

# Aruba SFP Optical Modules

## Installation Guide

### Introduction

Aruba SFP modules, small form-factor pluggable modules, also known as mini-GBICs, are hot-swappable Gigabit Ethernet optical transceivers.

Aruba SFP Modules

- SFP-TX: conforms to 1000Base-T copper wiring Gigabit Ethernet standard
- SFP-SX: conforms to 1000Base-SX fiber optic Gigabit Ethernet standard
- SFP-LX: conforms to 1000Base-LX fiber optic Gigabit Ethernet standard



Aruba tests and supports Aruba approved optics within their controller systems. Non-approved, third party optics are not tested or supported; therefore, Aruba does not guarantee proper functionality of non-approved, third party optics when used in an Aruba system. For a complete list of Aruba approved optics, contact your Aruba sales representative. [Specifications](#) are listed on [page 2](#) of this guide.

### Minimum Software Requirements and Platform Support

[Table 1](#) lists minimum software requirements and platform support for each Aruba SFP module.

**Table 1** *Aruba SFP Compatibility Chart*

| Aruba SFP Module | Minimum ArubaOS Software Requirement | Aruba Platform Support                              |
|------------------|--------------------------------------|---|
| SFP-TX           | ArubaOS 3.2.0                        | Aruba Multi-Service Mobility Module Mark I          |
| SFP-SX           | ArubaOS 3.2.0                        | Aruba Multi-Service Mobility Module Mark I          |
|                  | ArubaOS 3.2.0                        | Aruba 3000 Series Multi-Service Mobility Controller |
| SFP-LX           | ArubaOS 3.2.0                        | Aruba Multi-Service Mobility Module Mark I          |
|                  | ArubaOS 3.2.0                        | Aruba 3000 Series Multi-Service Mobility Controller |

### Aruba Approved SFP Modules

**Table 2** *Aruba Approved SFP Modules*

| Aruba SFP Module | Aruba Approved Third Party Manufacturer | Third Party Manufacturer Part Number |
|------------------|---|--------------------------------------|
| SFP-TX           | Delta Electronics, Inc.                 | LCP-1250RJ3SR                        |
|                  | Methode                                 | DS-7041-R                            |

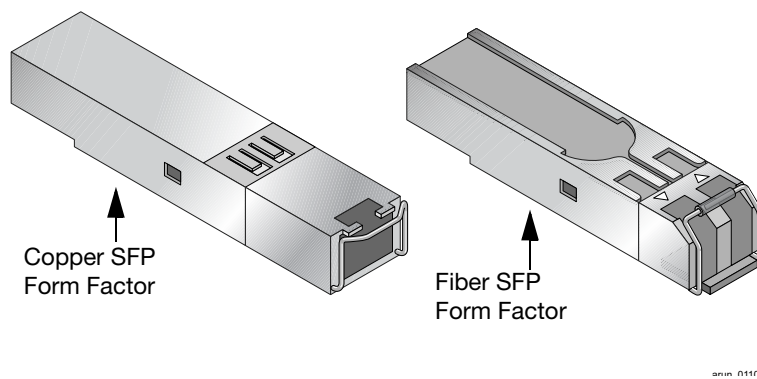
**Table 2** Aruba Approved SFP Modules

| Aruba SFP Module | Aruba Approved Third Party Manufacturer | Third Party Manufacturer Part Number |
|------------------|---|--------------------------------------|
| SFP-SX           | Delta Electronics, Inc.                 | LCP-1250A4FSR                        |
|                  | Fiberxon, Inc.                          | FTM-8012C-SLG                        |
| SFP-LX           | Fiberxon, Inc.                          | FTM-3012C-SLG                        |

## Specifications

Figure 1 shows the physical form factor of Aruba’s copper and fiber based SFP modules.

**Figure 1** SFP Module Form Factor



### SFP-TX

Table 3 describes the specifications for the SFP-TX module.

**Table 3** SFP-TX Specifications

| Parameter            | Specification                  |
|----------------------|--------------------------------|
| Connector Type       | RJ-45                          |
| Cable Type and Range | Cat 5, 5E, 6/Range up to 100 m |

### SFP-SX

Table 4 describes the specifications for the SFP-SX module.

