

# **Firebox® X Edge™ e-Series Hardware Guide**

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Firebox X55e, Firebox X20e, Firebox X10e, Firebox X55e-W,  
Firebox X20e-W, Firebox X10e-W



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USA

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**Product (s):**

Wireless Internet Firewall with VPN Models XP2E6W, XP2E6, XP2A1E5

**EU Directive(s):**

Radio & Telecommunications Terminal Equipment (1999/5/EC)  
Low Voltage (2006/95/EC)  
Electromagnetic Compatibility (2004/108/EC)


**Common Standard(s):**

EN60950-1: 2001 Safety of ITE (valid until: 2010 12 01)

EN50022:2006	Class A Emissions for ITE
EN61000-3-2:2000 W/A2:05	Harmonics
EN61000-3-3:1995 W/A1:01	Flicker
EN50024:1998 W/A1:01 & A2:03	Immunity for ITE

**Wireless Standard(s):**

ETSI EN 300 328-02 V1.4.1 (2003-04) EMC and Radio Spectrum Matters  
ETSI EN 301 489-17 V1.1.1 (2000-09) EMC and Radio Spectrum Matters  
ETSI EN 301 489-01 V1.4.1 (2002-08) EMC and Radio Spectrum Matters

Signature   
Full Name Joe Wang  
Position Chief Executive Officer  
Date 09 October 2008

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## **FCC Certification**

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This device has been tested and found to comply with limits for a Class A digital device, pursuant to 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.

NOTE: The antennas used for this transmitter must be installed to provide a separation distance of at least 20cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

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# Hardware Guide

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The WatchGuard® Firebox® X Edge e-Series is a firewall for small organizations and branch offices.

The Firebox X Edge e-Series product line includes:

- Firebox X Edge e-Series
- Firebox X Edge e-Series Wireless

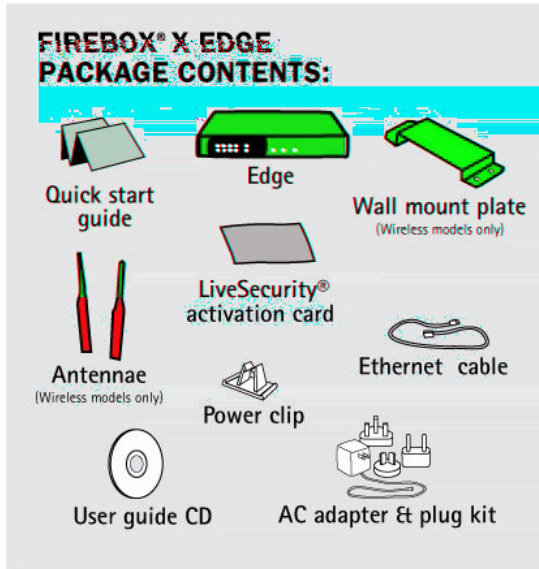
## Package Contents

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The Firebox® X Edge e-Series package includes:

- Hardware firewall
- *Firebox X Edge e-Series User Guide and Hardware Guide* on CD-ROM
- *Firebox X Edge e-Series Quick Start Guide*
- License key certificate
- Hardware warranty card
- AC adapter (12V/1.2A) with international plug kit
- Power cable clip, to attach to the cable and connect to the side of the Edge. This decreases the tension on the power cable.

- Four rubber feet you can attach to protect the bottom of your Firebox X Edge case
- One straight-through cable
- Wall mount plate (wireless models only)
- Two antennas (wireless models only)



## Specifications

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The specifications for the Firebox® X Edge e-Series and the Firebox X Edge e-Series Wireless are:

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Processor	X Scale (ARM)
CPU	266 MHz
Memory: Flash	64 MB
Memory: RAM	128 MB
Ethernet interfaces	6 each 10/100
Serial ports	1 DB9
Power supply	12V/1.2A
Operating temperature	0 - 40 C
MTBF for Firebox X Edge e-Series	60,555 hours @ 25 degrees C
MTBF for Firebox X Edge e-Series Wireless	53,901 hours @ 25 degrees C
Environment	Indoor use only
Dimensions for Firebox X Edge e-Series	Depth = 6.25 inches Width = 7.4 inches Height = 1.25 inches
Dimensions for Firebox X Edge e-Series Wireless, including antenna	Depth = 6.25 inches Width = 10.9 inches Height = 1.25 inches
Weight of Firebox X Edge e-Series	1.9 U.S. pounds
Weight of Firebox X Edge e-Series Wireless	2.0 U.S. pounds

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## Hardware Description

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The Firebox® X Edge e-Series has a simple hardware architecture. All indicator lights are on the front panel of the device, and all ports and connectors are on the rear panel.

### Front panel

The front panel of the Firebox X Edge e-Series has 18 indicator lights to show link status. The top indicator light in each pair comes on when a link is made and flashes when traffic goes through the related interface. The bottom indicator light in each pair comes on when the link speed is 100 Mbps. If the bottom indicator light does not come on, the link speed is 10 Mbps.



#### WAN 1, 2

Each WAN indicator shows the physical connection to the external Ethernet interfaces. The light is yellow when traffic goes through the related interface.

#### LAN 0, 1, 2

Each LAN indicator shows the physical connection to the trusted Ethernet interfaces.

#### WAP

The WAP indicator shows that the Firebox X Edge e-Series is activated as a wireless access point. The light is green when traffic goes through the wireless interface on a Firebox X Edge e-Series Wireless model.

### **Fail Over**

The Fail Over indicator shows a WAN failover. The light is green when there is a WAN failover from WAN1 to WAN2. The light goes off when the external interface connection goes back to WAN1.

