ExtremeWireless™ WiNG™ RFS4010 Installation Guide

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Preface

This section discusses the conventions used in this guide, ways to provide feedback, additional help, and other Extreme Networks publications.

Text Conventions

The following tables list text conventions that are used throughout this guide.

Table 1: Notice Icons

Icon	Notice Type	Alerts you to...
	General Notice	Helpful tips and notices for using the product.
	Note	Important features or instructions.
	Caution	Risk of personal injury, system damage, or loss of data.
	Warning	Risk of severe personal injury.
New!	New Content	Displayed next to new content. This is searchable text within the PDF.

Table 2: Text Conventions

Convention	Description
`Screen displays`	This typeface indicates command syntax, or represents information as it appears on the screen.
The words **enter** and **type**	When you see the word "enter" in this guide, you must type something, and then press the Return or Enter key. Do not press the Return or Enter key when an instruction simply says "type."
[Key] names	Key names are written with brackets, such as **[Return]** or **[Esc]**. If you must press two or more keys simultaneously, the key names are linked with a plus sign (+). Example: Press **[Ctrl]**+**[Alt]**+**[Del]**
Words in italicized type	Italics emphasize a point or denote new terms at the place where they are defined in the text. Italics are also used when referring to publication titles.

Providing Feedback to Us

We are always striving to improve our documentation and help you work better, so we want to hear from you! We welcome all feedback but especially want to know about:

- Content errors or confusing or conflicting information.
- Ideas for improvements to our documentation so you can find the information you need faster.
- Broken links or usability issues.

If you would like to provide feedback to the Extreme Networks Information Development team about this document, please contact us using our short online feedback form. You can also email us directly at documentation@extremenetworks.com.

Getting Help

If you require assistance, contact Extreme Networks using one of the following methods:

- **GTAC (Global Technical Assistance Center) for Immediate Support**
  - **Phone:** 1-800-998-2408 (toll-free in U.S. and Canada) or +1 408-579-2826. For the support phone number in your country, visit: www.extremenetworks.com/support/contact
  - **Email:** support@extremenetworks.com. To expedite your message, enter the product name or model number in the subject line.
- **Extreme Portal** — Search the GTAC knowledge base, manage support cases and service contracts, download software, and obtain product licensing, training, and certifications.
- **The Hub** — A forum for Extreme Networks customers to connect with one another, answer questions, and share ideas and feedback. This community is monitored by Extreme Networks employees, but is not intended to replace specific guidance from GTAC.

Before contacting Extreme Networks for technical support, have the following information ready:

- Your Extreme Networks service contract number and/or serial numbers for all involved Extreme Networks products
- A description of the failure
- A description of any action(s) already taken to resolve the problem
- A description of your network environment (such as layout, cable type, other relevant environmental information)
- Network load at the time of trouble (if known)
- The device history (for example, if you have returned the device before, or if this is a recurring problem)
- Any related RMA (Return Material Authorization) numbers

Extreme Networks Documentation

To find Extreme Networks product guides, visit our documentation pages at:

Current Product Documentation	www.extremenetworks.com/documentation/
Archived Documentation (for earlier versions and legacy products)	www.extremenetworks.com/support/documentation-archives/
Release Notes	www.extremenetworks.com/support/release-notes

Open Source Declarations

Some software files have been licensed under certain open source licenses. More information is available at: www.extremenetworks.com/support/policies/software-licensing/.

1 Overview

The RFS4010 is a member of the RFS controller family. The RFS4010 provides centralized Wireless LAN (WLAN) configuration and management by coalescing a network "intelligence" previously spread across physically distributed access points. The RFS4010 simplifies deployment of a Wired/Wireless 802.11 a/b/g/n network, for a SME/SMB. With the integrated Layer 2/Layer 3 Networking Services such as integrated Layer 2 Switching with PoE+ ports, Onboard DHCP Server, Security Services like Wired/Wireless Firewall, Wireless IDS/IPS, Onboard AAA Server and IPSEC VPN Gateway, and QoS mechanisms to support Voice & Video, the RFS4000 transforms the enterprise by delivering a SMART Branch. The RFS4010 is the WLAN's point of management reducing wireless networking complexity by moving management out of the ceiling and into the wiring closet. The RFS4010 can adopt upto 6 Adaptive APs or Thin Access Points and does not require any additional licenses at this time, for AP adoption.

This document is written for the network device installer.

2 LED Codes

The RFS4010 has four vertically-stacked LEDs on its front panel. Each of the six Gigabit Ethernet Ports have two status LEDs. These LEDs display two colors (green & amber), and three lit states (solid, blinking, and off).

The LED Codes are divided into:
* System Status LEDs
* RJ-45 Gigabit Ethernet LEDs
* SFP Gigabit Ethernet LEDs

System Status LEDs
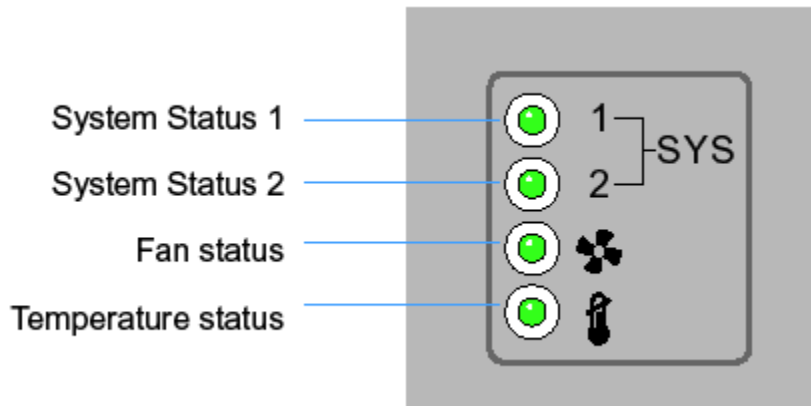
Table 3: Start Up/POST (Primary System or Redundant System)

System Status 1 LED	System Status 2 LED	Event
Off	Off	Power off
Green Blinking	Green Blinking	Power On Self Test (POST) running
Green Solid	Green Blinking	POST succeeded (Operating System Loading)
Green Solid	Off	POST succeeded (Normal Operation)

Table 3: Start Up/POST (Primary System or Redundant System) (continued)

System Status 1 LED	System Status 2 LED	Event
Amber Blinking	Off	POST Failure
Alternating Green Blinking & Amber Blinking	Alternating Green Blinking & Amber Blinking	System Boot Up Error

Note
During start up, the Temperature status LED will be lit Solid Amber. This is normal behavior and does not indicate an error. At the completion of start up the Temperature Status LED will change to Solid Green.