**Table 4** SFP-SX Specifications

| Parameter            | Specification  |
|----------------------|--|
| Connector Type       | LC fiber optic   |
| Cable Type and Range | 62.5 $\mu$ m multi-mode fiber/Range up to 260 m (850 feet) |
|                      | 50 $\mu$ m multi-mode fiber/Range up to 550 m (1800 feet)  |
| Input Wavelength     | 770 to 860 nm  |
| Center Wavelength    | 830 to 860 nm  |
| Input Optical Power  | -17 to -3 dBm  |

**Table 4** SFP-SX Specifications

| Parameter            | Specification  |
|----------------------|----------------|
| Output Optical Power | -9.5 to -4 dBm |
| RMS Spectral Width   | 850 pm         |

## SFP-LX

Table 5 describes the specifications for the SFP-LX module.

**Table 5** SFP-LX Specifications

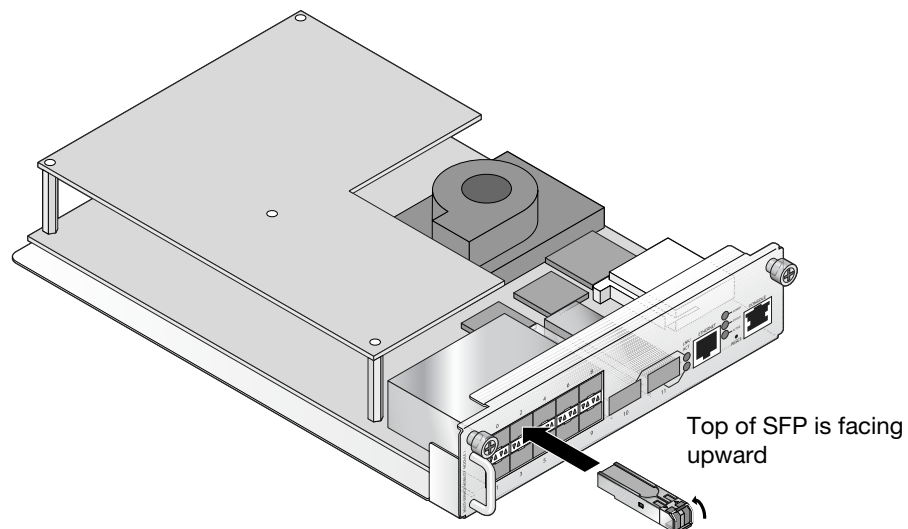
| Parameter            | Specification   |
|----------------------|---|
| Connector Type       | LC fiber optic  |
| Cable Type and Range | 9 $\mu$ m single-mode fiber/Range of 10 km (6.21 miles) |
| Input Wavelength     | 1260 nm to 1570 nm                                      |
| Center Wavelength    | 1310 nm   |
| Input Optical Power  | -20 to -3 dBm   |
| Output Optical Power | -9.5 to -3 dBm  |
| RMS Spectral Width   | 4 nm  |

## SFP Installation

To install an SFP module into the top row of an Aruba Multi-Service Mobility Module Mark I or an Aruba 3000 Series Multi-Service Mobility Controller:

1. Use standard ESD precautions when installing an SFP module.
2. Slide the SFP module, top side facing upward, into a 1000Base-X port until a connection is made and an audible click is heard.
3. Lock the SFP in place by moving the latch on the module to an upright position, facing the top of the module.

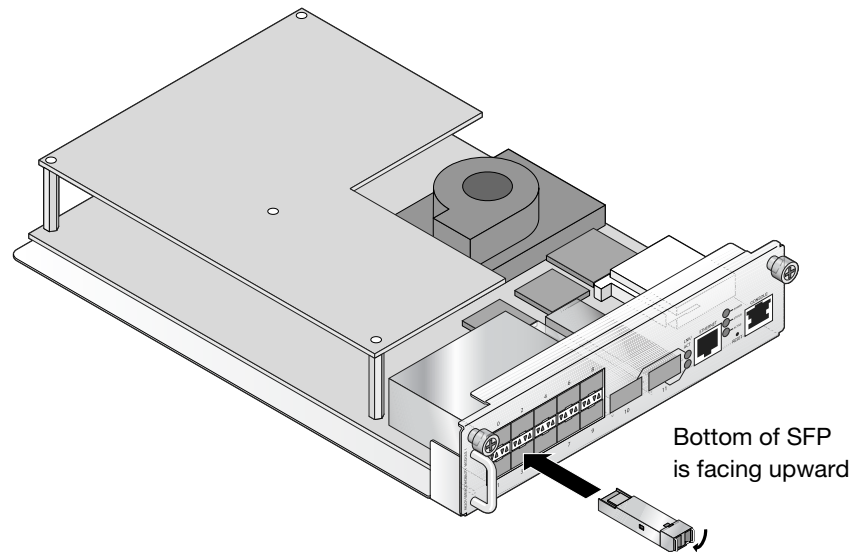
**Figure 2** Installing an SFP into the Top Row of an Aruba Multi-Service Mobility Module Mark I



