## Overview

## Aruba 2615 Switch Series

## Models

| | |
|---|---|
| Aruba 2615 8 PoE Switch | J9565A |

## Key features

- Scalable 10/100 connectivity
- L2 and L3 switching capabilities
- sFlow, ACLs, and rate limiting
- Energy-efficient design and quiet operation
- Rack-mountable, compact form factor

## Product overview

The Aruba 2615 Switch Series is a family of fully managed 8-port 10/100 switches, each with two additional dual-personality gigabit Ethernet ports for copper or SFP connectivity. Bringing together static and RIP IPv4 routing, robust security and management, enterprise-class features, Limited Lifetime Warranty, and software updates included, these PoE switches deliver a comprehensive and cost-effective solution.

The 2615 Switch Series has a fan-less design for quiet operation, making it suitable for deployments in open spaces. In addition, its compact form factor allows for flexible deployments—including wall, surface, or rack mounting. These switches can be deployed at the enterprise edge and remote branch offices, as well as on converged networks.

## Features and benefits

**Quality of Service** (QoS)

- **Selectable queue configuration**
  performance and/or traffic reliability can be increased by selecting the number of queues that best meet the requirements of network applications; the switch will map 8 priorities to either 2 or 4 queues
- **Class of Service (CoS)**
  sets the IEEE 802.1p priority tag based on IP address, IP Type of Service (ToS), Layer 3 protocol, TCP/UDP port number, source port, and DiffServ
- **Layer 4 prioritization**
  enables prioritization based on TCP/UDP port numbers
- **Traffic prioritization (IEEE 802.1p)**
  allows real-time traffic classification into eight priority levels mapped to four queues
- **Rate limiting**
  per-port ingress-enforced maximum
- **Flow control**
  helps ensure reliable communications during full-duplex operation
- **Type of service**
  - **IP precedence**
    honors IP precedence bits and allows mapping to a priority queue

## Overview

- **Differentiated Services Code Point values**
  honors Differentiated Services Code Point (DSCP) bits and allows mapping to a priority queue

**Management**

- **Choice of management interfaces**
  - **Web graphical user interface (GUI)**
    easy-to-use graphical interface allows configuration of the switch from any Web browser
  - **Command-line interface (CLI)**
    robust command-line interface provides advanced configuration and diagnostics
  - **Simple Network Management Protocol (SNMPv2c/SNMPv3)**
    allows switch to be managed with a variety of third-party network management applications
- **Multiple configuration files**
  configuration file management tools allow up to three configuration files to be managed and stored on the switch
- **Dual flash images**
  provide independent primary and secondary operating system files for backup while upgrading
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  provide independent primary and secondary operating system files for backup while upgrading
- **Front-panel LEDs**
  - **Locator LED**
    allows users to set the locator LED on a specific switch to either turn on, blink, or turn off; simplifies troubleshooting by making it easy to locate a particular switch within a rack of similar switches
  - **Per-port LEDs**
    provides an at-a-glance view of status, activity, speed, and full-duplex operation
  - **provides an at-a-glance view of status, activity, speed, and full-duplex operation**
    power LED and fault LEDs display any issues
- **Network management**
  HPE Intelligent Management Center (IMC) centrally configures, updates, monitors, and troubleshoots
- **Comware CLI: NEW:**
  - **Comware-compatible CLI**
    Bridges the experience of Hewlett Packard Enterprise Comware CLI users who are using the ProVision software CLI
  - **Display and fundamental Comware CLI commands**
    are embedded in the switch CLI as native commands; display output is formatted as on Comware-based switches, and fundamental commands provide a Comware-familiar initial switch setup
  - **Configuration Comware CLI commands**
    when Comware commands are entered, CLI formulates the correct ProVision Software CLI

**Connectivity**

- **Dual-personality functionality**
  two 10/100/1000 ports or SFP slots provide optional fiber connectivity such as Gigabit-SX, -LX, -LH, 100-FX, 100-BX, and 1000-BX
- **IEEE 802.3af Power over Ethernet**
  provides up to 15.4 W per port to IEEE 802.3af-compliant PoE-powered devices such as IP phones, wireless access points, and security cameras (see product specifications for total PoE power available)
- **Auto-MDIX**
  automatically adjusts for straight-through or crossover cables on all 10/100 ports
- **RJ-45 serial console port**
  provides easy accessibility on front of the unit to the switch CLI
- **IPv6**

## Overview

  - **IPv6 host**
    the switches can be managed and deployed at the edge of IPv6 networks
  - **Dual stack (IPv4/IPv6)**
    provides transition mechanism from IPv4 to IPv6; supports connectivity for both protocols
- **Single IP address management**
  single IP address management for a virtual stack of up to 16 switch

**Resiliency and high availability**

- **IEEE 802.1s Multiple Spanning Tree**
  provides high link availability in multiple VLAN environments by allowing multiple spanning trees; provides legacy support for IEEE 802.1d and IEEE 802.1w
- **Port trunking and link aggregation**
  - **Trunking**
    supports up to eight links per trunk to increase bandwidth and create redundant connections
  - **IEEE 802.3ad Link Aggregation Protocol (LACP)**
    eases configuration of trunks through automatic configuration
- **SmartLink**
  provides easy-to-configure link redundancy of active and standby links

**Layer 2 switching**

- **GARP VLAN Registration Protocol**
  allows automatic learning and dynamic assignment of VLANs
- **VLAN support and tagging**
  supports IEEE 802.1Q (4,094 VLAN IDs) and 256 VLANs simultaneously
- **Per-VLAN Spanning Tree Plus (PVST+)**
  allows each VLAN to build a separate spanning tree to improve link bandwidth usage in network environments with multiple VLANs

**Layer 3 routing**

- **Static IP routing**
  provides manually configured routing; includes ECMP capability
- **Routing Information Protocol (RIP)**
  provides RIPv1 and RIPv2 routing