Table 4: Status (Primary System)

System Status 1 LED	System Status 2 LED	Event
Off	Off	Power off
Green Solid	Off	Redundancy Feature Enabled Primary System Normal Operation No Access Ports Adopted
Green Solid	Green Solid	Redundancy Feature Enabled Primary System Normal Operation Actively Adopting Access Ports
Green Solid	Amber Blinking	No Country Code configured on the RFS4010 or Access Port or Adaptive AP License and Country Code configured, but no APs adopted

Table 5: Status (Redundant System)

System Status 1 LED	System Status 2 LED	Event
Off	Off	Power off
Green Solid	Off	Redundant System Normal Operation
Green Blinking	Green Solid	Redundant System failed over and adopting ports
Green Blinking	Alternating Green Blinking & Amber Blinking	Redundant System not failed over.

Table 6: Fan LED

Fan LED	Event
Off	System Off / POST Start
Green Blinking	POST in Process
Green Solid	All System Fans Normal Operation

Table 6: Fan LED (continued)

Fan LED	Event
Amber Solid	Redundant Cooling Failure System Operational
Amber Blinking	System Cooling Failure *System will be held in reset until the issue is resolved*

Table 7: Temperature Status LED

Temperature LED	Event
Off	System Off
Green Solid	Ambient Inlet Temperature is within specified operating limit
Amber Solid	Ambient Inlet Temperature is near the maximum operating temperature During start up this LED will be lit Solid Amber. This is normal behavior and does not indicate an error.
Amber Blinking	Ambient Inlet Temperature is above the maximum specified operating temperature *System will be held in reset until the issue is resolved*

RJ-45 Gigabit Ethernet LEDs
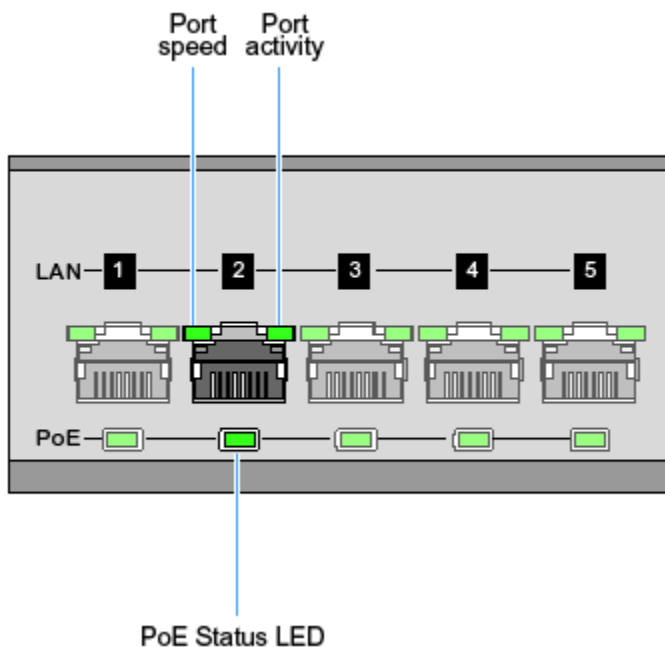
Table 8: RJ-45 Port Speed LED

Port Speed LED	Event
Off	10 Mbps
Green Solid	100 Mbps
Green Blinking	1000 Mbps
Amber Blinking	Port Fault

Table 9: RJ-45 Port Activity LED

Port Status LED	Event
Off	No Link or Administratively shut down
Green Solid	Link present
Green Blinking	Activity: Transmit and Receive
Amber Blinking	Link Fault

Table 10: PoE Status LED

PoE Status LED	Event
Off	PoE Disabled or Not in Use
Green Solid	PoE Enabled and Powering Port
Amber Solid	PoE Over-Limit
Amber Blinking	PoE Port Fault

SFP Gigabit Ethernet LEDs
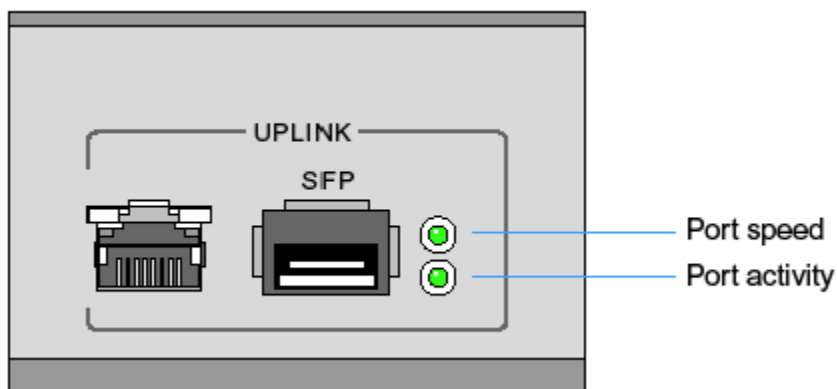
Table 11: SFP Port Speed LED

Port Speed LED	Event
Green Blinking	1000 Mbps
Amber Blinking	Module or Tx/Rx Fault Loss

Table 12: SFP Port Activity LED

Port Status LED	Event
Off	No Link or Administratively shut down
Green Solid	Link present / Operational
Amber Blinking	Module or Tx/Rx Fault Loss

3 Installation Process

Verifying the Box Contents
Warnings
Hardware Setup
Connecting USB Devices
Rack Mount Instructions
RFS4010 RF Switch Console Port Setup
Supplying Power to the RFS4010
Using the RFS4010 Reset Button
Verifying the Installation

All common precautions should be observed during deployment and installation. RFS4010 Controller must be installed such that no harmful interference results from device operation.

