



# Installing EMI Gaskets and RF Absorber Material on the Cisco uBR10012 Universal Broadband Router

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This document describes how to install EMI gaskets and RF absorber material on the Cisco uBR10012 universal broadband router before you install the PRE2 modules. EMI gaskets and RF absorber material are only required if you are replacing PRE1 modules with PRE2 modules in a Cisco uBR10012 universal broadband router.

## Document Revision History

The Document Revision History table below records technical changes to this document. The table shows the document revision number for the change, the date of the change, and a brief summary of the change. Note that not all Cisco documents use a Document Revision History table.

Revision	Date	Change Summary
OL-24534-01	February 22, 2011	Moved document to online only and updated format.
78-16769-01	December 28, 2004	Initial publication.

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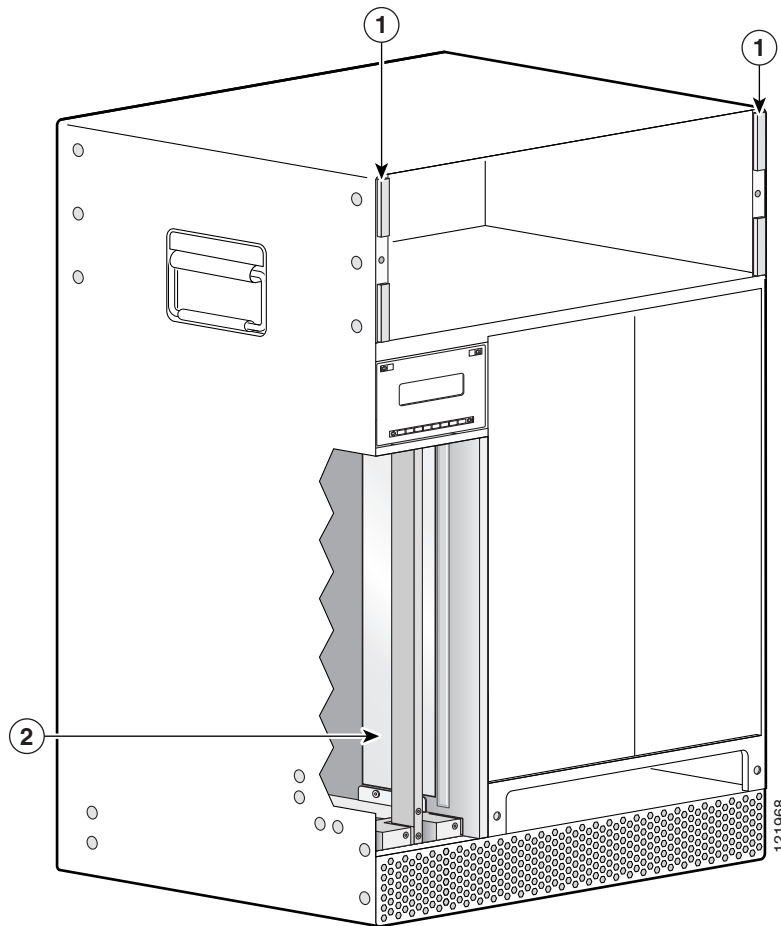
## Introduction

Upgrading to a Cisco ESR-PRE2 (PRE2) in the Cisco uBR10012 router results in unacceptable Cisco manufacturing EMI emission margins. By installing EMI gaskets and RF absorber material in the locations specified, an acceptable margin is met.


**Note**

This condition is not harmful to the PRE2 or the Cisco uBR10012 router.

**Figure 1** *Locations of EMI Gaskets and RF Absorber Material*



<b>1</b>	EMI gaskets (4)	<b>2</b>	RF absorber material
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## Before You Begin

Verify that you need this upgrade. Check the locations in [Figure 1](#) for installed EMI gaskets and RF absorber material. If you already have the EMI gaskets and RF absorber material installed, you do not need to continue with this procedure and you can continue with the installation of the Cisco ESR-PRE2 modules.

## Preparing the Chassis

Have the following equipment available:

- ESD-preventive wrist strap, antistatic bags, and an antistatic surface
- EMI gaskets and RF absorber material kit
- PRE2 modules to replace the PRE1 modules
- Lint-free wipes

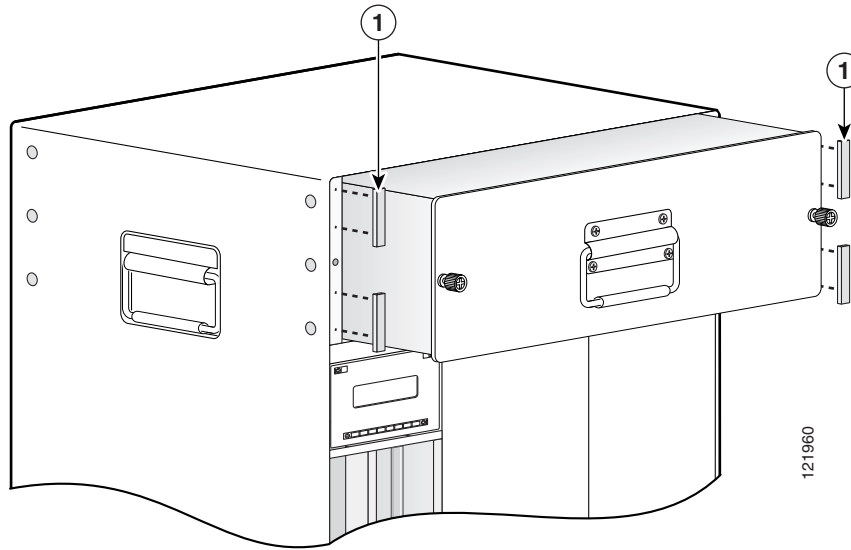
To prepare the chassis for installation of the EMI gaskets and RF absorber material, do the following:

- 
- Step 1** Make sure you are properly grounded.
- Step 2** Power down the router.
- Step 3** Remove the PRE1 modules from the chassis and place them on an antistatic surface.
- a. Loosen the captive screws and pivot the ejector levers away from the modules.
  - b. Slide the PRE1 modules out of the chassis and place them in antistatic bags.
- 

## Installing the EMI Gaskets

The EMI gaskets are installed on the chassis on either side of the fan module. See [Figure 2](#). This procedure should take 2 to 3 minutes.

**Figure 2** *Installation Location of the EMI Gaskets*

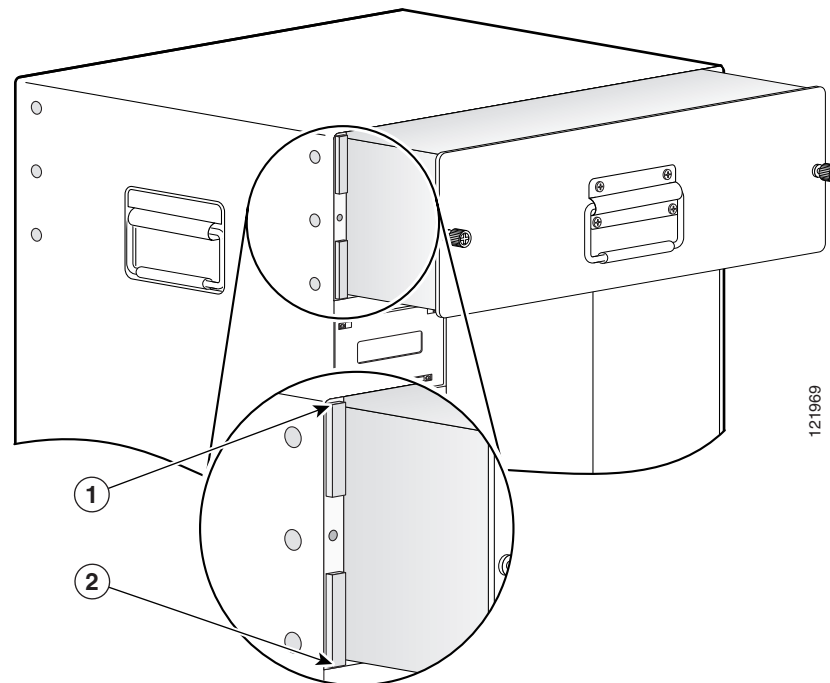


<b>1</b>	EMI gaskets (4)
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To install the EMI gaskets, perform the following steps:

- Step 1** Loosen the captive screws on the fan module and pull the fan module out of the chassis far enough so that you can install the EMI gaskets. You do not need to remove the fan module from the chassis.
- Step 2** With a clean wipe, wipe off the left and right flanges where the four EMI gaskets will be installed.
- Step 3** Peel the backing off the gasket (only prepare one gasket at a time).
- Step 4** Align the sticky side of the gasket with the flange so that the end of the gasket is level with the top of the flange, see [Figure 3](#).