### **Link**

The link indicator shows a physical connection to a trusted Ethernet interface. The trusted interfaces have the numbers 0 through 2. The light comes on when traffic goes through the related interface.

### **100**

When a trusted network interface operates at 100 Mbps, the related 100 indicator light comes on. When it operates at 10 Mbps, the indicator light does not come on.

### **Status**

The status indicator shows a management connection to the Firebox X Edge e-Series. The light goes on when you use your browser to connect to the Firebox X Edge e-Series configuration pages. The light goes off a short time after you close your browser.

### **Mode**

The mode indicator shows the status of the external network connection. The light comes on when the Ethernet cable is correctly connected to the WAN1 interface. The light is green if the Firebox X Edge e-Series can connect to the external network and send traffic. The light flashes if the Firebox X Edge e-Series cannot connect to the external network and send traffic.

### **Attn**

The Attn indicator lights when you reset the Firebox X Edge e-Series to factory default settings.

### **Power**

The power indicator shows that the Firebox X Edge e-Series is on.

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## Rear view



### Ethernet interfaces LAN0 through LAN2

The Ethernet interfaces with the marks LAN0 through LAN2 are for the trusted network.

### OPT interface

This Ethernet interface is for the optional network.

### WAN interfaces 1 and 2

The WAN1 and WAN2 interfaces are for external networks.

### Power input

A 12V/1.2A power supply is included with your Firebox X Edge e-Series. Connect the AC adapter to the Firebox X Edge and to a power source. The power supply tip is plus (+) polarity.

### RESET button

To reset the Firebox X Edge e-Series, use the procedure in “Restore Factory Default Settings” on page 8.

## Side panels

### Computer lock slot

The two side panels of the Firebox X Edge e-Series have a slot for a computer lock.

### Antennas (wireless model only)

The two side panels of the Firebox X Edge e-Series Wireless have wireless antennas.

### **Wall mounting plate (wireless model only)**

The wall mounting plate enables you to put the Firebox X Edge e-Series in a good location to increase the range.

### **AC power adapter**

The AC power adapter supplies power for the Firebox X Edge e-Series. You must use the correct plug for the AC power adapter for the power source used in your country.

The international plug kit includes four plugs: Q-NA (North America), Q-UK (United Kingdom), Q-EU (European Union), and Q-SAA (Asia).

### **Removing a plug from the AC power adapter**

If the plug installed in the AC power adapter does not match your power source:

- 1 Use your thumb or finger to move the locking key on the AC power adapter down.
- 2 Hold the bottom of the plug.
- 3 Pull up from the bottom of the plug to remove it from the AC power adapter.

### **Connecting a plug to the AC power adapter**

To install a different plug in the AC power adapter:

- 1 Put the top of the new plug in the AC power adapter at a 45-degree angle.  
You must put in the top of the new plug first. Do not use force to put the plug into the adapter.
- 2 Push the bottom of the new plug into the AC power adapter.  
The plug clicks into position.

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## Restore Factory Default Settings

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If you have a problem in your configuration file that you cannot correct, you can restore the factory default settings and start from a new configuration file. For example, if you do not know the administrator account passphrase, or if a power interruption causes damage to the Firebox X Edge appliance software, you can restore the Edge to the factory default settings and build your configuration again.

To set the Firebox X Edge e-Series to the factory default settings:

- 1 Disconnect the power supply.
- 2 Hold down the **Reset** button on the back of the Edge.
- 3 Connect the power supply while you continue to hold down the **Reset** button.
- 4 Continue to hold down the button until the yellow **Attn** light stays lit. This indicates that the Edge was successfully restored to the factory default settings.

This process can take 45 seconds or more.

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### Note

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You must start the Edge again before you can connect to it. If you do not, when you try to connect to the Edge, a web page appears with the message, "Your WatchGuard Firebox X Edge is running from a backup copy of firmware." This message also appears if the **Reset** button is stuck in the depressed position. If you continue to see this message, check the **Reset** button and start the Edge again.

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- 5 Disconnect the power supply.
  - 6 Connect the power supply again.  
The Power Indicator lights and your Edge is reset.

## About the Firebox X Edge e-Series Wireless

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The Firebox X Edge e-Series Wireless conforms to IEEE 802.11g/b wireless LAN standards. Some key features that have an effect on performance of an 802.11g/b wireless device include antenna directional gain, signal attenuation (path loss), and channel data rate.

### **Antenna directional gain**

Antenna directional gain is based on the shape of the radiation pattern around the antenna. The Firebox X Edge e-Series Wireless uses two 5.1 dBi swivel-mount whip antennas. The whip antenna has a radiation pattern similar to a sphere that is squashed in the center. If the antenna points up, the gain is largest in the horizontal direction and less in the vertical direction.

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## Signal attenuation

Signal attenuation refers to the loss of signal power. It can be caused by multi-path reflection. Multi-path reflection occurs when RF signals that come to the receiver must move along more than one path because of walls and other surfaces between the transmitter and the receiver. It changes based on the phase at which the signals come. Signal strength can be increased or decreased by as much as 30dB.

To decrease the effect of multi-path reflection, the Firebox X Edge e-Series Wireless uses two antennas spaced some distance apart. This decreases signal cancellation and allows the software to find the best antenna to receive and transmit as conditions change.

Wireless clients usually have one antenna and are more sensitive to the effects of antenna location. Because of this, the Firebox X Edge e-Series Wireless can receive signals from a wireless client even if the client does not receive signals from the Firebox X Edge.

## Channel data rate

Channel data rate changes with the modulation type, which changes based on conditions including noise and the distance between transmitter and receiver. In general, the available data rates for an IEEE 802.11g/b device change from 1 Mbps in the worst conditions to 54 Mbps in the best conditions.