**Security**

- **Access control lists (ACLs)**
  provide IP Layer 3 filtering based on source/destination IP address/subnet and source/destination TCP/UDP port number
- **Identity-driven ACL**
  enables implementation of a highly granular and flexible access security policy and VLAN assignment specific to each authenticated network user
- **Source-port filtering**
  allows only specified ports to communicate with each other
- **RADIUS/TACACS+**
  eases switch management security administration by using a password authentication server
- **Secure protocols for encryption of management traffic**
- **Secure Shell (SSHv2)**
  encrypts all transmitted data for secure, remote CLI access over IP networks

## Overview

- **Secure Sockets Layer (SSL)**
  encrypts all HTTP traffic, allowing secure access to the browser-based management GUI in the switch
- **Secure FTP (SFTP)**
  encrypts uploads and downloads of configuration file
- **Port security**
  allows access only to specified MAC addresses, which can be learned or specified by the administrator
- **Dynamic IP lockdown**
  works with DHCP protection to block traffic from unauthorized hosts, preventing IP source address spoofing
- **DHCP protection**
  blocks DHCP packets from unauthorized DHCP servers, preventing denial-of-service attacks
- **Dynamic ARP protection**
  blocks ARP broadcasts from unauthorized hosts, preventing eavesdropping or theft of network data
- **MAC address lockout**
  prevents configured particular MAC addresses from connecting to the network
- **MAC address lockdown**
  allows only specified MAC addresses access to the network on a specified port
- **Multiple user authentication methods**
- **IEEE 802.1X**
  uses an IEEE 802.1X supplicant on the client in conjunction with a RADIUS server to authenticate in accordance with industry
  standards
- **Web-based authentication**
  provides a browser-based environment, similar to IEEE 802.1X, to authenticate clients that do not support the IEEE 802.1X supplicant
- **MAC-based authentication**
  authenticates the client with the RADIUS server based on the client's MAC address
- **Authentication flexibility—2 IEEE 802.1X**
  provides authentication of multiple IEEE 802.1X users per port; prevents user "piggybacking" on another user's IEEE 802.1X authentication
- **Protected ports**
  prevents designated ports from communicating with each other while allowing access to unprotected ports
- **Per-port broadcast throttling**
  selectively configures broadcast control on heavy traffic port uplinks
- **Physical security**
- **Front-panel buttons**
  provides the ability to disable reset and clear buttons on front panel for added security
- **Kensington Lock slot**
  includes a Kensington Lock slot for securing the switches in open-space deployments
- **Spanning Tree Protocol Root Guard**
  when running the spanning tree protocol, protects root bridge from malicious attacks or configuration mistakes
- **STP BPDU port protection**
  blocks Bridge Protocol Data Units (BPDUs) on ports that do not require BPDUs, preventing forged BPDU attacks

**Convergence**

- **IP multicast snooping and data-driven IGMP**
  automatically prevent flooding of IP multicast traffic
- **LLDP-MED (Media Endpoint Discovery)**
  defines a standard extension of LLDP that stores values for parameters such as QoS and VLAN to automatically configure network devices such as IP phones
- **IEEE 802.1AB Link Layer Discovery Protocol (LLDP)**
  facilitates easy mapping using network management applications with LLDP automated device discovery protocol

## Overview

- **PoE allocations**
  supports multiple methods (automatic, IEEE 802.3af class, LLDP-MED, or user-specified) to allocate PoE power for more efficient energy savings
- **LLDP-CDP compatibility**
  receives and recognizes CDP packets from Cisco's IP phones for seamless interoperation
- **Local MAC Authentication**
  assigns attributes such as VLAN and QoS using locally configured profile that can be a list of MAC prefixes

**Unified Wired and Wireless**

- **HTTP redirect function**
  supports HPE Intelligent Management Center (IMC) bring your own device (BYOD) solution

**Monitor and diagnostics**

- **Port mirroring**
  enables traffic on a port to be simultaneously sent to a network analyzer for monitoring
- **Network tools**
  command-line interface includes telnet client, ping, traceroute, and Layer 2 link test tools for diagnostics
- **Logging**
  local and remote logging of events via SNMP (v2c and v3) and syslog
- **Troubleshooting**
  ingress and egress port monitoring enable network problem solving
- **Uni-Directional Link Detection (UDLD)**
  monitors a link between two switches and blocks the ports on both ends of the link if the link goes down at any point between the two devices
- **Find-Fix-Inform**
  finds and fixes common network problems automatically, then informs the administrator
- **RMON, XRMON, sFlow, and SMON**
  provide advanced monitoring and reporting capabilities for statistics, history, alarms, and events
- **Port monitoring for network threats**
  provides sampled port traffic, using sFlow technology, to the HPE Network Immunity Manager application for network-behavior-anomaly-detection (NBAD) analysis—to detect and mitigate threats at the port where they originated

**Flexibility**

- **Flexible mounting**
  - **Rackable**
    can be mounted in a standard 19-inch rack with included hardware
  - **Wall mountable**
    allows the switch to be mounted to a wall using included hardware
  - **Surface mountable**
    allows the product to be mounted above or below a surface (such as a desk or table) with included hardware
- **Compact size**
  product is designed to reduce space requirements (see product specifications for exact dimensions)
- **Power supply clip**
  provides the ability to attach or detach the power supply to the device, allowing for either an integrated solution or a separate one, depending on deployment requirements

**Product Architecture**

## Overview

- **Energy-efficient design**:
  - **Fans**
    fanless design helps reduce power consumption
  - **Port LEDs**
    port link and activity LEDs can be turned off to conserve energy
  - **Port low-power mode option**
    when no link is detected on a port, the port will automatically go into low-power mode to conserve energy

**Warranty and support**

- **Limited Lifetime Warranty**
  see **http://www.hpe.com/networking/warrantysummary** for warranty and support information included with your product purchase.
- **Software releases**
  to find software for your product, refer to **http://www.hpe.com/networking/support**; for details on the software releases available with your product purchase, refer to **http://www.hpe.com/networking/warrantysummary**

## Configuration

## Build To Order:

**BTO is a standalone unit with no integration. BTO products ship standalone are not part of a CTO or Rack-Shippable solution.**

| | |
|---|---|
| Aruba 2615 8 PoE Switch<br>• 8 autosensing 10/100 ports<br>• 2 dual-personality ports RJ-45 10/100/1000 port ; or an SFP slot<br>• min=0 \ max=2 SFP Transceivers<br>• 1U - Height | J9565A<br>See Configuration<br>**NOTE:**1, 2 |
| No Power Cord<br>• No Localized Power Cord Selected | J9565A#AC3 |

**Configuration Rules:**

**Note 1** **The following Transceivers install into this switch:**

| | |
|---|---|
| Aruba 1G SFP LC SX 500m OM2 MMF Transceiver | J4858D |
| Aruba 1G SFP LC LX 10km SMF Transceiver | J4859D |
| Aruba 1G SFP LC LH 70km SMF Transceiver | J4860D |
| Aruba 1G SFP RJ45 T 100m Cat5e Transceiver | J8177D |
| Aruba 100M SFP LC FX 2km MMF Transceiver | J9054D |

**Note 2** **Localization required. (See Localization Menu for list.)**

## Internal Power Supplies

No Power supplies

## Transceivers

### SFP Transceivers

| | |
|---|---|
| Aruba 100M SFP LC FX 2km MMF Transceiver | J9054D |
| Aruba 1G SFP LC SX 500m OM2 MMF Transceiver | J4858D |
| Aruba 1G SFP LC LX 10km SMF Transceiver | J4859D |
| Aruba 1G SFP LC LH 70km SMF Transceiver | J4860D |
| Aruba 1G SFP RJ45 T 100m Cat5e Transceiver | J8177D |

## Switch Enclosure Options

### Rack Mount Kit

| | |
|---|---|
| HPE X410 1U Universal 4-post Rackmount Kit | J9583A |

## Configuration

### Option Mounting Kit

| | |
|---|---|
| Aruba X510 1U Cable Guard | J9700A |

## Technical Specifications

| | | |
|---|---|---|
| **Aruba 2615 8 PoE Switch** (J9565A) | | |
| **I/O ports and slots** | 8 RJ-45 autosensing 10/100 PoE ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3af PoE); Media Type: Auto-MDIX; Duplex: half or full | |
| | 2 dual-personality ports; each port can be used as either an RJ-45 10/100/1000 port (IEEE 802.3 Type 10Base-T; an IEEE 802.3u Type 100Base-TX; an IEEE 802.3ab 1000Base-T Gigabit Ethernet); or an SFP slot (for use with SFP transceivers) | |
| | 1 RJ-45 serial console port | |
| **Physical characteristics** | **Dimensions** | 10(w) x 6.28(d) x 1.75(h) in (25.4 x 15.95 x 4.45 cm) (1U height) |
| | **Weight** | 3.66 lb (1.66 kg) including power adapter and power cord |
| **Memory and processor** | **Processor** | Freescale PowerPC 8313 @ 333 MHz, 32 MB flash, 128 MB DDR2 SDRAM; packet buffer size: 512 KB dynamically allocated |
| **Mounting and enclosure** | Mounts in an EIA-standard 19-inch telco rack or equipment cabinet; horizontal surface mounting; wall mounting | |
| **Performance** | **100 Mb Latency** | < 5.3 µs (LIFO 64-byte packets) |
| | **1000 Mb Latency** | < 2.7 µs (LIFO 64-byte packets) |
| | **Throughput** | up to 4.1 Mpps |
| | **Switching capacity** | 5.6 Gbps |
| | **MAC address table size** | 8000 entries |
| **Environment** | **Operating temperature** | 32°F to 113°F (0°C to 45°C) |
| | **Operating relative humidity** | 15% to 95% @ 104°F (40°C), noncondensing |
| | **Nonoperating/Storage temperature** | -40°F to 158°F (-40°C to 70°C) |
| | **Nonoperating/Storage temperature** | 15% to 95% @ 149°F (65°C), noncondensing |
| | **Altitude** | up to 10,000 ft (3 km) |
| | **Acoustic** | Power: 0 dB, Pressure: 0 dB |
| **Electrical characteristics** | **Description** | Use only the external power adapter module (5070-6082, PA1 AC adapter) supplied with this product |
| | **Maximum heat dissipation** | 87 BTU/hr (91.79 kJ/hr) |
| | **Voltage** | 100 - 240 VAC, rated |
| | **Current** | 1.5 A |
| | **Maximum power rating** | 86 W |
| | **Idle power** | 11 W |
| | **PoE power** | 67 W |
| | **Frequency** | 50/60 Hz |
| | **Notes** | Idle power is the actual power consumption of the device with no ports connected.<br>Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all |

## Technical Specifications

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|---|---|---|
| | | modules populated.<br>PoE power is the total power budget available to all PoE ports |
| **Safety** | cUL (CSA 22.2 No. 60950); CE Labeled; UL 60950-1; UL Listed; CAN/CSA 22.2 No. 60950; EN 60825; AS/NZS 60950; IEC 60950-1; EN 60950-1 | |
| **Emissions** | FCC part 15 Class A; VCCI Class A; EN 55022 Class A; CISPR 22 Class A; ICES-003 (Canada); AS/NZS CISPR 22; IEC/EN 61000-3-2; IEC/EN 61000-3-3; IEC 61000:4-2, 4-3, 4-4, 4-5, 4-6, 4-8, 4-11 | |
| **Immunity** | **Generic** | EN 55024, CISPR 24 |
| | **EN** | EN 55024, CISPR 24 |
| | **ESD** | IEC 61000-4-2 |
| | **Radiated** | IEC 61000-4-3 |
| | **EFT/Burst** | IEC 61000-4-4 |
| | **Surge** | IEC 61000-4-5 |
| | **Conducted** | IEC 61000-4-6 |
| | **Power frequency magnetic field** | IEC 61000-4-8 |
| | **Voltage dips and interruptions** | IEC 61000-4-11 |
| | **Harmonics** | EN 61000-3-2, IEC 61000-3-2 |
| | **Flicker** | EN 61000-3-3, IEC 61000-3-3 |
| **Management** | HPE PCM+; HPE PCM (included); command-line interface; Web browser; configuration menu; out-of-band management (serial RS-232C); IEEE 802.3 Ethernet MIB; Repeater MIB; Ethernet Interface MIB | |
| **Notes** | When using mini-GBICs with this product, mini-GBICs with revision "B" or later (product number ends with the letter "B" or later, e.g., J4858B, J4859C) are required.<br>This product comes with a power supply clip adapter. The adapter dimensions are 1.7(d) x 10.7(w) x 3.8(h) in. (4.35 x 27.25 x 9.6 cm). The weight of the power supply clip adapter is .31 lb (.14 kg). | |
| **Services** | Refer to the Hewlett Packard Enterprise website at **http://www.hpe.com/networking/services** for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office. | |

