



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 performance routing engine (PRE) modules. Foam gaskets are required if you are replacing an earlier generation of the PRE module with PRE5.

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-24534-03	June 3, 2013	Added information for the chassis sidewall EMI gasket.
OL-24534-02	April 24, 2013	Added information for the foam gasket for PRE5.
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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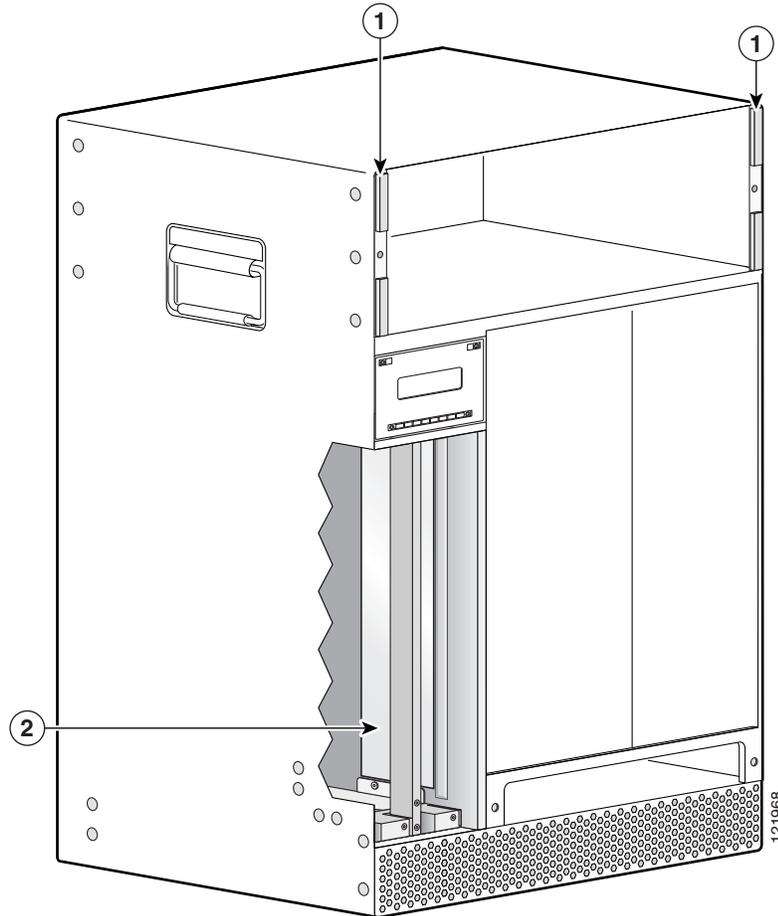
Introduction

Upgrading to a Cisco ESR-PRE2 (PRE2) module in the Cisco uBR10012 router might result 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 PRE2 modules or the Cisco uBR10012 router.

Figure 1 Locations of EMI Gaskets and RF Absorber Material



1	EMI gaskets (4)	2	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 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

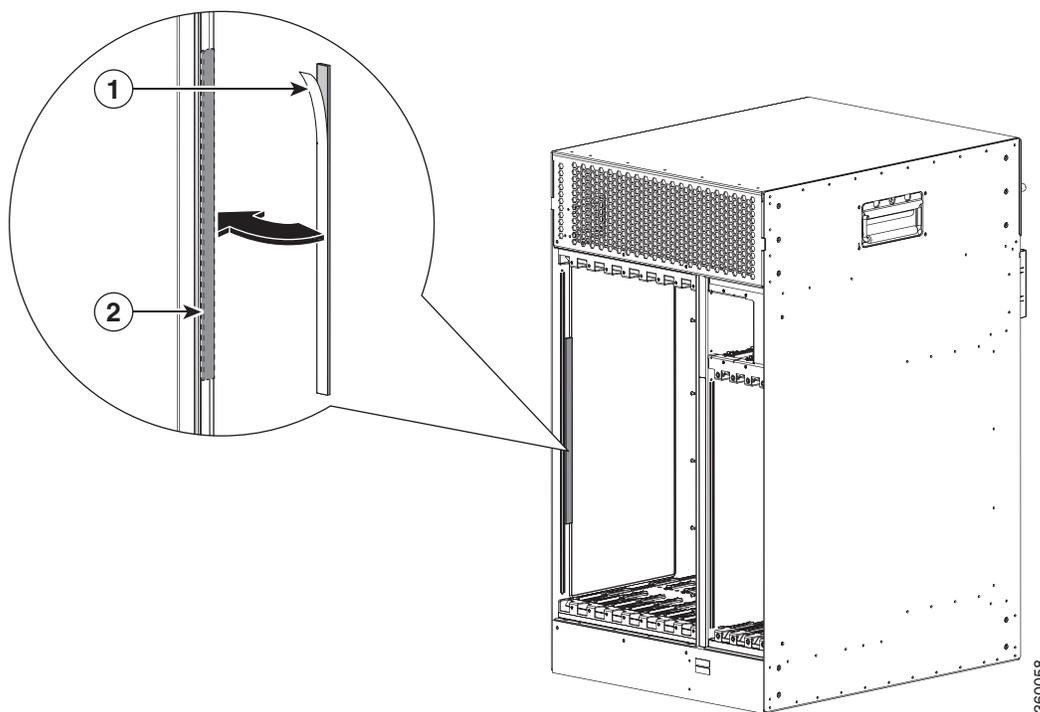
To prepare the chassis for installation of the EMI gaskets and RF absorber material, do the following:

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- Step 1** Make sure you are properly grounded.
 - Step 2** Power down the router.
 - Step 3** Remove the existing PRE 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 PRE modules out of the chassis and place them in antistatic bags.
-

Installing the EMI Gasket on the Chassis Sidewall

An EMI gasket (51-6555-01) must be installed on the center of the chassis sidewall. (See [Figure 2](#).)

Figure 2 EMI Gasket on the Chassis Sidewall



- | | | | |
|----------|----------------------------------|----------|---------------------------------|
| 1 | Gasket with the adhesive backing | 2 | Gasket attached to the sidewall |
|----------|----------------------------------|----------|---------------------------------|

To attach the EMI gasket to the chassis sidewall, perform the following steps:

-
- