### 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.

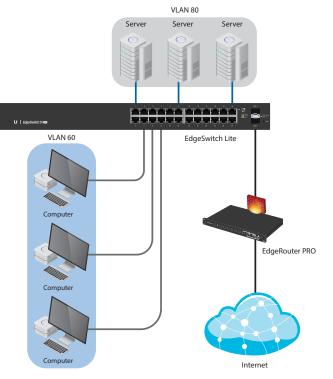
For its total, non-blocking throughput, the 24-port models support up to 26 Gbps, while the 48-port models support up to 70 Gbps.

#### **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.

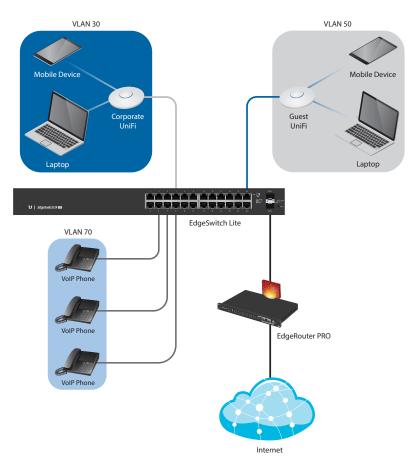
For high-capacity uplinks, the 48-port models include two SFP and two SFP+ ports, providing up to 10 Gbps uplinks.

#### **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		ES-24-Lite				
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 10.1.10.7			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	FDB 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

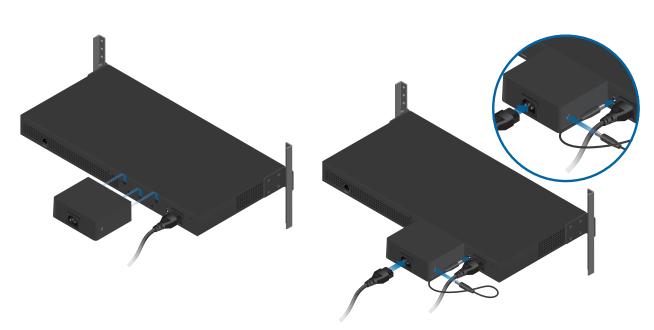
### Accessory



#### EdgeSwitch PSU, 56W

Model: ES-PSU-56W

- Designed to Attach to the EdgeSwitch Lite
- DC Power Cable Included



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