> **Note**
> An RFS4010 must be installed by trained professionals familiar regulatory limits defined by the regulatory bodies of the country where the devices are being deployed.

Follow these procedures to install RFS4010:

1　Verify the box contents.
2　Review the warnings.
3　Prepare your site for installation.

Verifying the Box Contents

Carefully remove all protective packing material from around the RFS4010 Contoller and save the container for later storage and shipping.

> **Note**
> Record the serial numbers on the shipping cartons and RFS4010 for warranty claims and reference during software download procedures.

1　Verify that the box contains the following items:

- RFS4010
- Console Cable
- Installation Guide (this document)
- Rubber Feet
- Power Supply Unit (Part Number: PWR-BGA48V120W0WW or 50-14000-244R)

2 Perform a visual inspection of the device for any signs of physical damage. Contact Extreme Networks if there are any signs of damage.When contacting Support, please provide the following information:

- Serial number of the unit
- Model number or product name
- Software type and version number

3 Part numbers:

Table 13: Part Numbers

| Description	Part Number
RFS4010 with Internal POE and Power Supply	RFS-4010-00010-WR
Rack Mount Kit	RFS-4010-MTKT1U-WR
Power Supply Unit	PWR-BGA48V120W0WW or 50-14000-244R

Warnings

- Read all installation instructions and site survey reports, and verify correct equipment installation before connecting the system to its power source.
- Remove jewelry and watches before installing this equipment.
- Install the equipment in a rack or on a desktop with adequate dimensions and weight allowances.
- Verify the unit is grounded before connecting it to the power source.
- Verify any device connected to this unit is properly wired and grounded.
- Connect all power cords to a properly wired and grounded electrical circuit.
- Verify the electrical circuits have appropriate overload protection.
- It is strongly recommended to use an Uninterruptible Power Supply (UPS) that supports the RFS4010 power rating. Not using a UPS can result in data loss or equipment damage due to a power surge or power failure.
- Verify the power connector and socket are accessible at all times during the operation of the equipment.
- Do not work with power circuits in dimly lit spaces.
- Do not install this equipment or work with its power circuits during thunderstorms or other weather conditions that could cause a power surge.
- Verify there is adequate ventilation around the device, and ambient temperatures meet equipment operation specifications.
- This product is designed for in building installation only and is not intended to be connected to exposed (outside plant) networks.

Hardware Setup
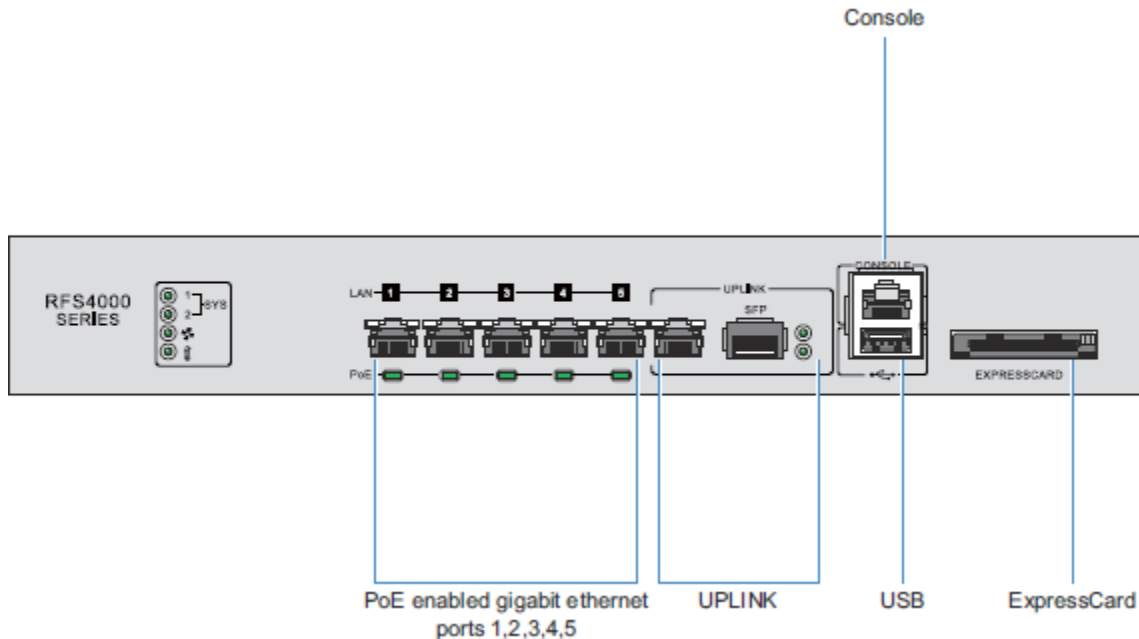
Cabling Information
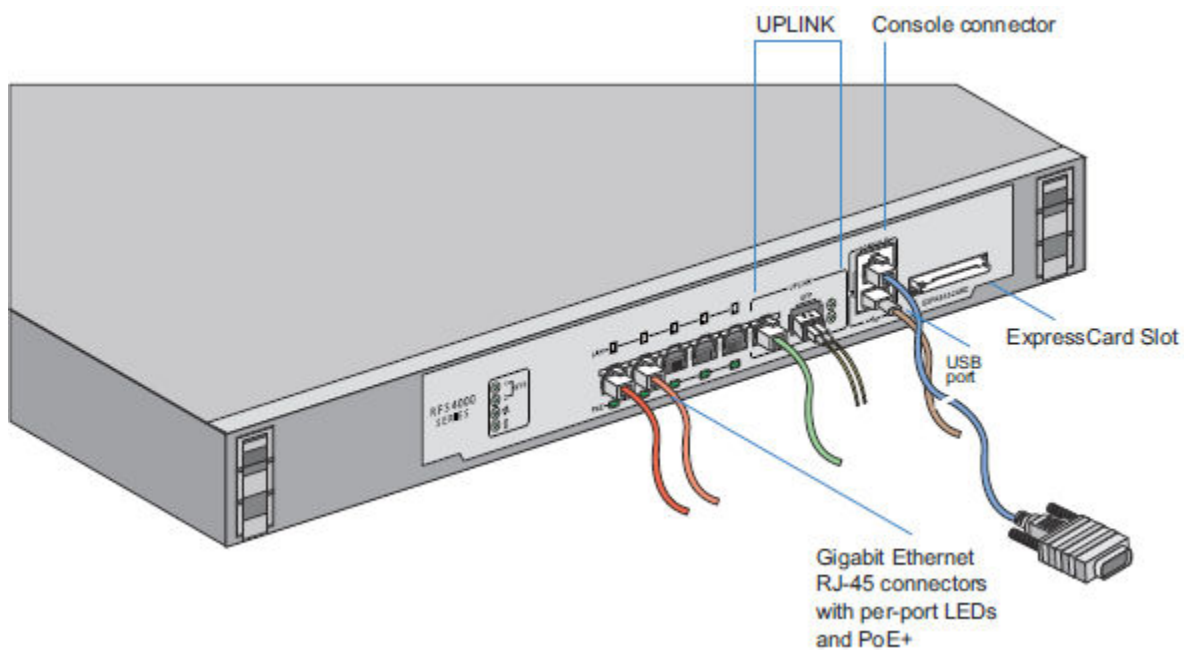
The RFS4010 has five RJ-45 Gigabit Ethernet ports, one Gigabit SFP (fiber) port, one USB port, one Console connector and one ExpressCard slot. The above diagram shows each of those ports and the cables or devices attached to them. The sections that follow describe detailed connection and cabling information for each port.

For software configuration, please see the WiNG Controller and Service Platform System Reference Guide, available at www.extremenetworks.com/documentation/.

Gigabit Ethernet on the RFS4010

The RFS4010 has five RJ-45 Gigabit Ethernet ports and one 1 combo Gigabit (RJ45 + SFP) uplink port. Using the RJ-45 ports requires connecting a Category-6 Ethernet cable to the port. To use the Gigabit SFP port, first install the SFP Module (Part Number: Fiber-3000-1S-WWR).

Installing Gigabit Ethernet SFPs

Follow this procedure to install gigabit Ethernet SFPs:

1   Open the bail on the transceiver.

Open bail to insert or remove SFP transceiver
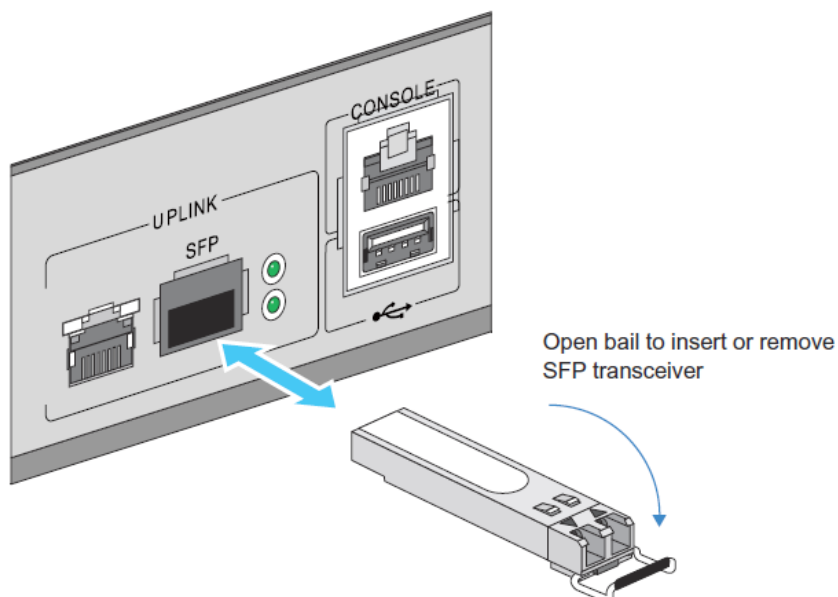
2   Insert the SFP transceiver into the corresponding port on the RFS4010.
3   Once the SFP transceivers are properly seated in their ports, close the bails to lock the transceivers

Close bail to lock SFP transceiver in place

in place.
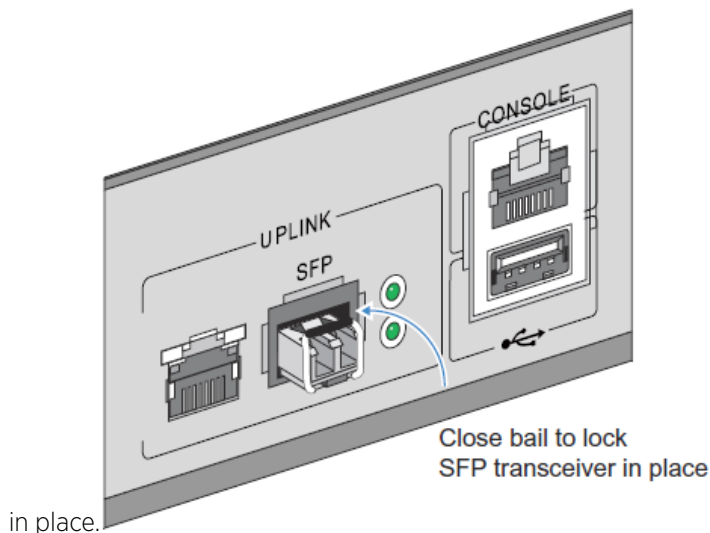
4   Insert the fiber optic cables into the installed transceivers.
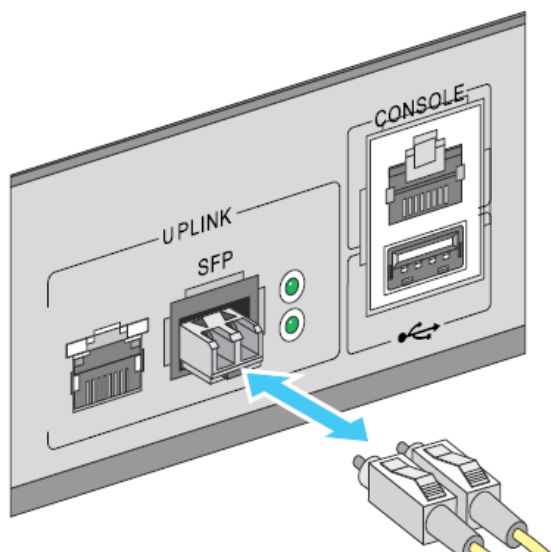
Connecting USB Devices

