

## PHYSICAL INTERFACES

### **5406R z12 Switch (J9821A):**

- 6 open module slots
- Supports a maximum of 144 autosensing 10/100/1000 ports or 144 SFP ports or 48 SFP+ ports or 48 HPE Smart Rate Multi-Gigabit or 12 40GbE ports, or a combination

### **5412R z12 Switch (J9822A):**

- 12 open module slots
- Supports a maximum of 288 autosensing 10/100/1000 ports or 288 SFP ports or 96 SFP+ ports or 96 HPE Smart Rate Multi-Gigabit or 24 40GbE ports, or a combination

### **5406R-44G-PoE+/2SFP+ (No PSU) v2 z12 Switch (J9823A):**

- 44 RJ-45 autosensing 10/100/1000 PoE+ ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T, IEEE 802.3at PoE+); Media Type: Auto-MDIX; Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only
- 2 open 10GbE SFP+ transceiver slots
- 4 open module slots
- Supports a maximum of 144 autosensing 10/100/1000 ports or 144 SFP ports or 48 SFP+ ports or 48 HPE Smart Rate Multi-Gigabit or 12 40GbE ports, or a combination

### **5412R-92G-PoE+/2SFP+ (No PSU) v2 z12 Switch (J9825A):**

- 92 RJ-45 autosensing 10/100/1000 PoE+ ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T, IEEE 802.3at PoE+); Media Type: Auto-MDIX; Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only
- 2 open 10GbE SFP+ transceiver slots
- 8 open module slots
- Supports a maximum of 288 autosensing 10/100/1000 ports or 288 SFP ports or 96 SFP+ ports or 96 HPE Smart Rate Multi-Gigabit or 24 40GbE ports, or a combination

### **5406R-44G-PoE+/4SFP (No PSU) v2 z12 Switch (J9824A):**

- 44 RJ-45 autosensing 10/100/1000 ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T); Media Type: Auto-MDIX; Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only
- 4 open mini-GBIC (SFP) slots
- 4 open module slots

- Supports a maximum of 144 autosensing 10/100/1000 ports or 144 SFP ports or 48 SFP+ ports or 48 HPE Smart Rate Multi-Gigabit or 12 40GbE ports, or a combination

**5412R-92G-PoE+/4SFP (No PSU) v2 z12 Switch (J9826A):**

- 92 RJ-45 autosensing 10/100/1000 PoE+ ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T, IEEE 802.3at PoE+); Media Type: Auto-MDIX; Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only
- 4 open mini-GBIC (SFP) slots
- 8 open module slots
- Supports a maximum of 288 autosensing 10/100/1000 ports or 288 SFP ports or 96 SFP+ ports or 96 HPE Smart Rate Multi-Gigabit or 24 40GbE ports, or a combination

**5406R-8XGT/8SFP+ (No PSU) v2 z12 Switch (J9868A):**

- 8 RJ-45 10GbE ports (IEEE 802.3an-2006 Type 10GBASE-T)
- 8 open 10GbE SFP+ transceiver slots
- 4 open module slots
- Supports a maximum of 144 autosensing 10/100/1000 ports or 144 SFP ports or 48 SFP+ ports or 48 HPE Smart Rate Multi-Gigabit or 12 40GbE ports, or a combination

**5412R 92GT PoE+ and 4-port SFP+ (No PSU) v3 z12 Switch (JL001A):**

- 92 RJ-45 autosensing 10/100/1000 PoE+ ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T, IEEE 802.3at PoE+); Media Type: Auto-MDIX; Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only
- 4 open 10GbE SFP+ transceiver slots
- 8 open module slots
- Supports a maximum of 288 autosensing 10/100/1000 ports or 288 SFP ports or 96 SFP+ ports or 96 HPE Smart Rate Multi-Gigabit or 24 40GbE ports, or a combination

**5406R 8-port 1/2.5/5/10GBASE-T PoE+ and 8-port SFP+ (No PSU) v3 z12 Switch (JL002A):**

- 8 RJ-45 HPE Smart Rate Multi-Gigabit ports
- 8 open 10GbE SFP+ transceiver slots
- 4 open module slots
- Supports a maximum of 144 autosensing 10/100/1000 ports or 144 SFP ports or 48 SFP+ ports or 48 HPE Smart Rate Multi-Gigabit or 12 40GbE ports, or a combination

**5406R 44GT PoE+ and 4-port SFP+ (No PSU) v3 z12 Switch (JL003A):**

- 44 RJ-45 autosensing 10/100/1000 PoE+ ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T, IEEE 802.3at

PoE+); Media Type: Auto-MDIX; Duplex: 10BASE-T/100BASE-TX: half or full;  
1000BASE-T: full only

