

# 3Com® Switch 5500G 10/100/1000 Family

DATA SHEET

Premium stackable
Gigabit switches deliver
maximum security,
convergence features
and intelligence
required by the most
demanding advanced
enterprise networks

# **OVERVIEW**

The 3Com® Switch 5500G 10/100/1000 Family delivers premium levels of performance, security and reliability for robust switching at the enterprise network edge. The family consists of Layer 2/3/4 Gigabit Ethernet and Power over Ethernet switches, with advanced features that can accommodate the most demanding applications, offering resilient and secure connectivity and the latest traffic-prioritization technologies to optimize applications on converged networks. Designed for maximum flexibility and scalability, 3Com Switch 5500G models come with 24 or 48 Gigabit ports, and offer optional modules for 10-Gigabit and SFP Gigabit uplink connections.

The switches can be stacked up to eight units high to form a virtual "stack." One stack can provide up to 448 Gigabit Ethernet ports and may be managed centrally as a single-IP entity. Each stack offers chassis-like availability and resiliency over traditional aggregated-trunk configurations with patented 3Com XRN® (eXpandable Resilient Networking) stacking technology.

## **KEY BENEFITS**

#### **ENTERPRISE-LEVEL PERFORMANCE**

3Com Switch 5500 10/100/1000 devices provide switching capacity of up to 232 Gbps for 48-port models and 184 Gbps for 24-port models. Wirespeed and line-rate performance is delivered on all ports within the stack. Advanced Layer 3 routing—including OSPF, PIM-SM, PIM-DM and RIP v1/v2—helps deliver optimal performance and system response.

#### **BUILT FOR FLEXIBILITY AND GROWTH**

The 3Com Switch 5500G family consists of five models. Two models come with 24 (with or without PoE), and two models with 48 10/100/1000 ports (with or without PoE). Four ports on each unit are dual-purpose or "dual-personality" ports that can function as either 10/100/1000 or SFP optical Gigabit transceivers. A fifth SFP model offers 24 SFP Gigabit ports, four of which are dual-purpose. All models provide a slot for a 1- or 2-port 10-Gigabit module, enabling switch capabilities to grow with the needs of the network. Layer 3 OSPF and multicast routing, XRN technology and Power over Ethernet (PoE) provide advanced support for today's expanding networks.



# KEY BENEFITS (CONTINUED)

#### HIGH AVAILABILITY FOR CRITICAL APPLICATIONS

XRN technology, a 3Com innovation, enables multiple interconnected and stackable Layer 3 switches to be managed as a single entity. Stack and switching fabric setup is automated and provides a high level of resiliency and continuous availability without adding to network complexity. After configuration, all switches actively share routing intelligence and network loads—eliminating the wasted bandwidth and added expense of a passive standby unit. Ultra-fast failover recovery automatically redistributes traffic among the other active units in case a switch becomes disconnected or fails.

#### **MULTILAYER SECURITY**

The Switch 5500G family provides integrated and distributed security enforcement that can be managed from a central location. Access control lists (ACLs) help protect network resources from unauthorized access and data corruption. User-based authentication and DES 56/168-bit† encryption help secure Layer 3 protocols and management controls such as SSH v2 and SNMP. IEEE 802.1X RADIUS/TACACS+ network login and RADIUS Authenticated Device Access (RADA) enforce access control at the network edge.

#### PRIORITY FOR CONVERGED BUSINESS TRAFFIC

Next-generation traffic prioritization features—including advanced policy-based Class of Service/Quality of Service (CoS/QoS), eight priority queues, committed access rates, bandwidth limiting and filtering and more—identify and optimize delay-sensitive traffic such as voice and video. To help assure this optimization, switches can be configured to automatically isolate voice traffic from 3Com and other IP telephony systems within a voice-dedicated VLAN.

#### **UNIQUE AC/DC POWERED OPERATION**

3Com Switch 5500G products are the first stackable switches to support multiple power schemes right out of the box, with a choice of AC, AC and DC, or DC operation. Some models also support IEEE 802.3af PoE, enabling power to be injected out to the edge of the network without the need to install additional wires or upgrade existing power supplies. The customer-swappable power supply unit enables non-PoE models to be easily upgraded to PoE capability. An available Redundant Power System can provide supplemental N+1 power across all PoE ports in the system.

### POWERFUL, UNIFIED MANAGEMENT

The 3Com Operating System employed in the Switch 5500G is the same powerful software used in the 3Com Switch 8800 and Switch 7700 modular switch switch families and the Router 6000, 5000 and 3000 families. This consolidates administration over the entire switching infrastructure and provides edge-to-core visibility and control when using 3Com management applications such as 3Com Enterprise Management Suite and 3Com Network Director.