The RFS4010 contains one USB port for connecting USB flash storage devices to the RFS4010. The RFS4010 can use the USB flash storage device for file transfers and firmware updates. Follow the setup instructions below to connect the devices to the RFS4010 and then access those devices through the Web UI or Command Line Interface (CLI).
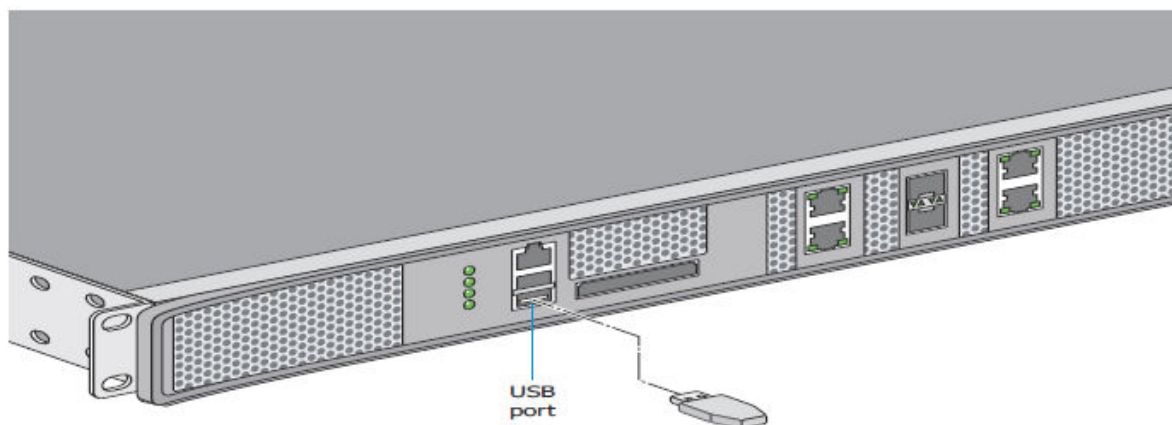
1   Connect the USB flash drive to the USB.
2   Wait a few seconds for the drive to be recognized by the RFS4010.

3 Follow the instructions in the WiNG Controller and Service Platform System Reference Guide or WiNG CLI Reference Guide for more information on accessing USB storage devices from the RFS4010 for file transfers or firmware updates.These guides are available at www.extremenetworks.com/documentation/.

Note

The RFS4010 supports USB flash devices formatted with FAT or VFAT (FAT32) filesystems only. If your flash storage device is formatted with another filesystem you will need to format your device with a FAT32 filesystem.

Rack Mount Instructions

To install the RFS4010 in a rack:

1 Attach the switch to the 1U rack mount kit using the guides provided.
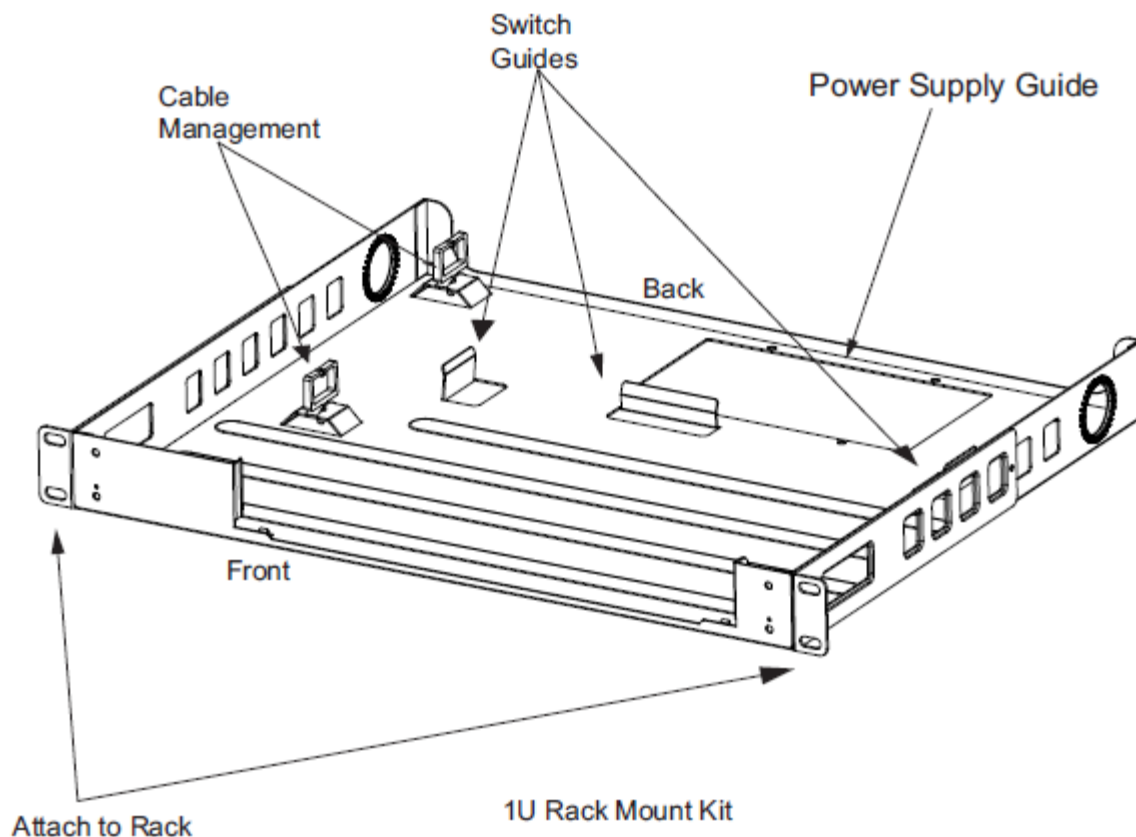
2 Place the power supply unit in the rack mount tray in the space provided. The kit includes an additional bracket (not shown) to support the PWR-BGA48V120W0WW.