To install an SFP module into the bottom row of an Aruba Multi-Service Mobility Module Mark I:

1. Use standard ESD precautions when installing an SFP module.
2. Slide the SFP module, bottom side facing upward, into a 1000Base-X port until a connection is made and an audible click is heard.
3. Lock the SFP in place by moving the latch on the module to a downward position, facing the top of the module.

**Figure 3** *Installing an SFP into the Bottom Row of an Aruba Multi-Service Mobility Module Mark I*



## LC Fiber Optic Cable Connection

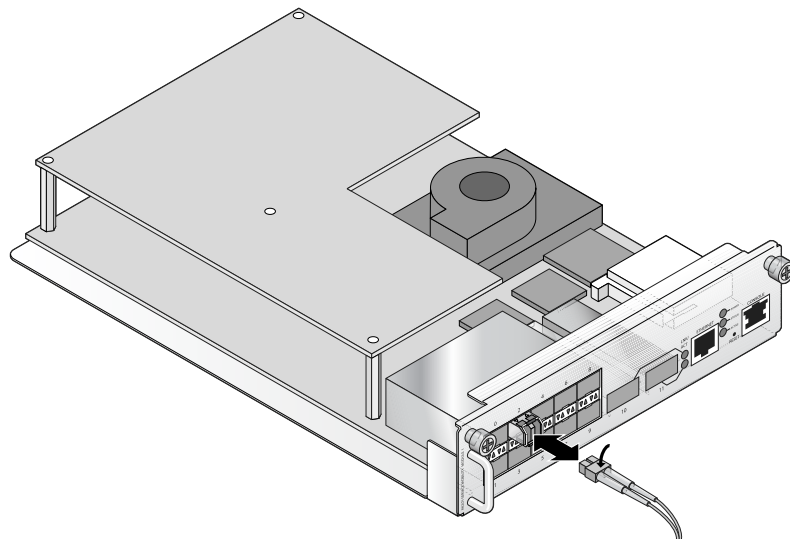
To connect an LC fiber optic cable into an SFP-SX or SFP-LX module:

1. Insert the fiber optic cable into the SFP module. Ensure that the latch on the cable faces the top of the SFP module.
2. Slide the cable into place until a connection is made and an audible click is heard.

To disconnect an LC fiber optic cable from an SFP-SX or SFP-LX module:

3. Depress to release the latch on the cable and simultaneously pull the cable out of the port.

**Figure 4** *Connecting and Disconnecting an LC Fiber Optic Cable*

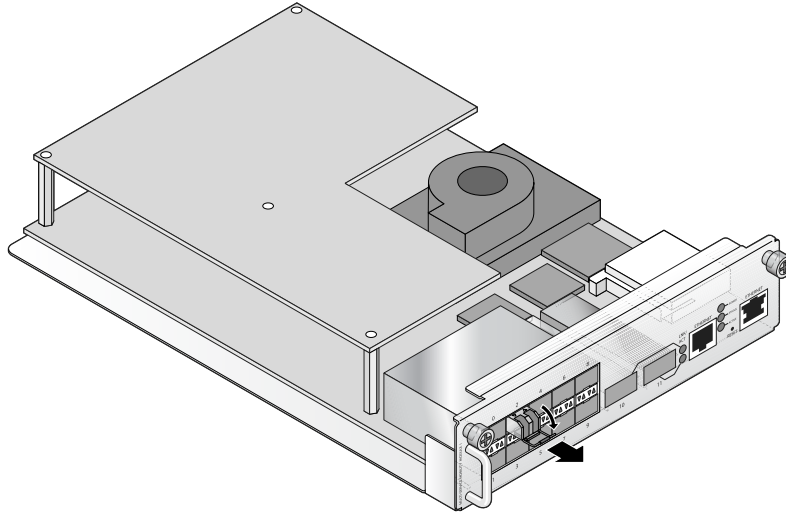


## SFP Removal

To remove an SFP module:

1. Use standard ESD precautions when removing an SFP module.
2. Open and release the latch on the SFP module.
3. Pull and remove the module from the port.

**Figure 5** *Removing an SFP Module*



## Safety and Regulatory Compliance

Aruba provides a multi-language document containing country specific restrictions and additional safety and regulatory information for all Aruba hardware products. This document can be viewed or downloaded from the following location: [www.arubanetworks.com/pdf/0510272-01.pdf](http://www.arubanetworks.com/pdf/0510272-01.pdf).



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Use of controls or adjustments of performance or procedures other than those specified in this manual may result in hazardous radiation exposure.

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This product complies with 21 CFR Chapter 1, Subchapter J, Part 1040.10, and IEC 60825-1: 1993, A1: 1997, A2: 2001, IEC 60825-2: 2000.

For continued compliance with the above laser safety standards, only approved Class 1 modules from our approved vendors should be installed in Aruba products.

## Proper Disposal of Aruba Equipment

For the most current information on Global Environmental Compliance and Aruba products please see our website at [www.arubanetworks.com](http://www.arubanetworks.com).

### Waste of Electrical and Electronic Equipment



Aruba products at end of life are subject to separate collection and treatment in the EU Member States, Norway, and Switzerland and therefore are marked with the symbol shown at the left (crossed-out wheeled bin). The treatment applied at end of life of these products in these countries shall comply with the applicable national laws of countries implementing Directive 2002/96EC on Waste of Electrical and Electronic Equipment (WEEE).

### European Union RoHS



Aruba products also comply with the EU Restriction of Hazardous Substances Directive 2002/95/EC (RoHS). EU RoHS restricts the use of specific hazardous materials in the manufacture of electrical and electronic equipment. Specifically, restricted materials under the RoHS Directive are Lead (including Solder used in printed circuit assemblies), Cadmium, Mercury, Hexavalent Chromium, and Bromine. Some Aruba products are subject to the exemptions listed in RoHS Directive Annex 7 (Lead in solder used in printed circuit assemblies). Products and packaging will be marked with the “RoHS” label shown at the left indicating conformance to this Directive.

### China RoHS



Aruba products also comply with China environmental declaration requirements and are labeled with the “EFUP e” label shown at the left.

## Contacting Aruba

| Web Site Support   |   |
|--|---|
| Main Site  | <a href="http://www.arubanetworks.com">http://www.arubanetworks.com</a>                                     |
| Support Site   | <a href="http://www.arubanetworks.com/support">http://www.arubanetworks.com/support</a>                     |
| Software Licensing Site  | <a href="https://licensing.arubanetworks.com">https://licensing.arubanetworks.com</a>                       |
| Wireless Security Incident Response Team (WSIRT)                                       | <a href="http://www.arubanetworks.com/support/wsirt.php">http://www.arubanetworks.com/support/wsirt.php</a> |
| Support Email  | <a href="mailto:support@arubanetworks.com">support@arubanetworks.com</a>                                    |
| WSIRT Email<br>Please email details of any security problem found in an Aruba product. | <a href="mailto:wsirt@arubanetworks.com">wsirt@arubanetworks.com</a>  |

| Telephone Support     |                              |
|-----------------------|------------------------------|
| Aruba Headquarters    | +1 (408) 227-4500            |
| FAX                   | +1 (408) 227-4550            |
| Customer Support:     |                              |
| • United States       | 800-WI-FI-LAN (800-943-4526) |
| • France              | +33 (0) 1 70 72 55 59        |
| • United Kingdom      | +44 (0) 20 7127 5989         |
| • Germany             | +49 (0) 69 38 09 77 22 8     |
| • All Other Countries | +1 (408) 754-1200            |