**Standards and protocols**

**Denial of service protection**
Automatic Filtering of well known Denial of Service Packets

**Device management**
RFC 1591 DNS (client)
Multiple Configuration Files
Multiple Software Images
SSHv1/SSHv2 Secure Shell
TACACS/TACACS+
Web UI

**General protocols**
IEEE 802.1D MAC Bridges
IEEE 802.1p Priority
IEEE 802.1Q VLANs
IEEE 802.1s Multiple Spanning Trees
IEEE 802.1w Rapid Reconfiguration of Spanning Tree
IEEE 802.3 Type 10BASE-T
IEEE 802.3ab 1000BASE-T
RFC 3484 Default Address Selection for IPv6
RFC 3513 IPv6 Addressing Architecture
RFC 3596 DNS Extension for IPv6
RFC 3810 Multicast Listener Discovery Version 2 (MLDv2) for IPv6
RFC 4022 MIB for TCP
RFC 4113 MIB for UDP
RFC 4251 SSHv6 Architecture
RFC 4252 SSHv6 Authentication
RFC 4253 SSHv6 Transport Layer
RFC 4291 IP Version 6 Addressing Architecture
RFC 4293 MIB for IP
RFC 4419 Key Exchange for SSH
RFC 4443 ICMPv6RFC 4861 IPv6 Neighbor Discovery
RFC 4862 IPv6 Stateless Address Auto-configuration

**MIBs**
RFC 1155 Structure & ID of Mgmt Info for TCP/IP Internets
RFC 1213 MIB II

## Technical Specifications

IEEE 802.3ad Link Aggregation Control Protocol (LACP)
IEEE 802.3af Power over Ethernet
IEEE 802.3u 100BASE-X
IEEE 802.3x Flow Control
RFC 768 UDP
RFC 783 TFTP Protocol (revision 2)
RFC 792 ICMP
RFC 793 TCP
RFC 826 ARP
RFC 854 TELNET
RFC 868 Time Protocol
RFC 951 BOOTP
RFC 1058 RIPv1
RFC 1350 TFTP Protocol (revision 2)
RFC 1723 RIP v2
RFC 1812 IPv4 Routing
RFC 1918 Address Allocation for Private Internet
RFC 2030 Simple Network Time Protocol (SNTP) v4
RFC 2131 DHCP
RFC 2453 RIPv2
UDLD (Uni-directional Link Detection)

**IP multicast**
RFC 3376 IGMPv3 (host joins only)

**IPv6**
RFC 1981 IPv6 Path MTU Discovery
RFC 2460 IPv6 Specification
RFC 2464 Transmission of IPv6 over Ethernet Networks
RFC 2925 Remote Operations MIB (Ping only)
RFC 3315 DHCPv6 (client only)
RFC 1493 Bridge MIB
RFC 2021 RMONv2 MIB
RFC 2578 Structure of Management Information Version 2 (SMIv2)
RFC 2613 SMON MIB
RFC 2618 RADIUS Client MIB
RFC 2620 RADIUS Accounting MIB
RFC 2665 Ethernet-Like-MIB
RFC 2668 802.3 MAU MIB
RFC 2674 802.1p and IEEE 802.1Q Bridge MIB
RFC 2737 Entity MIB (Version 2)
RFC 2863 The Interfaces Group MIB
RFC 4836 Managed Objects for 802.3 Medium Attachment Units (MAU)

**Network management**
IEEE 802.1AB Link Layer Discovery Protocol (LLDP)
RFC 1098 A Simple Network Management Protocol (SNMP)
RFC 2819 Four groups of RMON: 1 (statistics), 2 (history), 3 (alarm) and 9 (events)
RFC 3176 sFlow
RFC 5424 Syslog Protocol
SNMPv1/v2c/v

**QoS/CoS**
RFC 2474 DiffServ precedence, with 4 queues per port
RFC 2475 DiffServ Architecture
RFC 2597 DiffServ Assured Forwarding (AF)
RFC 2598 DiffServ Expedited Forwarding (EF)
Ingress Rate Limiting

**Security**
IEEE 802.1X Port Based Network Access Control
RFC 1492 TACACS+
RFC 2138 RADIUS Authentication
RFC 2866 RADIUS Accounting
Access Control Lists (ACLs)
MAC Authentication
MAC Lockdown
MAC Lockout
Port Security
Secure Sockets Layer (SSL)
Web Authentication

## Accessories

| | | |
|---|---|---|
| **Aruba 2615 Switch Series accessories** | **Aruba 2615 8 PoE Switch (J9565A)** | |
| | HPE X121 1G SFP LC SX Transceiver | J4858C |
| | HPE X121 1G SFP LC LX Transceiver | J4859C |
| | HPE X121 1G SFP LC LH Transceiver | J4860C |
| | HPE X111 100M SFP LC FX Transceiver | J9054C |
| | HP X122 1G SFP LC BX-D Transceiver | J9142B |
| | HP X122 1G SFP LC BX-U Transceiver | J9143B |
| | HPE LC to LC Multi-mode OM3 2-Fiber 0.5m 1-Pack Fiber Optic Cable | AJ833A |
| | HPE Premier Flex LC/LC Multi-mode OM4 2 fiber 1m Cable | QK732A |
| | HPE Premier Flex LC/LC Multi-mode OM4 2 fiber 2m Cable | QK733A |
| | HPE Premier Flex LC/LC Multi-mode OM4 2 fiber 5m Cable | QK734A |
| | HPE Premier Flex LC/LC Multi-mode OM4 2 fiber 15m Cable | QK735A |
| | HPE Premier Flex LC/LC Multi-mode OM4 2 fiber 30m Cable | QK736A |
| | HPE Premier Flex LC/LC Multi-mode OM4 2 fiber 50m Cable | QK737A |
| | Aruba X510 1U Cable Guard | J9700A |