- 4 open 10GbE SFP+ transceiver slots
- 4 open module slots
- Supports a maximum of 144 autosensing 10/100/1000 ports or 144 SFP ports or 48 SFP+ ports or 48 HPE Smart Rate Multi-Gigabit or 12 40GbE ports, or a combination

**5406R 16-port SFP+ (No PSU) v3 z12 Switch (JL095A):**

- 16 open 10GbE SFP+ transceiver slots
- 4 open module slots
- Supports a maximum of 144 autosensing 10/100/1000 ports or 144 SFP ports or 48 SFP+ ports or 48 HPE Smart Rate Multi-Gigabit or 12 40GbE ports, or a combination

## INCLUDED ACCESSORIES

**5406R z12 Switch (J9821A):**

- 1 Aruba 5400R z12 Management Module (J9827A)
- 1 Aruba 5406R z12 Switch Fan Tray (J9831A)
- 1 fan tray slot

**5412R z12 Switch (J9822A):**

- 1 Aruba 5400R z12 Management Module (J9827A)
- 1 Aruba 5412R z12 Switch Fan Tray (J9832A)
- 1 fan tray slot

**5406R-44G-PoE+/2SFP+ (No PSU) v2 z12 Switch (J9823A):**

- 1 Aruba 5400R z12 Management Module (J9827A)
- 1 Aruba 5406R z12 Switch Fan Tray (J9831A)
- 1 Aruba 24-port Gig-T PoE+ v2 z1 Module (J9534A)
- 1 Aruba 20-port Gig-T PoE+ / 2-port 10GbE SFP+ v2 z1 Module (J9536A)
- 1 fan tray slot

**5412R-92G-PoE+/2SFP+ (No PSU) v2 z12 Switch (J9825A):**

- 1 Aruba 5400R z12 Management Module (J9827A)
- 1 Aruba 5412R z12 Switch Fan Tray (J9832A)
- 3 Aruba 24-port Gig-T PoE+ v2 z1 Module (J9534A)
- 1 Aruba 20-port Gig-T PoE+ / 2-port 10GbE SFP+ v2 z1 Module (J9536A)
- 1 fan tray slot

**5406R-44G-PoE+/4SFP (No PSU) v2 z12 Switch (J9824A):**

- 1 Aruba 5400R z12 Management Module (J9827A)
- 1 Aruba 5406R z12 Switch Fan Tray (J9831A)
- 1 Aruba 24-port Gig-T PoE+ v2 z1 Module (J9534A)

- 1 Aruba 20-port Gig-T PoE+ / 4-port SFP v2 zl Module (J9535A)
- 1 fan tray slot

**5412R-92G-PoE+/4SFP (No PSU) v2 zl2 Switch (J9826A):**

- 1 Aruba 5400R zl2 Management Module (J9827A)
- 1 Aruba 5412R zl2 Switch Fan Tray (J9832A)
- 3 Aruba 24-port Gig-T PoE+ v2 zl Module (J9534A)
- 1 Aruba 20-port Gig-T PoE+ / 4-port SFP v2 zl Module (J9535A)
- 1 fan tray slot

**5406R-8XGT/8SFP+ (No PSU) v2 zl2 Switch (J9868A):**

- 1 Aruba 5400R zl2 Management Module (J9827A)
- 1 Aruba 5406R zl2 Switch Fan Tray (J9831A)
- 1 Aruba 8-port 10GbE SFP+ v2 zl Module (J9538A)
- 1 Aruba 8-port 10GBASE-T v2 zl Module (J9546A)
- 1 fan tray slot

**5412R 92GT PoE+ and 4-port SFP+ (No PSU) v3 zl2 Switch (JL001A):**

- 1 Aruba 5400R zl2 Management Module (J9827A)
- 1 Aruba 5412R zl2 Switch Fan Tray (J9832A)
- 3 Aruba 24-port 10/100/1000BASE-T PoE+ MACsec v3 zl2 Module (J9986A)
- 1 Aruba 20-port 10/100/1000BASE-T PoE+ / 4-port
- 1G/10GbE SFP+ MACsec v3 zl2 Module (J9990A)
- 1 fan tray slot

**5406R 8-port 1/2.5/5/10GBASE-T PoE+ and 8-port SFP+ (No PSU) v3 zl2 Switch (JL002A):**

- 1 Aruba 5400R zl2 Management Module (J9827A)
- 1 Aruba 5406R zl2 Switch Fan Tray (J9831A)
- 1 Aruba 8-port 1G/10GbE SFP+ MACsec v3 zl2 Module (J9993A)
- 1 Aruba 8-port 1/2.5/5/10GBASE-T PoE+ MACsec v3 zl2 Module (J9995A)
- 1 fan tray slot