**Figure 3** *Aligning the EMI Gasket*



<b>1</b>	Top of flange	<b>2</b>	Bottom of flange
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- Step 5** Carefully place the EMI gasket on the flange and press down to secure the gasket in place.

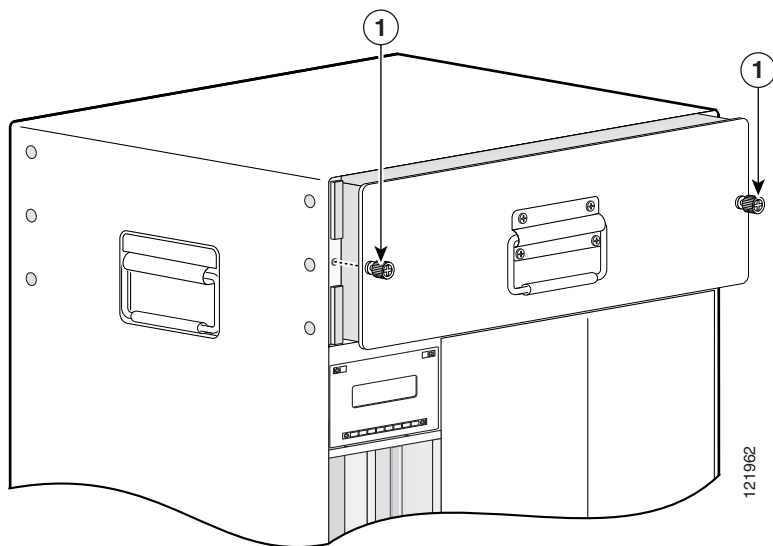


**Caution**

Do not let the gasket slip to either side of the flange. Maintain a distance of at least one-half inch around the captive screw hole in the flange. See [Figure 3](#).

- Step 6** Peel the backing off the bottom EMI gasket and align the end of the gasket with the bottom of the flange. See [Figure 3](#).
- Step 7** Carefully place the gasket on the flange and press down to secure the gasket in place.
- Step 8** Repeat [Step 3](#) through [Step 7](#) for the other side of the chassis.

**Figure 4** Installed EMI Gaskets



- |          |                |
|----------|----------------|
| <b>1</b> | Captive screws |
|----------|----------------|

**Step 9** Push the fan module back into the chassis and use the captive screws to secure the fan module in place. Note that the EMI gaskets are compressed when securing the fan to the chassis. See [Figure 4](#)

## Installing the RF Absorber Material

RF absorber material is required when you are installing PRE2 modules in your Cisco uBR10012 router. The absorber material is placed on the inside panel of PRE slot B. This procedure should take 4 to 5 minutes.

To install the RF absorber material, use the following procedure:

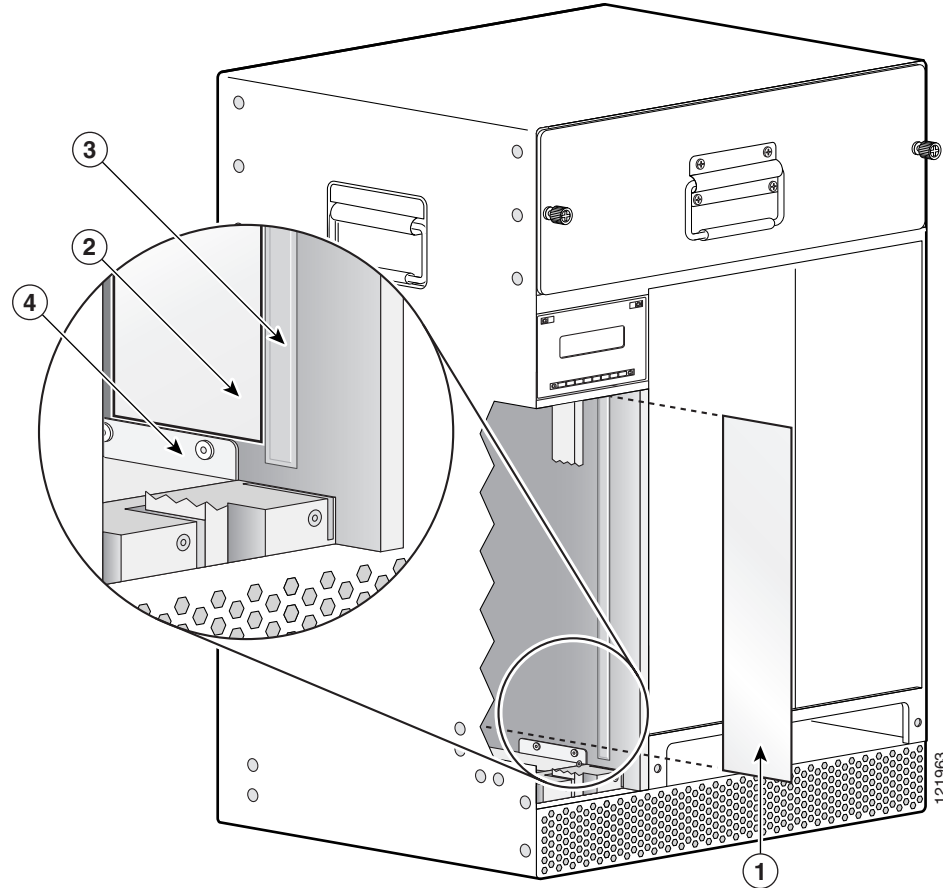
- Step 1** Make sure you are properly grounded.
- Step 2** Remove both PRE1 modules from the chassis, if you have not already done so.
- Step 3** Using a clean lint-free wipe, wipe the inside panel of the PRE module slot B (panel next to the power supplies). Make sure that the edge of the lip and the edge along the raised channel are free of any dust or debris. See [Figure 5](#).



**Caution**

If the RF absorber material is bubbled or marred by debris left on the surface of the panel or on the lip at the bottom, the PRE2 module may catch on the RF absorber material and not fit properly into the slot.

**Figure 5** Aligning the RF Absorber Material with the Raised Channel and Lip



<b>1</b>	RF absorber material	<b>3</b>	Raised channel
<b>2</b>	Align the RF absorber material here	<b>4</b>	Lip

**Step 4** Peel the backing from the 2.7 x14.2 inch sheet of RF absorber material. Be very careful not to let any two adhesive covered sections of the material stick together, it is very difficult to unstick.

**Step 5** Carefully align the material in the area shown in [Figure 5](#). When you are aligning the material, align it with both the edge of the raised channel and the edge of the lip.



**Caution**

Take special care to properly align this material before securing it in place, the material is difficult to remove once it is securely in place.  
Do not allow the RF absorber material to over lap the raised channel or the lip as it can interfere with the PRE2 installation.

