### DATASHEET

# Edge Switch III

### Managed Gigabit Switches with SFP

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U | EdgeSwitch 24

Models: ES-24-Lite, ES-48-Lite

Non-Blocking Throughput Switching Performance

Gigabit Ethernet RJ45 and SFP+/SFP Ports

Redundant Power Supply Option





#### Advanced Switching Technology for the Masses

Build and expand your network with Ubiquiti Networks® EdgeSwitch<sup>™</sup> Lite, part of the EdgeMAX® line of products. The EdgeSwitch Lite is a fully managed, Gigabit switch, delivering robust performance and intelligent switching for growing networks.

The EdgeSwitch Lite offers an extensive suite of advanced Layer 2 switching features and protocols, and also provides Layer 3 routing capability.

#### **Switching Performance**

The EdgeSwitch Lite offers the forwarding capacity to simultaneously process traffic on all ports at line rate without any packet loss.

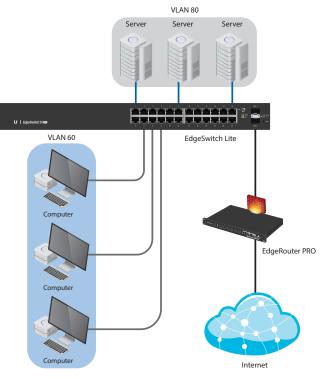
For its total, non-blocking throughput, the 24-port models support up to 26 Gbps, while the 48-port models support up to 70 Gbps.

#### **Fiber Connectivity**

The EdgeSwitch Lite provides fiber connectivity options for your growing networks. The 24-port models include two SFP ports, providing up to 1 Gbps uplinks.

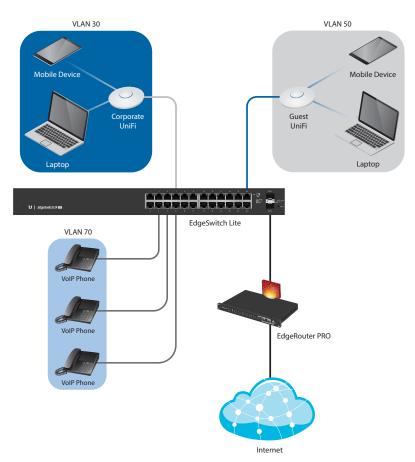
For high-capacity uplinks, the 48-port models include two SFP and two SFP+ ports, providing up to 10 Gbps uplinks.

#### **Deployment Examples**



VLANs for Servers and Computers

The EdgeSwitch Lite connects to the Ubiquiti EdgeRouter<sup>™</sup> PRO via an SFP uplink.



VLANs for Corporate Wireless, Guest Wireless, and VoIP For wireless access, two Ubiquiti UniFi®Access Points connect to the EdgeSwitch Lite.

#### Comprehensive User Interface

Designed for convenient management, the EdgeSwitch Lite Configuration Interface allows administrators to configure and monitor switch features in a graphical user interface.

#### For advanced users, an industry-standard command-line interface (CLI) is available through the serial console port, telnet, and SSH.



#### **Powerful Functionality**

The EdgeSwitch Lite uses a sophisticated operating system that provides basic switching features, and a variety of advanced features including:

- MSTP/RSTP/STP
- VLAN, Private VLAN, Voice VLAN
- Link Aggregation
- DHCP Snooping, IGMP Snooping
  TACACS+, RADIUS, 802.1X, MAC
- Filtering, ACL
  DiffServ, CoS
- Static Routing, Policy-Based Routing