## Accessory Product Details

**NOTE:** Details are not available for all accessories. The following specifications were available at the time of publication.

| | | |
|---|---|---|
| **HPE X121 1G SFP LC SX Transceiver** (J4858C)<br><br>A small form-factor pluggable (SFP) Gigabit SX transceiver that provides a full-duplex Gigabit solution up to 550 m on multimode fiber. | **Ports** | 1 LC 1000BASE-SX port; Duplex: full only |
| | **Physical characteristics** | Dimensions: 2.24(d) x 0.54(w) x 0.48(h) in. (5.69 x 1.37 x 1.22 cm)<br>Weight: 0.04 lb. (0.02 kg)<br>Transceiver form factor: SFP |
| | **Environment** | Operating temperature: 32°F to 158°F (0°C to 70°C)<br>Operating relative humidity: 5% to 85%, noncondensing<br>Nonoperating/Storage temperature: -40°F to 203°F (-40°C to 85°C)<br>Altitude: up to 10,000 ft. (3 km) |
| | **Electrical characteristics** | Power consumption typical: 0.4 W<br>Power consumption maximum: 0.7 W |
| | **Cabling** | Type:<br>• 62.5/125 µm or 50/125 µm (core/cladding) diameter, graded-index, low metal content, multimode fiber optic, complying with ITU-T G.651 and ISO/IEC 793-2 Type A1b or A1a, respectively;<br><br>Maximum distance:<br>• 2-220 m (62.5 µm core diameter, 160 MHz*km bandwidth<br>• 2-275 m (62.5 µm core diameter, 200 MHz*km bandwidth<br>• 2-500 m (50 µm core diameter, 400 MHz*km bandwidth)<br>• 2-550 m (50 µm core diameter, 500 MHz*km bandwidth)<br><br>Cable length: 2-550m<br>Fiber type: Multi Mode |
| | **Services** | Refer to the Hewlett Packard Enterprise website at **http://www.hpe.com/networking/services** for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office. |
| **HPE X121 1G SFP LC LX Transceiver** (J4859C)<br><br>HPE X121 1G SFP LC LX Transceiver: An SFP format gigabit transceiver with LC connectors using LX technology. | **Ports** | 1 LC 1000BASE-LX port (IEEE 802.3z Type 1000BASE-LX); Duplex: full only |
| | **Physical characteristics** | Dimensions: 2.24(d) x 0.54(w) x 0.486(h) in. (5.69 x 1.37 x 1.23 cm)<br>Weight:0.04 lb. (0.02 kg) |
| | **Environment** | Operating temperature: 32°F to 158°F (0°C to 70°C)<br>Operating relative humidity: 0% to 85%, noncondensing<br>Nonoperating/Storage temperature: -40°F to 212°F (-40°C to 100°C)<br>Altitude: up to 10,000 ft. (3 km) |
| | **Cabling** | Type:<br>• Either single mode or multimode; 62.5/125 µm or 50/125 µm (core/cladding) diameter, graded-index, low metal content, multimode fiber optic, complying with ITU-T G.651 and ISO/IEC 793-2 Type A1b or A1a, respectively; Low metal content, single- |

## Accessory Product Details

| | | |
|---|---|---|
| | | mode fiber-optic, complying with ITU-T G.652 and ISO/IEC 793-2 Type B1;<br><br>Maximum distance:<br><br>• 2-550 m (multimode 62.5 μm core diameter, 500 MHz*km bandwidth)<br>• 2-550 m (multimode 50 μm core diameter, 400 MHz*km bandwidth)<br>• 2-550 m (multimode 50 μm core diameter, 500 MHz*km bandwidth)<br>• 2-10,000 m (single-mode fiber) |
| | **Notes** | A mode conditioning patch cord may be needed in some multimode fiber installations.<br>Wavelength: 1310nm<br>Power Consumption: < 500mW Typical |
| | **Services** | Refer to the Hewlett Packard Enterprise website at **http://www.hpe.com/networking/services** for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office. |
| **HPE X121 1G SFP LC LH Transceiver** (J4860C)<br><br>A small form-factor pluggable (SFP) Gigabit LH transceiver that provides a full-duplex Gigabit solution up to 70 km on single-mode fiber. | **Ports** | 1 LC 1000BASE-LH port (no IEEE standard exists for 1550 nm optics); Duplex: full only |
| | **Physical characteristics** | Dimensions: 2.17(d) x 0.60(w) x 0.46(h) in. (5.5 x 1.53 x 1.18 cm)<br>Weight: 0.04 lb. (0.02 kg) |
| | **Environment** | Operating temperature: -40°F to 185°F (-40°C to 85°C)<br>Operating relative humidity: 0% to 95% @ 77°F (25°C), noncondensing<br>Nonoperating/Storage temperature: -40°F to 185°F (-40°C to 85°C)<br>Altitude: up to 10,000 ft. (3 km) |
| | **Cabling** | Cable type:<br><br>• Low metal content, single-mode fiber-optic, complying with ITU-T G.652 and ISO/IEC 793-2 Type B1;<br><br>Maximum distance:<br><br>• 10-70,000 m (single-mode fiber) |
| | **Notes** | Power consumption is 0.8 watts typical with 1 watt maximum at 100% utilization.<br>For distances less than 20 km, a 10 dB attenuator must be used.<br>For distances between 20 km and 40 km, a 5 dB attenuator must be used.<br>Attenuators can be purchased from most cable vendors. |
| | **Services** | Refer to the Hewlett Packard Enterprise website at **http://www.hpe.com/networking/services** for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office. |
| | **Ports** | 1 LC 100BASE-FX port (IEEE 802.3u Type 100BASE-FX); Duplex: half or full |