<sup>&</sup>lt;sup>†</sup> 168-bit encryption not available in all countries. Refer to www.3com.com for details.

# KEY BENEFITS (CONTINUED)

#### **FUTURE-PROOF INVESTMENT**

Standards-based switching—including IP v6 traffic filtering and classification, cabling support and management features—provide a networking solution that maximizes IT investment and supports emerging standards.

### **WORLD-CLASS SERVICE, SUPPORT AND TRAINING**

The 3Com Switch 5500 is backed by 3Com and its authorized partners. Professional customer service organizations offer assessment, installation, management and maintenance support for network infrastructures. Skilled personnel with experience in a variety of network environments can assist 3Com customers through all phases of network planning, implementation, troubleshooting and product training.

# **FEATURE HIGHLIGHTS**

Provides up to 56 Gigabit Layer 2/3/4 switched ports per switch and up to 448 Gigabit ports per stack

Equipped with four dual-purpose ports on each switch providing either 10/100/1000 or SFP Gigabit connectivity

Offers optional 1- and 2-port 10-Gigabit and 8-port SFP Gigabit modules for links to the network core

Can be stacked eight units high and managed as a single-IP entity

Delivers wirespeed and line-rate performance on all ports

Offers OSPF and multicast routing, 3Com XRN stacking technology and IEEE 802.3af Power over Ethernet

Provides high resiliency and continuous availability with active load sharing and support for ultra-fast failover recovery

Implements multilayer distributed security including ACLs, DES 56/168-bit<sup>†</sup> encryption, IEEE 802.1X network login and RADA authentication

Prioritizes converged network traffic with advanced CoS/QoS and other features to ensure high levels of service for latency-sensitive applications

Leverages existing power schemes in data centers and switching infrastructures with built-in support for both AC and DC power

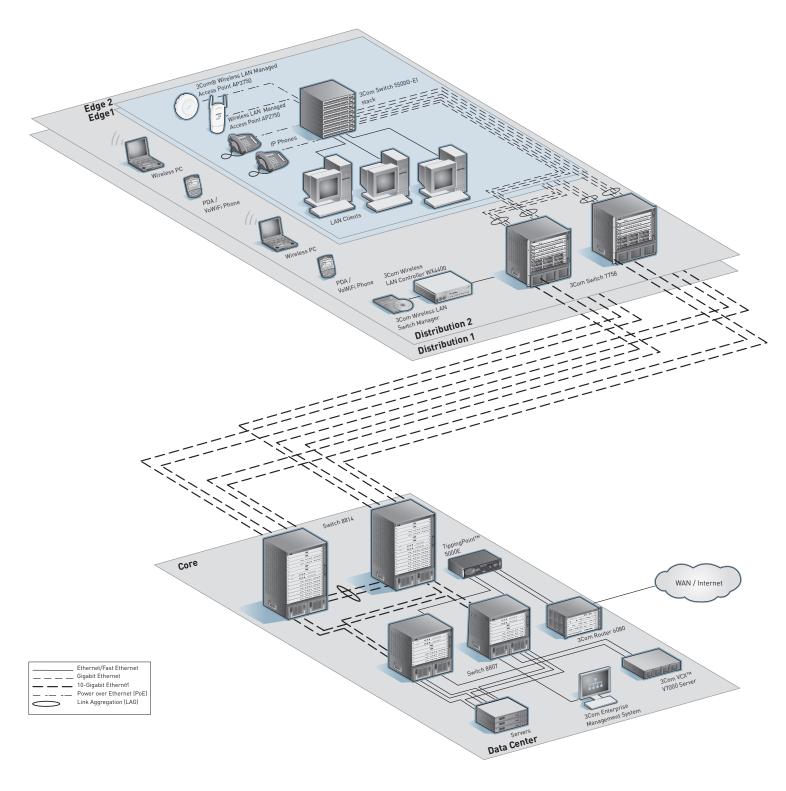
Consolidates administrative control and enhances core-to-edge visibility with an operating system shared with 3Com modular switches and routers

Offers an SFP-based model with 24 SFP Gigabit ports, four of which are  $\operatorname{dual-purpose}$ 

Backed by top-flight service, support and training from 3Com and 3Com authorized partners

<sup>† 168-</sup>bit encryption not available in all countries. Refer to www.3com.com for details.