						Save Configuration Log Out
System > Summary > Dashboard				System 🔻	Switching - Routing	▼ Security ▼ QoS ▼
Dashboard Description Inve	tory MAC Address Ta	ble				
EdgeSwitch					<b>(</b>	SENSINE PRESUCT ?
System Information		_		_		_
System Description		EdgeSwitc	h 24-Port Lite, 1.1.2.4767216, Linux 3.6.5-f4a26ed5			
System Name		UBNT Edge	Switch			
System Location						
System Contact						
IP Address		10.1.10.2	3			
Burned In MAC Address		04:18:D6:	07:7C:41			
System Up Time		14 days, 2	hours, 19 mins, 13 secs			
Device Information						
Machine Type		EdgeSwitc	h 24-Port Lite			
Machine Model						
Serial Number			7C41			
Software Version			7216			
System Resource Usage						
CPU Utilization (60 Second Average)			34 %			
Memory Usage			38 %			
Temperature Status						
Logged In Users						
User Name			Connection From			: Time
ubnt EIA-232					00:00:00	
ubnt		10.1.10.7			00:32:04	
ubni		10.0.2.164			00.00.00	
Recent Log Entries						
Log Time	Severity			Description		
Jan 15 02:17:26	Info	HTTP Session 6 start	ed for user ubnt connected from 10.0.2.184			
an 15 01:46:29	Info	HTTP Session 5 start	red for user ubnt connected from 10.1.10.7			
an 14 02:05:49	Notice	Spanning Tree Topo	logy Change Received: MSTID: 0 0/23			
Jan 14 02:05:47	Notice	Spanning Tree Topo	logy Change Received: MSTID: 0 0/23			
Jan 14 01:54:52	Notice	Spanning Tree Topo	logy Change Received: MSTID: 0 0/23			
			Refresh		© Cop	yright 2013-2014 Ublquiti Networks, Inc.

iystem >	Port > Summar										s	ystem 👻	Switching	▼ Rout	ing 🔻	Security 👻	QoS
Summ	ary Descri	ption Cable	e Test	Mirroring													
Port S	Summary																?
Display	10 : rows							Showin	g 1 to	10 of 32 entries					Filter:		
	Interface C	Interface Index	٥	Туре	٥	Admin Mode	¢	Physical Mode	٥	Physical Status	٥	STP Mode	٥	LACP Mode	٥	Link Status	0
	0/1	1		Normal		Enabled		Auto		1000 Mbps		Enabled		Enabled		Unk Up	
	0/2	2		Normal		Enabled		Auto				Enabled		Enabled		Link Down	
	0/3	3		Normal		Enabled		Auto				Enabled		Enabled		Link Down	
	0/4	4		Normal		Enabled		Auto				Enabled		Enabled		Link Down	
	0/5	5		Normal		Enabled		Auto				Enabled		Enabled		Link Down	
	0/6	6		Normal		Enabled		Auto				Enabled		Enabled		Link Down	
	0/7	7		Normal		Enabled		Auto				Enabled		Enabled		Link Down	
	0/8	8		Normal		Enabled		Auto				Enabled		Enabled		Link Down	
	0/9	9		Normal		Enabled		Auto				Enabled		Enabled		Unk Down	
	0/10	10		Normal		Enabled		Auto				Enabled		Enabled		Link Down	
								First Previous		2 3 4 Next Last							

System > Statistics > System > Switch		System + Switching + Routing + Security + QoS
Switch Port Summary Port Detailed Netwo	ork DHCPv6	
Switch Statistics		
Statistics	Transmit	Receive
Octets Without Error	333344749	328375038
Packets Without Errors	2656216	2238900
Packets Discarded	0	0
Unicast Packets	139663	60632
Multicast Packets	2437849	141567
Broadcast Packets	78704	2036701
Status	FD8 Entries	VLANs
Current Usage	23	1
Peak Usage	33	1
Maximum Allowed	16384	255
Static Entries	1	1
Dynamic Entries	22	0
Total Entries Deleted	N/A	0
System	65	
System Interface		
	14d:02:36:34	