3 Attach the mounting tray to the rack using screws appropriate for your rack's mounting holes.

RFS4010 RF Switch Console Port Setup

To add the RFS4010 to the network and prepare it for initial configuration:

1 Using the supplied console cable (pictured below), connect the RFS4010 serial port to an RS-232 (DB-9) serial port on a separate computer (the "configuration computer").
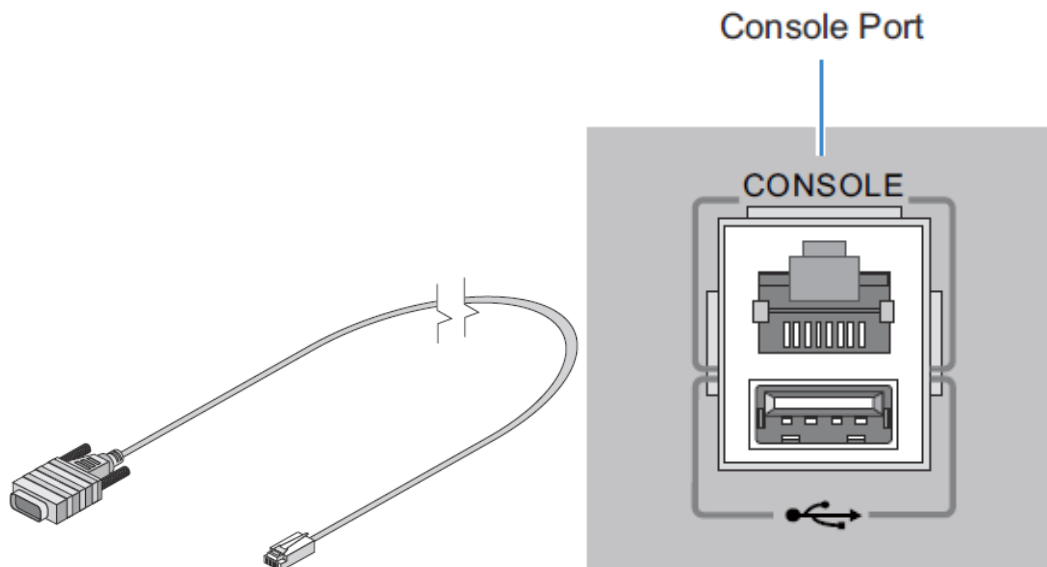
2 On the configuration computer, configure a terminal emulation application (such as HyperTerminal) as follows:

Terminal Type	VT-100
Port	COM port
Terminal Settings	19200bps transfer rate 8 data bits no parity 1 stop bit no flow control no hardware compression

Supplying Power to the RFS4010

To supply power to the RFS4010 controller:

1   Plug the power supply into the power inlet at the back of the RFS4010.
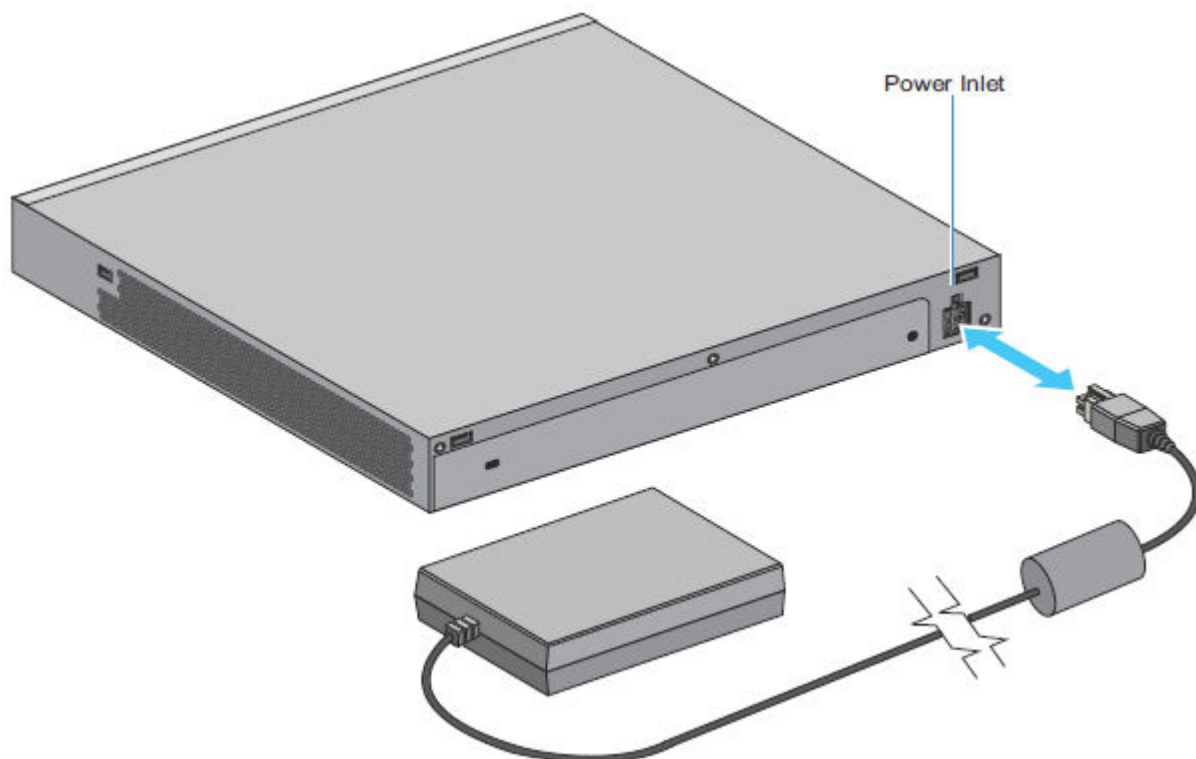
2   Plug the cord into a standard AC outlet with a voltage range of 100 to 240 VAC.