**5406R 44GT PoE+ and 4-port SFP+ (No PSU) v3 zl2 Switch (JL003A):**

- 1 Aruba 5400R zl2 Management Module (J9827A)
- 1 Aruba 5400R zl2 Management Module (J9827A)
- 1 Aruba 5406R zl2 Switch Fan Tray (J9831A)
- 1 Aruba 24-port 10/100/1000BASE-T PoE+ MACsec v3 zl2 Module (J9986A)
- 1 Aruba 20-port 10/100/1000BASE-T PoE+ / 4-port 1G/10GbE SFP+ MACsec v3 zl2 Module (J9990A)
- 1 fan tray slot

**5406R 16-port SFP+ (No PSU) v3 zl2 Switch (JL095A):**

- 1 Aruba 5400R zl2 Management Module (J9827A)
- 1 Aruba 5406R zl2 Switch Fan Tray (J9831A)
- 2 Aruba 8-port 1G/10GbE SFP+ MACsec v3 zl2 Module (J9993A)
- 1 fan tray slot

## POWER SUPPLIES

### 5406R Switches:

- 2 power supply slots
- 1 minimum power supply required (ordered separately)

### 5412R Switches:

- 4 power supply slots
- 2 minimum power supply required (ordered separately)

## MEMORY AND PROCESSOR

Dual ARM Coretex A9 @ 1 GHz; Packet buffer size: 13.5 MB Internal

ARM11 @ 450 MHz; Packet buffer size: 18 Mb internal

Dual ARM Coretex A9 @ 1 GHz; Packet buffer size: 13.5 MB Internal

ARM11 @ 550 MHz; Packet buffer size: 18 Mb internal

Dual ARM Coretex A9 @ 1 GHz; Packet buffer size: 13.5 MB Internal

Freescale P2020 dual core @ 1.2 GHz, 16 MB flash, 1 GB SD Card, 4 GB DDR3 SODIMM

## PERFORMANCE

1000 Mb Latency: < 2.8  $\mu$ s (FIFO 64-byte packets)

10 Gbps Latency: < 1.8  $\mu$ s (FIFO 64-byte packets)

40 Gbps Latency: < 1.5  $\mu$ s (FIFO 64-byte packets)

Routing table size: 10000 entries (IPv4), 5000 entries (IPv6)

MAC address table size: 64000 entries

### Throughput:

- 5406R Switches: up to 571.4 Mpps
- 5412R Switches: up to 1142.8 Mpps

### Routing/Switching capacity:

- 5406R Switches: 960 Gbps
- 5412R Switches: 1920 Gbps

### Switch fabric speed:

- 5406R Switches: 1015 Gbps
- 5412R Switches: 2030 Gbps

#### **IPv6 Ready Certified:**

- 5406R z12 Switch (J9821A)
- 5412R z12 Switch (J9822A)
- 5406R-44G-PoE+/2SFP+ (No PSU) v2 z12 Switch (J9823A)
- 5412R-92G-PoE+/2SFP+ (No PSU) v2 z12 Switch (J9825A)
- 5406R-44G-PoE+/4SFP (No PSU) v2 z12 Switch (J9824A)
- 5412R-92G-PoE+/4SFP (No PSU) v2 z12 Switch (J9826A)
- 5406R-8XGT/8SFP+ (No PSU) v2 z12 Switch (J9868A)

## **DIMENSIONS**

#### **Physical Dimensions:**

- 5406R Switches:  
(H) 17.53 cm x (W) 44.45 cm x (D) 45.09 cm (6.9" x 17.5" x 17.75") (4U height)
- 5412R Switches:  
(H) 30.73 cm x (W) 44.45 cm x (D) 45.09 cm (12.1" x 17.5" x 17.75") (7U height)

#### **Weight:**

- 5406R z12 Switch (J9821A): 11.11 kg (24.5 lb)
- 5412R z12 Switch (J9822A): 17.28 kg (38.1 lb)
- 5406R-44G-PoE+/2SFP+ (No PSU) v2 z12 Switch (J9823A): 12.75 kg (28.11 lb)
- 5412R-92G-PoE+/2SFP+ (No PSU) v2 z12 Switch (J9825A): 20.5 kg (45.19 lb)
- 5406R-44G-PoE+/4SFP (No PSU) v2 z12 Switch (J9824A): 11.88 kg (26.19 lb)
- 5412R-92G-PoE+/4SFP (No PSU) v2 z12 Switch (J9826A): 20.59 kg (45.4 lb)
- 5406R-8XGT/8SFP+ (No PSU) v2 z12 Switch (J9868A): 12.75 kg (28.11 lb)
- 5412R 92GT PoE+ and 4-port SFP+ (No PSU) v3 z12 Switch (JL001A): 20.5 kg (45.19 lb)
- 5406R 8-port 1/2.5/5/10GBASE-T PoE+ and 8-port SFP+ (No PSU) v3 z12 Switch (JL002A): 12.75 kg (28.11 lb)
- 5406R 44GT PoE+ and 4-port SFP+ (No PSU) v3 z12 Switch (JL003A): 12.75 kg (28.11 lb)
- 5406R 16-port SFP+ (No PSU) v3 z12 Switch (JL095A): 12.75 kg (28.11 lb)