## Accessory Product Details

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| | **Physical characteristics** | Dimensions: 2.7(d) x 0.54(w) x 0.48(h) in. (6.86 x 1.38 x 1.22 cm)<br>Weight: 0.06 lb. (0.03 kg) |
| | **Environment** | Operating temperature: 32°F to 158°F (0°C to 70°C)<br>Operating relative humidity: 5% to 95%<br>Nonoperating/Storage temperature: -40°F to 185°F (-40°C to 85°C)<br>Nonoperating/Storage relative humidity: 5% to 85%<br>Altitude: up to 10,000 ft. (3 km) |
| **HPE X111 100M SFP LC FX Transceiver** (J9054C)<br><br>HP X111 100M SFP LC FX Transceiver: An SFP format 100-megabit transceiver with LC connectors using FX technology. | **Cabling** | Cable type:<br>62.5/125 ìm or 50/125 ìm (core/cladding) diameter, graded-index, low metal content, multimode fiber optic, complying with ITU-T G.651 and ISO/IEC 793-2 Type A1b or A1a, respectively; Maximum distance:<br>• 2 km (full duplex) or 412 m (half duplex) |
| | **Notes** | Transmitter wavelength: 1310nm<br>Power consumption is 1.1 watt maximum.<br>For supported platforms and minimum software requirements to support this product, see the document titled "Support for the J9054C 100-FX SFP-LC Transceiver" on the "ProCurve Mini-GBICs and SFPs" Manuals Web page. |
| | **Services** | Refer to the Hewlett Packard Enterprise website at **http://www.hpe.com/networking/services** for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office. |

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| **HP X122 1G SFP LC BX-D Transceiver** (J9142B)<br><br>A small form-factor pluggable (SFP) Gigabit-BX (bi-directional) "downstream" transceiver that provides a full-duplex Gigabit solution up to 10 km on one strand of single-mode fiber. The J9142B connects to the J9143B "upstream" transceiver, or to any IEEE-standard 1000BASE-BX10-U ("upstream") device. | **Ports** | 1 LC 1000BASE-BX10 port (IEEE 802.3ah Type 1000BASE-BX10-D); Duplex: full only | |
| | **Physical characteristics** | **Dimensions** | 2.19(d) x 0.54(w) x 0.46(h) in. (5.57 x 1.37 x 1.18 cm) |
| | | **Weight** | 0.04 lb. (0.02 kg) |
| | **Environment** | **Operating temperature** | 32ºF to 158ºF (0ºC to 70ºC) |
| | | **Operating relative humidity** | 0% to 95%, non-condensing |
| | | **Non-operating/ Storage temperature** | –40ºF to 185ºF –40ºC to 85ºC) |
| | **Cabling** | Type:<br>Single-mode fiber optic, complying with ITU-T G.652;<br><br>Maximum distance:<br>• 0.5-10,000 m (single-mode fiber) | |
| | **Notes** | Transmit wavelength: 1490 nm. Receive wavelength: 1310 nm.<br>Power consumption is 1 watt maximum.<br>For supported platforms and minimum software requirements to support this product, see the document titled "Support for the HPE BX Transceivers" on the "HPE Mini-GBICs and SFPs" Manuals Web page.<br>The J9142B connects to the J9143B "upstream" transceiver, or to any IEEE-standard 1000BASE-BX10-U ("upstream") device. (A 1000-BX-D transceiver can only connect to a 1000-BX-U product. You cannot connect two 1000-BX-D transceivers together.) | |

## Accessory Product Details

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| | **Services** | Refer to the Hewlett Packard Enterprise website at **http://www.hpe.com/networking/services** for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office. | |

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| **HP X122 1G SFP LC BX-U Transceiver** (J9143B)<br><br>A small form-factor pluggable (SFP) Gigabit-BX (bi-directional) "upstream" transceiver that provides a full-duplex Gigabit solution up to 10 km on one strand of single-mode fiber. The J9143B connects to the J9142B "downstream" transceiver, or to any IEEE-standard 1000BASE-BX10-D ("downstream") device. | **Ports** | 1 LC 1000BASE-BX10 port (IEEE 802.3ah Type 1000BASE-BX10-U); Duplex: full only | |
| | **Physical characteristics** | **Dimensions** | 2.19(d) x 0.54(w) x 0.46(h) in. (5.57 x 1.37 x 1.18 cm) |
| | | **Weight** | 0.04 lb. (0.02 kg) |
| | **Environment** | **Operating temperature** | 32ºF to 158ºF (0ºC to 70ºC) |
| | | **Operating relative humidity** | 0% to 95%, non-condensing |
| | | **Non-operating/ Storage temperature** | –40ºF to 185ºF –40ºC to 85ºC) |
| | **Cabling** | Type:<br>Single-mode fiber optic, complying with ITU-T G.652;<br><br>Maximum distance:<br>• 0.5-10,000 m (single-mode fiber) | |
| | **Notes** | Transmit wavelength: 1310 nm. Receive wavelength: 1490 nm.<br>For supported platforms and minimum software requirements to support this product, see the document titled "Support for the HPE BX Transceivers" on the "HPE Mini-GBICs and SFPs" Manuals Web page.<br>The J9143B connects to the J9142B "downstream" transceiver, or to any IEEE-standard 1000BASE-BX10-D ("downstream") device. (A 1000-BX-U transceiver can only connect to a 1000-BX-D product. You cannot connect two 1000-BX-U transceivers together.)<br>Power consumption is 1 watt maximum. | |
| | **Services** | Refer to the Hewlett Packard Enterprise website at **http://www.hpe.com/networking/services** for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office. | |

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| **HPE LC to LC Multi-mode OM3 2-Fiber 0.5m 1-Pack Fiber Optic Cable** (AJ833A) | **Cabling** | **Cable type**:<br>50/125 µm (core/cladding) diameter, mulitimode fiber optic, with effective modal bandwidth of 2000 MHz/km as detailed in TIA-492AAAC for distances of up to 300 m<br><br>**Maximum distance**:<br>10Gbps Transfer Rate (Ethernet): 300m |
| | **Notes** | Cable Specs: Tight buffered duplex fiber optic multimode OM3 50/125 um fiber optic cable and Ethernet assembly with LC duplex connectors on one end and LC duplex connectors on other end. |