### Models

#### EdgeSwitch 24 Lite

Model: ES-24-Lite

- (24) Gigabit RJ45 Ports
- (2) SFP Ports
- (1) Serial Console Port
- Non-Blocking Throughput: 26 Gbps
- Switching Capacity: 52 Gbps
- Forwarding Rate: 38.69 Mpps
- Maximum Power Consumption: 25W
- Rack- or Wall-Mountable
- Quiet, Fanless Operation
- Option: Redundant Power Supply Unit (PSU), Used as a Hot Spare
  - Ubiquiti Networks EdgeSwitch PSU, 56W
  - External PSU (Minimum Power: 25W, 25 to 16V) with 2.5 mm DC Power Inline Connector



Front Panel



Back Panel

#### EdgeSwitch 48 Lite

Model: ES-48-Lite

- (48) Gigabit RJ45 Ports
- (2) SFP+ Ports
- (2) SFP Ports
- (1) Serial Console Port
- Non-Blocking Throughput: 70 Gbps
- Switching Capacity: 140 Gbps
- Forwarding Rate: 104.16 Mpps
- Maximum Power Consumption: 56W
- Rack- or Wall-Mountable
- Option: Redundant Power Supply Unit (PSU), Used as a Hot Spare
- Ubiquiti Networks EdgeSwitch PSU, 56W
- External PSU (Minimum Power: 56W, 25 to 16V) with 2.5 mm DC Power Inline Connector



Front Panel



Datasheet

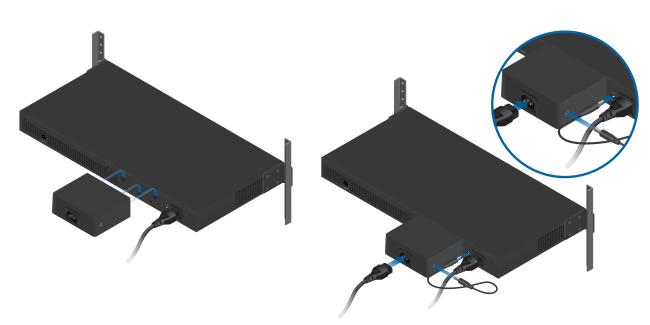
### Accessory



#### EdgeSwitch PSU, 56W

Model: ES-PSU-56W

- Designed to Attach to the EdgeSwitch Lite
- DC Power Cable Included
- Dimensions: 96 x 111 x 41 mm (3.8 x 4.4 x 1.6")



Attaching the EdgeSwitch PSU

Connecting the EdgeSwitch PSU



## *Edge*Switch<sup>2</sup>4 **III** Hardware Specifications

	ES-24-Lite
Dimensions	443 x 43 x 221 mm (17.44 x 1.69 x 8.70")
Weight Rack-Mount Brackets Included Rack-Mount Brackets Excluded	2.6 kg (5.7 lb) 2.51 kg (5.53 lb)
Total Non-Blocking Throughput	26 Gbps
Switching Capacity	52 Gbps
Forwarding Rate	38.69 Mpps
Max. AC Power Consumption	25W
Power Method	100-240VAC/50-60 Hz, Universal Input DC 25V/25W Min.
Power Supply	AC/DC, Internal, 25W DC
LEDs Per Port Serial Console Port RJ45 Data Ports SFP Data Ports	N/A Speed/Link/Activity Speed/Link/Activity
Networking Interfaces	(24) 10/100/1000 Mbps RJ45 Ethernet Ports (2) 1 Gbps SFP Ethernet Ports
Management Interface	(1) RJ45 Serial Port, Ethernet In/Out Band
Certifications	CE, FCC, IC
Rackmount	Yes, 1U High
ESD/EMP Protection	Air: ±24 kV, Contact: ±24 kV
Operating Temperature	-5 to 40° C (23 to 104° F)
Operating Humidity	5 to 95% Noncondensing
Shock and Vibration	ETSI300-019-1.4 Standard