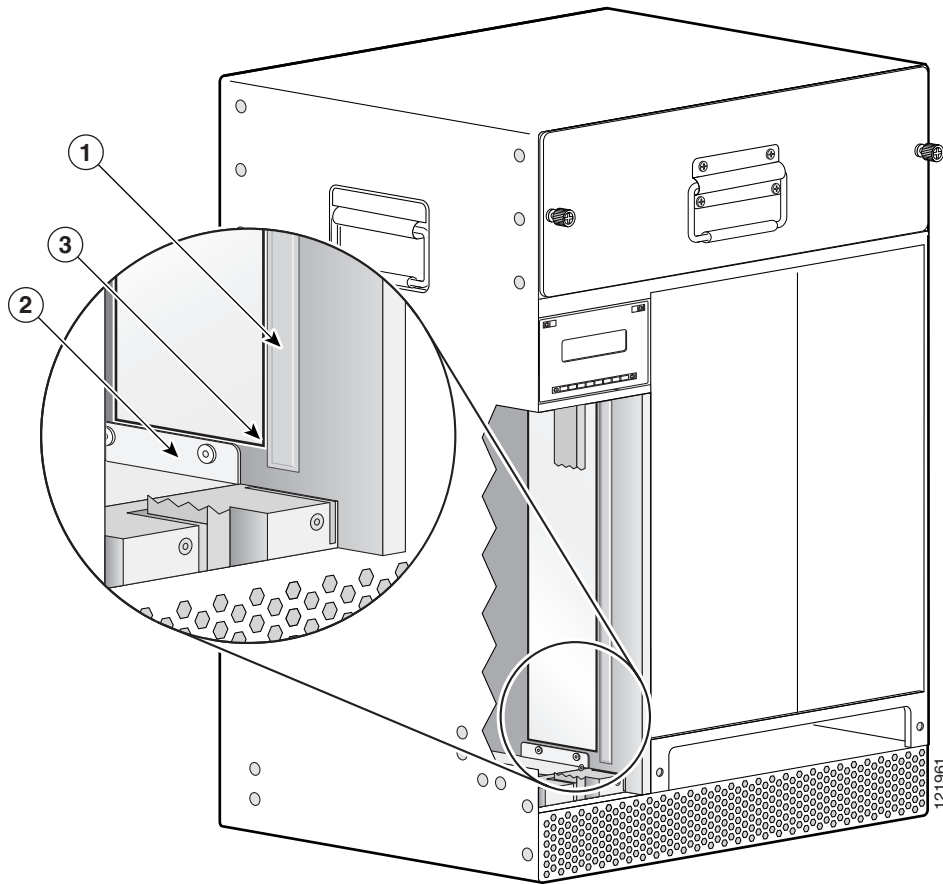
**Step 6** Lightly press the RF absorber material into place along the raised channel, making sure that there are no bubbles or wrinkles in the material.



**Note**

You can lift the RF absorber material from the panel to reposition it, but each time you do, the adhesive backing loses some of its integrity.

**Figure 6** *Aligning the RF Absorber Material*



1	Raised channel	3	Aligned RF absorber material
2	Lip		

**Step 7** When the material is properly aligned and laying flat against the surface of the panel, gently press down on the material, starting from the side nearest the raised channel and moving toward the back of the chassis.

Make sure that you don't cause the material to slip out of place and check for any wrinkles or bubbles. Reset the RF absorber material, if necessary.

## Installing the PRE2 Modules

After the installation of the RF absorber material is complete, install the PRE2 modules in the chassis. Refer to *Performance Routing Engine Module for the Cisco uBR10012 Universal Broadband Router* at the following URL:

[http://www.cisco.com/en/US/docs/interfaces\\_modules/cable/performance\\_routing\\_engine/installation/guide/pre5096.html](http://www.cisco.com/en/US/docs/interfaces_modules/cable/performance_routing_engine/installation/guide/pre5096.html)

# Part Numbers

**Table 1**      **Part Numbers**

Description	Part Number
PRE2 module	ESR-PRE2, ESR-PRE2/R
UBR-PRE2-EMI uBR10012 chassis EMI emission kit for use with the PRE2	UBR10-PRE2-EMI, UBR10-PRE2-EMI= The kit includes: 4-EMI gaskets, 0.25 x 2 in. (6.35 x 50.80 mm) 1-RF absorber material, 2.7 x 14.2 in. (68.55 x 360.68 mm) Installation documentation

## Related Documentation

- *Performance Routing Engine Module for the Cisco uBR10012 Universal Broadband Router* at the following URL:  
[http://www.cisco.com/en/US/docs/interfaces\\_modules/cable/performance\\_routing\\_engine/installation/guide/pre5096.html](http://www.cisco.com/en/US/docs/interfaces_modules/cable/performance_routing_engine/installation/guide/pre5096.html)
- *Cisco uBR10012 Universal Broadband Router Hardware Installation Guide* at the following URL:  
<http://www.cisco.com/en/US/docs/cable/cmts/ubr10012/installation/guide/hig.html>

## Obtaining Documentation and Submitting a Service Request

For information on obtaining documentation, submitting a service request, and gathering additional information, see the monthly *What's New in Cisco Product Documentation*, which also lists all new and revised Cisco technical documentation, at:

<http://www.cisco.com/en/US/docs/general/whatsnew/whatsnew.html>

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