## Accessory Product Details

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| | • Dimensions: Core diameter: 50 ± 3.0um Cladding diameter: 125 ± 2.0um Coating diameter: 245 ± 10um<br>• Optical glass: Bandwidth: For LED sources: 1500/500 MHz-km @850/1300nm.<br>• Optical glass: Bandwidth: For Laser sources: 2000/500 MHz-km @850/1300nm. VCSEL Laser sources: 600 / 600 meters @850/1300nm for Gigabit Ethernet compliant links.<br>• CABLE: The cable is duplex zipcord graded index 50/125um multimode optical fiber and designed to work in both the 850 and 1300 nm wavelength windows.<br>• BULK CABLE & CABLE ASSEMBLY CONFIGURATION:<br>• Jacket Material: Riser Grade - Low Smoke Zero Halogen thermoplastic.<br>• Jacket Color: Aqua for OM3 multimode per TIA 598<br>• Boot Color: White<br>• Insertion Loss: less than 0.5 dB @ 850 with LED source, 0.003 dB/M added for lengths > 30 meters.<br>• Maximum Cable attenuation: 3.0 dB/km @ 850 nm, 1.0 dB/Km @ 1310 nm @ 23°C as tested in accordance with EIA 455-46.<br>• Weight: Air Packed Weight: 1 LB Net Weight: 0.454Kg |
| **Services** | Refer to the Hewlett Packard Enterprise website at **http://www.hpe.com/networking/services** for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office. |

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| **HPE Premier Flex LC/LC Multi-mode OM4 2 fiber 1m Cable** (QK732A) | **Notes** |
| | Cable Specs: Graded-index, "bendable" fiber optic multimode OM3+ 50/125um duplex cable and Ethernet assembly with LC duplex connectors on each end.<br><br>• Core Diameter: 50um ±3um, Cladding diameter: 125um ±2um; Coating diameter: 245 ± 10um<br>• Bandwidth: 3000 MHz-km @ 850nm (Laser)<br>• Jacket Color: Blue<br>• Jacket Material: Riser Grade – Low Smoke Zero Halogen (LSZH) thermoplastic<br>• Boot Color: White<br>• Outer Jacket Print: HPE PremierFlex OM3+ Fiber Optic Cable, 50/125um, Type OFNR (UL), LSZH, cUL, OFN FT4, ROHS. Cable also has a longitudinal white stripe that runs the entire length of the cable.<br>• Insertion Loss: Less than 0.5dB @ 850nm with LED source, 0.003dB/m added for lengths >30m<br>• Maximum Cable Attenuation: 3.0 dB/km @ 850nm, 1.0 dB/km @ 1310nm @ 23°C as tested in accordance with EIA 455-45 |
| **Services** | Refer to the Hewlett Packard Enterprise website at **http://www.hpe.com/networking/services** for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office. |

## Accessory Product Details

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| **HPE Premier Flex LC/LC Multi-mode OM4 2 fiber 2m Cable** (QK733A) | |
| **Notes** | Cable Specs: Graded-index, "bendable" fiber optic multimode OM3+ 50/125um duplex cable and Ethernet assembly with LC duplex connectors on each end.<br><br>• Core diameter: 50um ±3um, Cladding diameter: 125um ±2um; Coating diameter: 245 ± 10um<br>• Bandwidth: 3000 MHz-km @ 850nm (Laser)<br>• Jacket Color: Blue<br>• Jacket Material: Riser Grade – Low Smoke Zero Halogen (LSZH) thermoplastic<br>• Boot Color: White<br>• Outer Jacket Print: HPE PremierFlex OM3+ Fiber Optic Cable, 50/125um, Type OFNR (UL), LSZH, cUL, OFN FT4, ROHS. Cable also has a longitudinal white stripe that runs the entire length of the cable.<br>• Insertion Loss: Less than 0.5dB @ 850nm with LED source, 0.003dB/m added for lengths >30m<br>• Maximum Cable Attenuation: 3.0 dB/km @ 850nm, 1.0 dB/km @ 1310nm @ 23°C as tested in accordance with EIA 455-45 |
| **Services** | Refer to the Hewlett Packard Enterprise website at **http://www.hpe.com/networking/services** for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office. |
| **HPE Premier Flex LC/LC Multi-mode OM4 2 fiber 5m Cable** (QK734A) | |
| **Notes** | Cable Specs: Graded-index, "bendable" fiber optic multimode OM3+ 50/125um duplex cable and Ethernet assembly with LC duplex connectors on each end.<br><br>• Core diameter: 50um ±3um, Cladding diameter: 125um ±2um; Coating diameter: 245 ± 10um<br>• Bandwidth: 3000 MHz-km @ 850nm (Laser)<br>• Jacket Color: Blue<br>• Jacket Material: Riser Grade – Low Smoke Zero Halogen (LSZH) thermoplastic<br>• Boot Color: White<br>• Outer Jacket Print: HPE PremierFlex OM3+ Fiber Optic Cable, 50/125um, Type OFNR (UL), LSZH, cUL, OFN FT4, ROHS. Cable also has a longitudinal white stripe that runs the entire length of the cable.<br>• Insertion Loss: Less than 0.5dB @ 850nm with LED source, 0.003dB/m added for lengths >30m<br>• Maximum Cable Attenuation: 3.0 dB/km @ 850nm, 1.0 dB/km @ 1310nm @ 23°C as tested in accordance with EIA 455-45 |
| **Services** | Refer to the Hewlett Packard Enterprise website at **http://www.hpe.com/networking/services** for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office. |
| **HPE Premier Flex LC/LC Multi-mode OM4 2 fiber 15m Cable** (QK735A) | |
| **Notes** | Cable Specs: Graded-index, "bendable" fiber optic multimode OM3+ 50/125um duplex cable and Ethernet assembly with LC duplex connectors on each end.<br><br>• Core diameter: 50um ±3um, Cladding diameter: 125um ±2um; Coating diameter: 245 ± 10um |