# **SWITCH 5500G FAMILY IN ENTERPRISE CAMPUS NETWORK**



# **SERVICE AND SUPPORT**

3Com Global Services offers the resources and talents of a major corporation plus more than two decades of experience in resolving network challenges and delivering business benefits to enterprises around the world.

Global support with a personalized focus in the local language helps drive productivity and minimize expenses. Because 3Com understands both the technology and the business, we're the partner you need, to maintain your competitive edge and remain strong.

### **Suggested Service, Support and Training Offerings**

Network Health Check	An activity-auditing service focused on improving network performance and productivity
	Includes traffic monitoring, utilization analysis, problem identification, and asset deployment recommendations
	Extensive report provides blueprint for action
Network Installation and Implementation Services	Experts set-up and configure equipment and integrate technologies to maximize functionality and minimize business disruption
	For large and complex sites, implementation services include personalized configuration, project management, extended testing and coaching on network administration
Project Management	Provides extra focus and resources that special projects demand
	3Com engineers manage entire process from initial specifications to post-project review
	Using structured methodology, requirements are identified, projects planned and progress of implementation activities tracked
3Com Guardian <sup>sM</sup> Maintenance Service	This service provides comprehensive on-site support and includes advance hardware replacement, telephone technical support and software upgrades
3Com Express <sup>SM</sup> Maintenance Service	This service provides speedy access to: 3Com shipment of advance hardware replacements, software upgrades and telephone support
3Com University	Self-paced and instructor-led technology and product courses, plus certification programs

# REDUNDANT POWER SYSTEM

3Com has tested and qualified a Redundant Power System (RPS) solution designed for the Switch 5500 family by Eaton Powerware Corporation, a leading global provider of power quality and management solutions.

The Powerware DC RPS systems come in either 3RU or 6RU form-factors, delivering up to 9,000W of DC power to a stack of Switch 5500 units. The 3RU RPS unit houses up to three hot-swappable rectifiers supplying up to 4,500W of power that supports up to eight separately-fused DC outputs, while the 6RU unit can house up to six hot-swappable rectifiers provisioning a total of 9,000W.

The RPS supports SNMP management, including MIB II, which is easily accessible through the built-in RJ-45 or serial port. It is fully compatible with the IEEE 802.3af Power over Ethernet standard, providing supplemental power for the 3Com Switch 5500G PWR models.

With this RPS, all 384 10/100/1000 ports on a stack of eight Switch 5500G PWR 48-port units can receive the industry standard 15.4W of power per port, with N+1 power redundancy.

The RPS ships with the power input fully configured and can be connected to a UPS with battery backup. For more details, please refer to **www.3com.com/rps**.

### **SPECIFICATIONS**

All information in this section is relevant to all members of the 3Com Switch 5500G 10/100/1000 family, unless otherwise stated.

#### **CONNECTORS**

#### 48-port models

44 auto-negotiating 10BASE-T/ 100BASE-TX/1000BASE-T ports configured as auto-MDI/MDIX

4 dual-personality 10/100/1000 or SFP Gigabit ports

IEEE 802.3af in-line power on all 10/100/1000 ports for PWR models

# 24-port SFP model

20 Gigabit SFP ports

4 dual-personality 10/100/1000 or SFP Gigabit ports

#### 24-port, other models

20 auto-negotiating 10BASE-T/ 100BASE-TX/1000BASE-T ports configured as auto-MDI/MDIX

4 dual-personality 10/100/1000 or SFP Gigabit ports

IEEE 802.3af in-line power on all 10/100/1000 ports for PWR models

#### All models

Application module slot 2 XRN Stacking ports Redundant power supply (-48 VDC) connector

RJ-45 console port

### **PERFORMANCE**

#### 48-port

232.0 Gbps switching capacity, max. (with 2-port 10-Gigabit module) 172.6 Mpps forwarding rate, max. (with 2-port 10-Gigabit module) 142.3 Mpps forwarding rate, max. (with no optional modules)

#### 24-port

184.0 Gbps switching capacity, max. (with 2-port 10-Gigabit module) 136.9 Mpps forwarding rate, max. (with 2-port 10-Gigabit module) 107.1 Mpps forwarding rate, max. (with no optional modules)

#### All models

Wirespeed performance across all ports within stack or fabric Store-and-forward switching; latency  $<\!10~\mu s$  96 Gbps full-duplex stacking bandwidth

## **LAYER 2 SWITCHING**

16K MAC addresses in address table 1K static MAC addresses, in addition to default address