## MOUNTING AND ENCLOSURE

Mounts in an EIA standard 19-inch telco rack or equipment cabinet (hardware included); Horizontal surface mounting only

## ENVIRONMENTAL

Operating temperature range: 0°C to 45°C (32°F to 113°F); 0°C to 40°C with

J8177C transceiver installed, 0°C to 35°C with FIPS Opacity Shield installed

Operating relative humidity: 15% to 95% @ 45°C (113°F), noncondensing

Storage temperature range: -40°C to 70°C (-40°F to 158°F)

Storage humidity: 15% to 90% @ 65°C (149°F), non-condensing

Operating altitude: 10,000 feet

### Acoustic:

- 5406R Switches:  
Power: 44 dB, Pressure: 31.7 dB ISO 7779, ISO 9296
- 5412R Switches:  
Power: 49 dB, Pressure: 35.7 dB ISO 7779, ISO 9296

## ELECTRICAL CHARACTERISTICS

Frequency: 50/60 Hz

80plus.org Certification: Gold

### Description:

Does not come with power supply. Two (5406R Switches) or four (5412R Switches) open power supply slots are available; three different power supplies are available. See power supply products for additional specifications. 15% to 95% @ 45°C (113°F), noncondensing

Voltage: 110 - 127 / 200 - 240 VAC, rated (depending on power supply chosen)

### Maximum heat dissipation:

- 5406R Switches:  
2450 BTU/hr (2584.75 kJ/hr), (max. non-PoE);  
3700 BTU/hr (3903 kJ/hr) (max. using PoE)
- 5412R Switches:  
4900 BTU/hr (5169.5 kJ/hr), (max. non-PoE);  
7400 BTU/hr (7807 kJ/hr) (max. using PoE)

### Idle power:

- 5406R Switches: 215 W
- 5412R Switches: 312 W

## Notes:

Idle power is the actual power consumption of the device with no ports connected.

Heat dissipation does not include heat dissipated by the PoE-powered devices themselves.

For 5412R Switches only: When more than four power cords are installed in a 5412R z12 switch chassis, additional installation requirements are needed. Refer to the Aruba 5400R z12 Switches Quick Setup Guide and Safety/Regulatory Information manual for details.

## SAFETY CERTIFICATIONS

CSA 22.2 No. 60950; UL 60950; IEC 60950; EN 60950

## EMISSIONS

FCC part 15 Class A; EN 55022/CISPR 22 Class A

## IMMUNITY

EN: EN 55024, CISPR 24

ESD: IEC 61000-4-2; 4 kV CD, 8 kV AD; HP ENV. 765.002

Radiated: IEC 61000-4-3; 3 V/m

EFT/Burst: IEC 61000-4-4; 1.0 kV (power line), 0.5 kV (signal line)

Surge: IEC 61000-4-5; 1 kV/2 kV AC, 1kV signal, 0.5 kV DC

Conducted: IEC 61000-4-6; 3 Vrms

Power frequency magnetic field: IEC 61000-4-8; 1 A/m, 50 or 60 Hz

Voltage dips and interruptions:

IEC 61000-4-11; >95% reduction, 0.5 period; 30% reduction, 25 periods

Harmonics: EN 61000-3-2, IEC 61000-3-2

Flicker: EN 61000-3-3, IEC 61000-3-3

## MANAGEMENT AND MONITORING

Command line interface



Graphical user interface (Web browser)  
AirWave network platform  
IMC - Intelligent Management Center  
Configuration menu  
Out-of-band management (RJ-45 Ethernet)  
SNMP manager  
Out-of-band management (serial RS-232c or micro usb)

## NOTES

Supported 1G SFP transceivers are revision "B" or later (product number ends with the letter "B" or later; For example, J9142B, J8177C).

## WARRANTY AND SUPPORT

### Limited lifetime warranty (all models)

See [www.hpe.com/networking/warrantysummary](http://www.hpe.com/networking/warrantysummary) for warranty and support information included with your product purchase.

### Software releases (all models)

to find software for your product, refer to [www.hpe.com/networking/support](http://www.hpe.com/networking/support); for details on the software releases available with your product purchase, refer to [www.hpe.com/networking/warrantysummary](http://www.hpe.com/networking/warrantysummary).