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| | | • Bandwidth: 3000 MHz-km @ 850nm (Laser)<br>• Jacket Color: Blue<br>• Jacket Material: Riser Grade – Low Smoke Zero Halogen (LSZH) thermoplastic<br>• Boot Color: White<br>• Outer Jacket Print: HPE PremierFlex OM3+ Fiber Optic Cable, 50/125um, Type OFNR (UL), LSZH, cUL, OFN FT4, ROHS. Cable also has a longitudinal white stripe that runs the entire length of the cable.<br>• Insertion Loss: Less than 0.5dB @ 850nm with LED source, 0.003dB/m added for lengths >30m<br>• Maximum Cable Attenuation: 3.0 dB/km @ 850nm, 1.0 dB/km @ 1310nm @ 23°C as tested in accordance with EIA 455-45 |
| | **Services** | Refer to the Hewlett Packard Enterprise website at **http://www.hpe.com/networking/services** for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office. |
| **HPE Premier Flex LC/LC Multi-mode OM4 2 fiber 30m Cable** (QK736A) | **Notes** | Cable Specs: Graded-index, "bendable" fiber optic multimode OM3+ 50/125um duplex cable and Ethernet assembly with LC duplex connectors on each end.<br><br>• Core diameter: 50um ±3um, Cladding diameter: 125um ±2um; Coating diameter: 245 ± 10um<br>• Bandwidth: 3000 MHz-km @ 850nm (Laser)<br>• Jacket Color: Blue<br>• Jacket Material: Riser Grade – Low Smoke Zero Halogen (LSZH) thermoplastic<br>• Boot Color: White<br>• Outer Jacket Print: HPE PremierFlex OM3+ Fiber Optic Cable, 50/125um, Type OFNR (UL), LSZH, cUL, OFN FT4, ROHS. Cable also has a longitudinal white stripe that runs the entire length of the cable.<br>• Insertion Loss: Less than 0.5dB @ 850nm with LED source, 0.003dB/m added for lengths >30m<br>• Maximum Cable Attenuation: 3.0 dB/km @ 850nm, 1.0 dB/km @ 1310nm @ 23°C as tested in accordance with EIA 455-45 |
| | **Services** | Refer to the Hewlett Packard Enterprise website at **http://www.hpe.com/networking/services** for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office. |
| **HPE Premier Flex LC/LC Multi-mode OM4 2 fiber 50m Cable** (QK737A) | **Notes** | Cable Specs: Graded-index, "bendable" fiber optic multimode OM3+ 50/125um duplex cable and Ethernet assembly with LC duplex connectors on each end.<br><br>• Core diameter: 50um ±3um, Cladding diameter: 125um ±2um; Coating diameter: 245 ± 10um<br>• Bandwidth: 3000 MHz-km @ 850nm (Laser)<br>• Jacket Color: Blue<br>• Jacket Material: Riser Grade – Low Smoke Zero Halogen (LSZH) thermoplastic<br>• Boot Color: White<br>• Outer Jacket Print: HPE PremierFlex OM3+ Fiber Optic Cable, 50/125um, |

## Accessory Product Details

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| | | Type OFNR (UL), LSZH, cUL, OFN FT4, ROHS. Cable also has a longitudinal white stripe that runs the entire length of the cable.<br>• Insertion Loss: Less than 0.5dB @ 850nm with LED source, 0.003dB/m added for lengths >30m<br>• Maximum Cable Attenuation: 3.0 dB/km @ 850nm, 1.0 dB/km @ 1310nm @ 23°C as tested in accordance with EIA 455-45 |
| | **Services** | Refer to the Hewlett Packard Enterprise website at **http://www.hpe.com/networking/services** for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office. |
| **Aruba X510 1U Cable Guard** (J9700A) | **Notes** | Dimensions:10.94" x 3.62" x 1.69" or 27.8cm x 9.2cm x 4.3cm w/ears<br>10.94" x 1.69" x 1.69" or 27.8cm x 4.3cm x 4.3cm without ears<br>Weight: 1.262 lbs or .57 kg (including faceplate, ears, and screws) 1.026 lbs or .47 kg (faceplate only) |
| | **Services** | Refer to the Hewlett Packard Enterprise website at **http://www.hpe.com/networking/services** for details |

## Summary of Changes

| Date | Version History | Action | Description of Change: |
|---|---|---|---|
| 05-Feb-2018 | Version 16 | Changed | Configuration section updated |
| 01-Aug-2016 | Version 15 | Changed | Adding #AC3 Option on Configuration Menu. Technical Specifications updated. |
| 22-Apr-2016 | Version 14 | Changed | Document name changed from HPE 2615 Switch Series to Aruba 2615 Switch Series , SKU descriptions updated on all the document |
| 01-Dec-2015 | Version 13 | Changed | Overview and Technical Specifications updated |
| 01-Dec-2014 | Version 12 | Changed | Updated Warranty and support, Key features, Product overview, Features and Technical Specifications |
| 09-Dec-2013 | Version 11 | Changed | Updates were made to all section of the document, including changing the title. |
| 04-Nov-2013 | Version 10 | Added | OM4 Cables were added to Configuration. |
| 12-Jul-2013 | Version 9 | Added | Configuration was added. |
| 10-Jun-2013 | Version 8 | Added | OM4 cables were added. |
| 17-Apr-2012 | Version 7 | Changed | Accessories and Accessory Product Details were revised. |
| 14-Nov-2011 | Version 6 | Added | Additional Accessories were added. |
| 04-Oct-2011 | Version 5 | Changed | Accessories and Accessory Product Details were revised. |
| 28-Sep-2011 | Version 4 | Added | Accessory Product Details was added. |
| 09-May-2011 | Version 3 | Changed | The Accessories section was revised. |
| 13-Sep-2010 | Version 2 | Changed | The QuickSpec was completely revised, including changing the title. |
| 02-June-2010 | Version 1 | Created | Document creation |

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