Jumbo Frame support

4,094 port-based IEEE 802.1Q VLANs IEEE 802.1 Q-in-Q double-tagged VLANs

IEEE 802.1v protocol-based VLANs MAC-based VLANs using RADA auto-VLAN assignment

Auto-voice VLAN

IEEE 802.3ad Link Aggregation Control Protocol (LACP); automated and manual aggregation Link aggregation trunk groups, per switch:

- 32 groups
- 8 10/100/1000 ports or 4 10-Gigabit ports per group
- 32 Distributed Link Aggregation (DLA) groups

Auto-negotiation of port speed and duplex

IEEE 802.3x full-duplex flow control Back pressure flow control for half-duplex

Unidirectional Link Detection (UDLD) Broadcast, Multicast and Unicast traffic suppression

IEEE 802.1D Spanning Tree Protocol (STP)

IEEE 802.1w Rapid Spanning Tree Protocol (RSTP)

IEEE 802.1s Multiple Spanning Tree Protocol (MSTP)

Bridge Protocol Data Unit (BPDU) protection

Spanning Tree root guard Internet Group Management Protocol (IGMP) v1 and v2 snooping IGMP querier

Filtering for 256 multicast groups

### **LAYER 3 SWITCHING**

Hardware based routing 256 static routes, in addition to default address

Address Resolution Protocol (ARP) entries: 8K dynamic, 1K static 64 IP interfaces

Routing Information Protocol (RIP), v1 and v2: 2K routes

Open Shortest Path First (OSPF):

- 8 areas with 8 virtual interfaces per area
- · 40 neighbors per virtual interface
- · Eight virtual links

Protocol Independent Multicast-Dense Mode (PIM-DM)

Protocol Independent Multicast-Sparse Mode (PIM-SM)

IGMP v1 and v2

Equal Cost Multipath Protocol (ECMP); up to three ECMP instances Multicast VLAN Registration (MVR) Dynamic Host Configuration Protocol Relay (DHCP Relay): 8 K max.

3Com XRN® Technology:

- High-bandwidth 96 Gbps resilient stacking links
- Distributed Link Aggregation, hotswappable switch units; high-speed fully resilient trunks up to 40 Gbps
- Distributed Resilient Routing: optimized Layer 3, one routing table per switch

Virtual Router Redundancy Protocol (VRRP)

#### CONVERGENCE

8 hardware queues per port IEEE 802.1p Class of Service/Quality of Service (CoS/QoS) on ingress and egress Remarking of packets based on priority:

- Type of Service (ToS)
- IEEE 802.1p CoS
- IP precedence
- · Physical port
- Source/destination MAC address
- VLAN information
- · Ethertype
- Source/destination IP address
- Source/destination TCP port
- Source/destination UDP port

Webcache redirection Time-based Access Control Lists (ACLs) Auto-prioritization of voice traffic

determined by vendor OUI Weighted Round Robin (WRR), including WRR+SP

Weighted Fair Queuing (WFQ),

including WFQ + SP Strict Priority Queuing (SP)

DiffServ Code Point Expedited Forwarding (DSCP EF) remarking for prioritization of VoIP traffic Application rate limiting and blocking

on ingress Port-based traffic shaping on egress

Port-based traffic shaping on egress IEEE 802.3af Power over Ethernet standards-compliant (PWR models)

#### POE (PWR MODELS ONLY)

IEEE 802.3af PoE injection into Cat5 or 5e LAN wiring (300 W total max.) Supports all standard and most common pre-standard phones, access points and other PoE devices from selected vendors (Cisco, Nortel, Philips, Siemens, Avaya, NEC, Polycom, Pingtel, Proxim, et. al.) Available standards-based supplemental power system enables full 15.4 W to all PoE ports in a switch or stack

#### SECURITY

IEEE 802.1X Network login user authentication:

- Local, RADIUS, or TACACS+ server authentication
- PAP, CHAP, EAP over LAN (EAPoL), EAP-TLS/TTLS and PEAP
- Automatic port assignment of VLANs, ACLs and QoS profile based on user
- Multiple users per port
- 1,024 users per fabric
- Guest VLAN option
- Multiple authentication server realm definitions

RADIUS/TACACS+ session accounting RADIUS Authenticated Device Access (RADA): authenticate devices based on MAC address against RADIUS server or local database; assign VLAN ID and ACL through RADIUS

Combined MAC and IEEE 802.1X authentication on same port DHCP Tracker

DHCP snooping, including DHCP Trust

# **SPECIFICATIONS** (CONTINUED)

Wirespeed packet filtering in hardware ACLs filter at Layers 2, 3 and 4:

- · Source/destination MAC address
- Ethernet type
- Source/destination IP address
- Source/destination TCP port
- Source/destination UDP port

User-defined ACL filters

Port-based MAC address Disconnect Unknown Device (DUD)

IEEE 802.1X or TACACS+ user authentication of switch management on Telnet and console sessions

MD5 cipher-text and clear-text authentication for OSPF v2 and RIP v2 packets and SNMP v3 traffic

Hierarchical management and password protection for management interface and encrypted traffic, with SNMP v3 and SSH v2

4 local user access privilege levels Trusted management station IP and/or MAC address

#### STACKING

Up to 448 Gigabit ports, of which 384 are 10/100/1000

Single IP address and management interfaces for stack-wide control

Hot-swappable, resilient stacking High-bandwidth 96 Gbps resilient stacking links

XRN Stacking Technology of up to eight units high

Distributed Resilient Routing with router tables in all units; no master/ slave arrangement

Stack Switch 5500G-EI models only with other like units using XRN Stacking ports

#### **MANAGEMENT**

CLI via console or Telnet Embedded web management interface System configuration with SNMP v1, 2c and 3

Comprehensive statistics, including ACL/QoS and IP interface Syslog

Remote Monitoring (RMON) groups statistics, history, alarm and events DHCP server including options 60, 82

Supports multiple software images and bank swap

1-to-1 port mirroring

Ability to apply ACL to mirror port and forward only certain traffic types

Many-to-1 port mirroring

VLAN-to-1 port mirroring

Remote port mirroring

Detailed alarm and debug information Supports ping, remote ping and traceroute

Configuration file for backup and restore; multiple configuration files available

Backup and restore of software images Network Time Protocol (NTP) DHCP Relay and UDP Helper

System file transfer mechanisms: Xmodem, FTP, Trivial FTP (TFTP), Secure FTP (SFTP)

3Com management applications:

- 3Com Enterprise Management Suite for flexible, extensible management in advanced enterprise IT environments
- 3Com Network Director for comprehensive, turn-key network management for the enterprise
- · 3Com Network Supervisor for basic, turn-key network management for mid-market businesses
- 3Com Network Access Manager for IEEE 802.1X and RADA integration with IAS/Active Directory
- 3Com Switch Manager for virtual clustering support across 3Com switch families

#### **DIMENSIONS**

Height: 43.6 mm (1.7 in or 1U) Width: 440 mm (17.3 in) Depth: 450 mm (17.7 in) Weight: varies, depending on PSU

installed

#### POWER SUPPLY

Mode support: AC-only, AC and DC, DC-only operation

Built-in DC power stage for direct connection to -48 V supply Field-replaceable power supply

AC Line Frequency: 50/60 Hz Input Voltage: 90-240 VAC AC current rating: 3.0A max. (PWR models: 8.0A max.)

DC current rating: 5.5A max. (PWR 24-port: 12.0A; PWR 48-port: 19.5A; max.)

Non-PWR models are field-upgradeable to PoE support with installation of PoEenabled power supply

### **ENVIRONMENTAL REQUIREMENTS**

Operating temperature: 0° to 40°C (32° to 104°F)

Operating altitude: 0 to 4,572 meters (0 to 15,000 feet)

Storage temperature: -10° to 70°C (14° to 158°F)

Humidity (operating and storage): 10% to 95% non-condensing Standard: EN 60068 (IEC 68)

#### RELIABILITY

(MTBF @ 25°C)

48-port: 25 years (219,000 hours) 48-port PWR: 23 years (201,000 hours) 24-port: 34 years (298,000 hours) 24-port PWR: 31 years (272,000 hours) 24-port SFP: 29 years (256,000 hours)

#### INDUSTRY STANDARDS SUPPORTED

Ethernet Protocols

IEEE 802.1D (STP)

IEEE 802.1p (CoS) IEEE 802.1Q (VLANs)

IEEE 802.1s (MSTP)

IEEE 802.1v (Protocol VLANs)

IEEE 802.1w (RSTP)

IEEE 802.1X (Security)

IEEE 802.3 (Ethernet)

IEEE 802.3ab (1000BASE-T)

IEEE 802.3ad (Link Aggregation)

IEEE 802.3ae (10G Ethernet)

IEEE 802.3af (Power over Ethernet)

IEEE 802.3i (10BASE-T)

IEEE 802.3u (Fast Ethernet) IEEE 802.3x (Flow Control)