> **Warning**
>
> An improper shutdown can render the RFS4010 inoperable such that it could require service by support. Do not remove AC power without first following the shutdown procedure. An abrupt loss of power can corrupt the information stored on the device.

Using the RFS4010 Reset Button

The RFS4010 has a reset button on the rear of the switch near the power connector.

To reset the switch to factory defaults:

1   Connect a computer to the Console Port.

2 Reset the switch using the Web UI or the Command Line Interface.
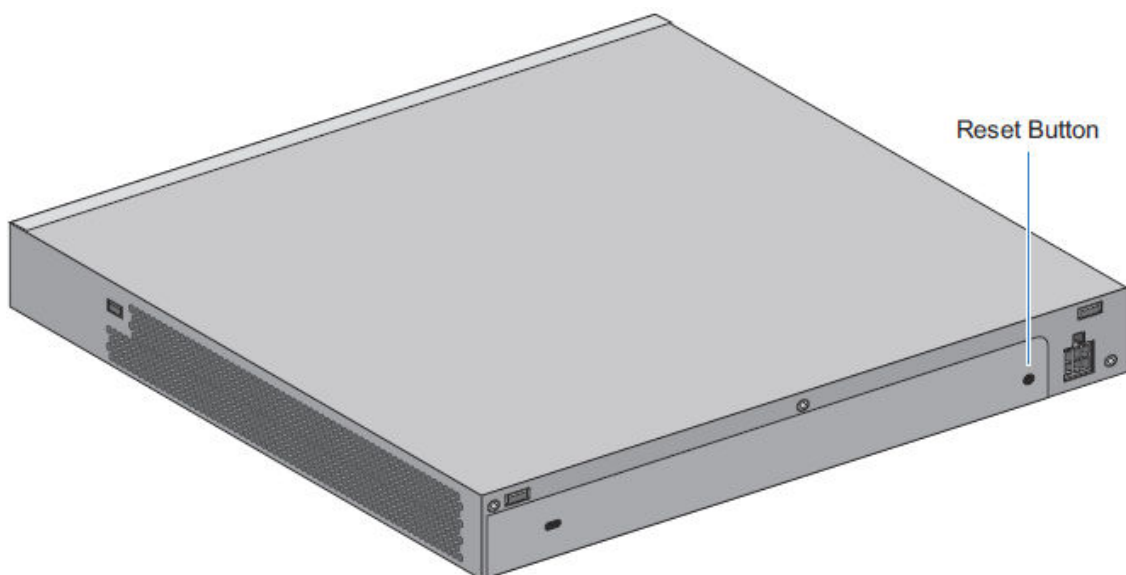
Reset Button

3 As soon as the RFS4010 resets, depress the reset button on the rear of the RFS4010 and continue to hold it through the boot up process until the following message is displayed in the console:`Startup config will be RESET to factory defaultloading linux image 2 ...................... Welcome to RFS4000`

> **Caution**
>
> Using the reset button will reset all configuration information and settings on the switch to factory defaults. All previously configured information and settings will be lost. The country code will need to be set when the RFS4010 is rebooted before any Access Points or Adaptive APs will be adopted.

Verifying the Installation

View the LEDs on the front panel of the RFS4010 to ensure the device is functioning properly. The normal LED pattern follows this path:

* During the Power On Self Test (POST), the System 1 and System 2 LEDs both blink green.
* If the POST test fails, the System 1 LED will blink amber. If the POST test succeeds, the System 1 LED will be lit solid green.
* As the software is initialized, the System 2 LED will blink green.
* After the software has finished initializing, the System 1 LED will be lit solid green and the bottom System 2 LED will be off. The RFS4010 is ready to be configured.

Other LED codes indicate the presence (or absence) of different standby states, or errors. A guide to the RFS4010 LED codes is provided in LED Codes.

4 Specifications

This appendix lists the specifications for the Extreme Networks™ WiNG™ Controller RFS4010.

Physical Specifications

Table 14: Physical Specifications for RFS4010

Width	304.8mm (12.0in)
Height	44.45mm (1.75 in) 1 RU
Depth	254mm (10.0 in)
Weight	2.15 Kg (4.75 lbs)
Operating Temperature	0°C - 40°C (32°F - 104°F)
Operating Humidity	5% - 85% RH, non-condensing
Operating Altitude	10,000 ft @ 28deg C < 15% Relative Humidity

Power Cord Specifications

A power supply is included, however a power cord is not supplied with the RFS4010. Use only a correctly rated power cord certified (as appropriate) for the country of operation.

Power Protection

- If possible, use a circuit dedicated to data processing equipment

  Commercial electrical contractors are familiar with wiring for data processing equipment and can help with the load balancing of these circuits.
- Install surge protection

  Be sure to use a surge protection device between the electricity source and the RFS4010
- Install an Uninterruptible Power Supply (UPS)

  A UPS provides continuous power during a power outage. Some UPS devices have integral surge protection. UPS equipment requires periodic maintenance to ensure reliability. A UPS of the proper capacity for the data processing equipment must be purchased.

5 Regulatory Information

Power Supply
Country Selection
Laser Devices - Gigabit Ethernet SFP Option
FCC Declaration of Conformity Statement
Radio Frequency Interference Requirements - Canada
CE Marking and European Economic Area (EEA)
Statement of Compliance
Japan (VCCI) - Voluntary Control Council for Interference
Korea Warning Statement for Class B ITE
TURKISH WEEE Statement of Compliance
Waste Electrical and Electronic Equipment
RFS4010 Series ROHS Compliance

This guide applies to Model Number RFS4010.