## *Edge*Switch 48 **EE** Hardware Specifications

	ES-48-Lite
Dimensions	443 x 43 x 286 mm (17.44 x 1.69 x 11.26")
Weight Rack-Mount Brackets Included Rack-Mount Brackets Excluded	3.65 kg (8.05 lb) 3.56 kg (7.85 lb)
Total Non-Blocking Throughput	70 Gbps
Switching Capacity	140 Gbps
Forwarding Rate	104.16 Mpps
Max. AC Power Consumption	56W
Power Method	100-240VAC/50-60 Hz, Universal Input DC 25V/56W Min.
Power Supply	AC/DC, Internal, 56W DC
LEDs Per Port Serial Console Port RJ45 Data Ports SFP+/SFP Data Ports	N/A Speed/Link/Activity Speed/Link/Activity
Networking Interfaces	(48) 10/100/1000 Mbps RJ45 Ethernet Ports (2) 1/10 Gbps SFP+ Ethernet Ports (2) 1 Gbps SFP Ethernet Ports
Management Interface	(1) RJ45 Serial Port, Ethernet In/Out Band
Certifications	CE, FCC, IC
Rackmount	Yes, 1U High
ESD/EMP Protection	Air: ±24 kV, Contact: ±24 kV
Operating Temperature	-5 to 40° C (23 to 104° F)
Operating Temperature Operating Humidity	-5 to 40° C (23 to 104° F) 5 to 95% Noncondensing



## **Software Specifications**

	Software Information
Core Switching Features	<ul> <li>ANSI/TIA-1057: LLDP-Media Endpoint Discovery (MED)</li> <li>IEEE 802.1AB: Link Layer Discovery Protocol (LLDP)</li> <li>IEEE 802.1D: Spanning Tree Compatibility</li> <li>IEEE 802.1S: Multiple Spanning Tree Compatibility</li> <li>IEEE 802.1W: Rapid Spanning Tree Compatibility</li> <li>IEEE 802.1Q: Virtual LANs with Port-Based VLANs</li> <li>IEEE 802.1p: Ethernet Priority with User Provisioning and Mapping</li> <li>IEEE 802.1X: Port-Based Authentication with Guest VLAN Support</li> <li>IEEE 802.31: 10BASE-T</li> <li>IEEE 802.3a: 10BASE-T</li> <li>IEEE 802.3ab: 1000BASE-T</li> <li>IEEE 802.3ac: VLAN Tagging</li> <li>IEEE 802.3ac: VLAN Tagging</li> <li>IEEE 802.3ac: Flow Control</li> <li>IEEE 802.3x: Flow Control</li> <li>IEEE 802.3x: Flow Control</li> <li>IEEE 802.1D-2004: Generic Attribute Registration Protocol: Clause 12 (GARP)</li> <li>IEEE 802.1Q-2003: Dynamic VLAN registration: Clause 11.2 (GVRP)</li> <li>RFC 4541: Considerations for Internet Group Management Protocol (IGMP) Snooping Switches</li> <li>RFC 5171: Unidirectional Link Detection (UDLD) Protocol</li> </ul>
Advanced Layer 2 Features	<ul> <li>Broadcast Storm Recovery</li> <li>Broadcast/Multicast/Unknown Unicast Storm Recovery</li> <li>DHCP Snooping</li> <li>IGMP Snooping Querier</li> <li>Independent VLAN Learning (IVL) Support</li> <li>Jumbo Ethernet Frame Support</li> <li>Port MAC Locking</li> <li>Port Mirroring</li> <li>Protected Ports</li> <li>Static MAC Filtering</li> <li>TACACS+</li> <li>Voice VLANs</li> <li>Unauthenticated VLAN</li> <li>Internal 802.1X Authentication Server</li> </ul>

	Software Information
Platform Specifications	<ul> <li>DHCP Server</li> <li>Maximum Number of Pools: 8</li> <li>Maximum Number of Leases (Total): 128</li> <li>Routing <ul> <li>Number of Routes: 16</li> <li>Number of Routing Interfaces: 15</li> </ul> </li> <li>VLANs: 255</li> <li>MAC Addresses: 8k</li> <li>MSTP Instances: 4</li> <li>LAGs: 6</li> <li>ACLs: 100 with 10 Rules per Port</li> <li>Traffic Classes (Queues): 8</li> </ul>
System Facilities	<ul> <li>Event and Error Logging Facility</li> <li>Run-Time and Configuration Download Capability</li> <li>PING Utility</li> <li>FTP/TFTP Transfers via IPv4/IPv6</li> <li>Malicious Code Detection</li> <li>BootP and DHCP</li> <li>RFC 2021: Remote Network Monitoring Management Information Base Version 2</li> <li>RFC 2030: Simple Network Time Protocol (SNTP)</li> <li>RFC 2819: Remote Network Monitoring Management Information Base</li> <li>RFC 2865: RADIUS Client</li> <li>RFC 2866: RADIUS Accounting</li> <li>RFC 2868: RADIUS Accounting</li> <li>RFC 2869: RADIUS Attributes for Tunnel Protocol Support</li> <li>RFC 2869: RADIUS Extensions</li> <li>RFC 3579: RADIUS Support for EAP</li> <li>RFC 3580: IEEE 802.1X RADIUS Usage Guidelines</li> <li>RFC 3164: BSD Syslog Protocol</li> </ul>
Management	<ul> <li>Web UI</li> <li>Industry-Standard CLI</li> <li>IPv6 Management</li> <li>Password Management</li> <li>Autoinstall Support for Firmware Images and Configuration Files</li> <li>SNMP v1, v2, and v3</li> <li>SSH 1.5 and 2.0</li> <li>SSL 3.0 and TLS 1.0</li> <li>Secure Copy (SCP)</li> <li>Telnet (Multi-Session Support)</li> </ul>
Layer 3 Routing	<ul><li>Static Routing</li><li>Policy Based Routing</li></ul>

	Software Information
QoS	<ul> <li>Access Control Lists (ACLs), Permit/Deny Actions for Inbound IP and Layer 2 Traffic Classification Based on:</li> <li>Time-Based ACL</li> <li>Source/Destination IP Address</li> <li>TCP/UDP Source/Destination Port</li> <li>IP Protocol Type</li> </ul>
	<ul> <li>Type of Service (ToS) or Differentiated Services (DSCP) Field</li> <li>Source/Destination MAC Address</li> <li>EtherType</li> <li>IEEE 802.1p User Priority</li> <li>VLAN ID</li> </ul>
	<ul> <li>RFC 1858: Security Considerations for IP Fragment Filtering</li> <li>Optional ACL Rule Attributes <ul> <li>Assign Flow to a Specific Class of Service (CoS) Queue</li> <li>Redirect Matching Traffic Flows</li> </ul> </li> <li>Differentiated Services (DiffServ)</li> </ul>
	<ul> <li>Classify Traffic Based on Same Criteria as ACLs</li> <li>Mark the IP DSCP or Precedence Header Fields, Optional</li> <li>Police the Flow to a Specific Rate with Two-Color Aware Support</li> <li>RFC 2474: Definition of the Differentiated Services Field (DS field) in the IPv4 and IPv6 Headers</li> <li>RFC 2475: An Architecture for Differentiated Services</li> <li>RFC 2597: Assured Forwarding Per-Hop Behavior (PHB) Group</li> <li>RFC 3246: An Expedited Forwarding PHB</li> </ul>
	<ul> <li>RFC 3260: New Terminology and Clarifications for DiffServ</li> <li>Class of Service (CoS) Queue Mapping Configuration <ul> <li>AutoVoIP: Automatic CoS Settings for VoIP</li> <li>IP DSCP-to-Queue Mapping</li> <li>Configurable Interface Trust Mode (IEEE 802.1p, DSCP, or Untrusted)</li> <li>Interface Egress Shaping Rate</li> <li>Strict Priority versus Weighted Scheduling per Queue</li> </ul> </li> </ul>

EdgeSwitch DATASHEET