IEEE 802.3z (1000BASE-X)

### Management, including MIBs Supported

RFC 1213/2233 (MIB II)

RFC 1253 (OSPF Version 2 MIB)

RFC 1724 (RIP Version 2 MIB Extension)

RFC 1907 (SNMP v2c, SMI v2 and Revised MIB-II)

RFC 2021 (RMON II Probe Config MIB)

RFC 2233 (Interfaces MIB)

RFC 2571 (FrameWork)

RFC 2571-2575 (SNMP)

RFC 2613 (Remote Network

Monitoring MIB Extensions)

RFC 2618 (RADIUS Authentication

Client)

RFC 2620 (RADIUS Accounting Client) RFC 2644 (Restricted Directed Broadcast)

RFC 2665 (Pause Control)

RFC 2668 (IEEE 802.3 MAU MIB)

RFC 2674 (VLAN MIB Extension)

RFC 2819 (RMON MIB)

#### **EMISSIONS / AGENCY APPROVALS**

CISPR 22 Class A FCC Part 15 Class A

EN 55022 1998 Class A

EN 61000-3-2 2000, 61000-3-3

ICES-003 Class A VCCI Class A

# IMMUNITY

EN 55024

#### SAFETY AGENCY CERTIFICATIONS UL 60950

IEC 60950-1 EN 60950-1

CAN/CSA-C22.2 No. 60950-1-03

# **WARRANTY AND OTHER SERVICES**

Limited Lifetime Hardware Warranty, except for fans and power supply, which is 5-Year Limited. Limited Software Warranty for 90 days. Refer to www.3com.com/warranty for details.

Advance Hardware Replacement with Next Business Day shipment in most

90 days of telephone technical support

# ORDERING INFORMATION

PRODUCT DESCRIPTION	3COM SKU
3Com Switch 5500G-El 24-Port	3CR17250-91
3Com Switch 5500G-EI 48-Port	3CR17251-91
3Com Switch 5500G-EI PWR 24-Port	3CR17252-91
3Com Switch 5500G-EI PWR 48-Port	3CR17253-91
3Com Switch 5500G-EI 24-Port SFP	3CR17258-91
Modules	
3Com Switch 5500G-El 8-Port 1000BASE-X (SFP)	3C17260
3Com Switch 5500G-El 1-Port 10G (XENPAK)	3C17261
3Com Switch 5500G-EI 2-Port 10G (XFP)	3C17268
Transceivers	
3Com 1000BASE-SX SFP	3CSFP91
3Com 1000BASE-LX SFP	3CSFP92
3Com 1000BASE-T SFP	3CSFP93
3Com 1000BASE-LH70 (70 km) SFP	3CSFP97
3Com 10GBASE-LR XENPAK	3CXENPAK92
3Com 10GBASE-ER XENPAK	3CXENPAK96
3Com 10GBASE-LR XFP	3CXFP92
3Com 10GBASE-ER XFP	3CXFP96
Spare Components	
3Com Switch 5500G-El PoE PSU 24	3C17264
3Com Switch 5500G-El PoE PSU 48	3C17265
3Com Switch 5500G-EI PSU 24	3C17266
3Com Switch 5500G-EI PSU 48	3C17267
Cables	
3Com Switch 5500G-El Stacking Cable	3C17262
3Com Switch 5500G-EI 1.5m Stacking Cable	3C17263
3Com Switch 5500G-EI 5m Extended Stacking Cable	3C17269
DC Power System Components <sup>‡</sup>	
Powerware RPS Rackmount 3-Rectifier System with Load Distribution	APS3-058
Powerware RPS Rackmount 3-Rectifier System with Load and	
Battery Distribution	APS3-059
Powerware RPS Desktop 3-Rectifier System with Load Distribution	APS3-060
Powerware RPS Desktop 3-Rectifier System with Load and	
Battery Distribution	APS3-061
Powerware RPS Rackmount 6-Rectifier System with Load Distribution	APS6-058
Powerware RPS Rackmount 6-Rectifier System with Load and	
Battery Distribution	APS6-059
Powerware RPS 1,500W Rectifier	APR48
Powerware RPS 720W Rectifier	APU48
3Com Global Services	
3Com Network Health Check, Installation Services,	
and Express Maintenance www.3com.com/s	services_quote
	m.com/3comu

 $<sup>^{\</sup>ddagger}$  Provides supplemental or redundant DC power for Switch 5500G PWR models. Available from authorized 3Com resellers. See www.3com.com/rps for details.



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