All Extreme Networks devices are designed to be compliant with rules and regulations in locations they are sold and will be labeled as required.

Local language translations are available at the following Website: www.extremenetworks.com/documentation/

Any changes or modifications to Extreme Networks equipment, not expressly approved by Extreme Networks, could void the user's authority to operate the equipment.

Extreme Networks devices must be professionally installed and configured so that the Radio Frequency Output Power will not exceed the maximum allowable limit for the country of operation.

Power Supply

Use only an approved power supply output rated at 48Vdc and minimum 2.5A. The power supply shall be Listed to UL/CSA 60950-1; and certified to IEC60950-1 and EN60950-1 with SELV outputs. Use of alternative power supply will invalidate any approval given to this device and may be dangerous.

Country Selection

Select only the country in which you are using the device. Any other selection will make the operation of this device illegal.

Laser Devices - Gigabit Ethernet SFP Option

Complies with 21CFR1040.10 and 1040.11 except for deviations pursuant to Laser Notice No. 50, dated July 26, 2001.

EN60825-1:1994+ A1:2002 +A2:2001

IEC60825-1:1993+A1:1997+A2:2001

The laser classification is marked on the device.

Class 1 Laser devices are not considered to be hazardous when used for their intended purpose. The following statement is required to comply with US and international regulations.

> **Caution**
> Use of controls, adjustments or performance of procedures other than those specified herein may result in hazardous laser light exposure.

FCC Declaration of Conformity Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Caution:

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
- This device may not cause harmful interference
- This device must accept any interference received, including interference that may cause undesired operation.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Radio Frequency Interference Requirements - Canada

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

CE Marking and European Economic Area (EEA)

	WARNING: This is a Class B product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

The use of 2.4 GHz RLANs, for use through the EEA, have the following restrictions:

- Maximum radiated transmit power of 100 mW EIRP in the frequency range
- Italy requires a user license for outside usage.

Bluetooth® Wireless Technology for use throughout the EEA has the following restrictions:

- Maximum radiated transmit power of 100 mW EIRP in the frequency range 2.400 - 2.4835 GHz.

Statement of Compliance

Extreme Networks hereby declares that this radio equipment is in compliance with Directive 2011/65/EU and 1999/5/EC or 2014/53/EU (2014/53/EU supersedes 1999/5/EC from 13th June 2017). A Declaration of Conformity may be obtained from www.extremenetworks.com.

Japan (VCCI) - Voluntary Control Council for Interference

Class B ITE

この装置は、情報処理装置等電波障害自主規制協議会（ＶＣＣＩ）の基準に基づくクラスＢ情報技術装置です。この装置は、家庭環境で使用することを目的としていますが、この装置がラジオやテレビジョン受信機に近接して使用されると、受信障害を引き起こすことがあります。取扱説明書に従って正しい取り扱いをして下さい。

This is a Class B product based on the standard of the Voluntary Control Council for Interference from Information Technology Equipment (VCCI). If this is used near a radio or television receiver in a domestic environment, it may cause radio interference. Install and use the equipment according to the instruction manual.

Korea Warning Statement for Class B ITE

기 종 별	사 용 자 안 내 문
B 급 기기 (가정용 방송통신기기)	이 기기는 가정용 (B 급) 으로 전자파적합등록을 한 기기로서 주로 가정에서 사용하는 것을 목적 으로 하며 , 모든 지역에서 사용할 수 있습니다 .
Class B (Broadcasting Communication Device for Home Use)	This device obtained EMC registration mainly for home use (Class B) and may be used in all areas.

TURKISH WEEE Statement of Compliance

EEE Yönetmeliğine Uygundur

For terminals that support Turkish characters in SMS Release 8 services, the following statement should be printed on the packages and manual of the device:

This device conforms to technical specification in ETSI TS 123.038 V8.0.0 (or the code of any subsequent release) and ETSI TS 123.040 V8.1.0 (or the code of any subsequent release) which contain all Turkish characters.

Bu cihaz Türkçe karakterlerin tamam?n? ihtiva eden ETSI TS 123.038 V8.0.0 (veya sonraki sürümün kodu) ve ETSI TS 123.040 V8.1.0 (veya sonraki sürümün kodu) teknik özelliklerine uygundur.

Waste Electrical and Electronic Equipment

In accordance with Directive 2012/19/EU of the European Parliament on waste electrical and electronic equipment (WEEE):

1   The symbol above indicates that separate collection of electrical and electronic equipment is required.
2   When this product has reached the end of its serviceable life, it cannot be disposed of as unsorted municipal waste. It must be collected and treated separately.
3   It has been determined by the European Parliament that there are potential negative effects on the environment and human health as a result of the presence of hazardous substances in electrical and electronic equipment.
4   It is the users' responsibility to utilize the available collection system to ensure WEEE is properly treated.

For information about the available collection system, please contact Extreme Environmental Compliance at Green@extremenetworks.com.

RFS4010 Series ROHS Compliance

部件名称 (Parts)	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
金属部件 (Metal Parts)	X	O	O	O	O	O
电路模块 (Circuit Modules)	X	O	O	O	O	O
电缆及电缆组件 (Cables and Cable Assemblies)	X	O	O	O	O	O
塑料和聚合物部件 (Plastic and Polymeric Parts)	O	O	O	O	O	O
光学和光学组件 (Optics and Optical Components)	O	O	O	O	O	O
电池 (Batteries)	O	O	O	O	O	O

本表格依据 SJ/T 11364 的规定编制。

O: 表示该有害物质在该部件所有均质材料中的含量均在 GB/T 26572 规定的限量要求以下。

X: 表示该有害物质至少在该部件的某一均质材料中的含量超出 GB/T 26572 规定的限量要求。
(企业可在此处，根据实际情况对上表中打 "×" 的技术原因进 行进一步说明。)

This table was created to comply with China RoHS requirements.