

VLAN across stack

## Security

Management security: username and password protection

SSHv2 for Telnet management

SSLv3 for Web management

RFC 1492      TACACS+

RFC 2138      RADIUS authentication

RFC 2865      IEEE 802.1x port-based network access control

MAC-based network access control

Guest VLANs

ACL – Access Control Lists

## Fault Protection

Broadcast storm control

# AT-8000GS/48 | Layer 2 Stackable Gigabit Ethernet Switch

## Power Characteristics

Voltage input	100-240V AC
Current	1A
Power consumption	120W

## Environmental Specifications

Operating temp	0°C to 40°C (32°F to 113°F)
Storage temp	-25°C to 70°C (-13°F to 158°F)
Relative humidity	10% to 90% non-condensing
Storage humidity	5% to 95% non-condensing
Operating altitude	Maximum 3,000m (9,843ft)

## Electrical/ Mechanical Approvals

Safety	UL 1950 (UL/cUL), EN60950 (TUV)
EMI	FCC Class A, EN55022 Class A, VCCI Class A, C-Tick, EN61000-3-2, EN61000-3-3
Immunity	EN55024
RoHS compliant	6/6 compliant
WEEE	

## Package Description

One AT-8000GS/48 switch  
Power cord AC  
Rack-mount kit  
Rubber feet for desktop installation  
RS232 management cable (RJ-45)  
Stacking cable  
Install guide and user guide in CD

## Country of Origin

Philippines

## Ordering Information

### AT-8000GS/48-xx

48 port stackable 10/100/1000T Layer 2 switch with 4 standby SFP bays (unpopulated)

Where xx = 10 for US power cord  
20 for no power cord  
30 for UK power cord  
40 for Australian power cord  
50 for European power cord

## Accessories

Gigabit Ethernet Mini GBIC - Small Form Pluggables (SFPs)

### AT-SPSX

A Small Form-factor Pluggable (SFP) Gigabit SX transceiver that provides a full-duplex Gigabit solution up to 550m on multi-mode fiber.



#### Technical specifications:

• Media type	MMF
• Wavelength	850nm
• Maximum data rate	2.125Gbps
• Digital diagnostics	Yes
• Transmit power (min)	-9dBm
• Transmit power (max)	-3.5dBm
• Receive sensitivity	
at 1.25Gbps (typ)	-22dBm
at 1.25Gbps (max)	-20dBm
at 2.125Gbps (typ)	-20dBm
at 2.125Gbps (max)	-18dBm
• Power budget	
at 1.25Gbps (min)	11dBm
at 1.25Gbps (min)	9dBm
• Fiber connectors	LC

### AT-SPLX10

A Small Form-factor Pluggable (SFP) Gigabit LX transceiver that provides a full-duplex Gigabit solution up to 10km on single-mode fiber.



#### Technical specifications:

• Media type	SMF
• Wavelength	1310nm
• Maximum data rate	2.125Gbps
• Distance	10km
• Digital diagnostics	Yes
• Transmit power (min)	-9.5dBm
• Transmit power (max)	-3dBm
• Receive sensitivity	
at 2.125Gbps (max)	-21dBm
at 1.25Gbps (max)	-22dBm
• Power budget	
at 2.125Gbps (min)	11.5dBm
at 1.25Gbps (min)	12.5dBm
• Fiber connectors	LC

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## AT-SPLX40

A Small Form-factor Pluggable (SFP) Gigabit LX transceiver that provides a full-duplex Gigabit solution up to 40km on single-mode fiber.



### Technical specifications:

• Media type	SMF
• Wavelength	1310nm
• Maximum data rate	2.125Gbps
• Distance	40km
• Digital diagnostics	Yes
• Transmit power (min)	0dBm
• Transmit power (max)	5Bm
• Receive sensitivity	
at 2.125Gbps (max)	-21dBm
at 1.25Gbps (max)	-22dBm
• Power budget	
at 2.125Gbps (min)	-21dBm
at 1.25Gbps (min)	-22dBm
• Fiber connectors	LC

## AT-SPLX40/I550

A Small Form-factor Pluggable (SFP) Gigabit LX transceiver that provides a full-duplex Gigabit solution up to 40km on single-mode fiber.



### Technical specifications:

• Media type	SMF
• Wavelength	1550nm
• Maximum data rate	1.25Gbps
• Distance	40km
• Digital diagnostics	Yes
• Transmit power (min)	5dBm
• Transmit power (max)	-2.5Bm
• Receive sensitivity (typ)	-26dBm
• Receive sensitivity (max)	-24dBm
• Power budget	19dBm
• Fiber connectors	LC

## AT-SPZX80

A Small Form-factor Pluggable (SFP) Gigabit LX transceiver that provides a full-duplex Gigabit solution up to 80km on single-mode fiber.



### Technical specifications:

• Media type	SMF
• Wavelength	1550nm
• Maximum data rate	1.25Gbps
• Distance	80km
• Digital diagnostics	Yes
• Transmit power (min)	0dBm
• Transmit power (typ)	2dBm
• Transmit power (max)	-3Bm
• Receive sensitivity (typ)	-26dBm
• Receive sensitivity (max)	-24dBm
• Power budget	24dBm
• Fiber connectors	LC

## AT-SPFX/2

A Small Form-factor Pluggable (SFP) 100FX transceiver that provides 100Mbps full-duplex connectivity up to 2km on multi-mode fiber.



### Technical specifications:

• Media type	MMF
• Wavelength	1310nm
• Distance	2km
• Digital diagnostics	No
• Transmit power (min)	-20dBm
• Transmit power (max)	-14Bm
• Receive sensitivity (typ)	-29dBm
• Power budget	9dBm
• Fiber connectors	LC

## AT-SPFX/15

A Small Form-factor Pluggable (SFP) 100FX transceiver that provides 100Mbps full-duplex connectivity up to 15km on single-mode fiber.



### Technical specifications:

• Media type	SMF
• Wavelength	1310nm
• Distance	15km
• Digital diagnostics	No
• Transmit power (min)	-15dBm
• Transmit power (max)	-8Bm
• Receive sensitivity (typ)	-31dBm
• Power budget	16dBm
• Fiber connectors	LC

## AT-SPFX/40

A Small Form-factor Pluggable (SFP) 100FX transceiver that provides 100Mbps full-duplex connectivity up to 15km on single-mode fiber.



### Technical specifications:

• Media type	SMF
• Wavelength	1310nm
• Distance	40km
• Digital diagnostics	No
• Transmit power (min)	-5dBm
• Transmit power (max)	0Bm
• Receive sensitivity (typ)	-31dBm
• Power budget	26dBm
• Fiber connectors	LC

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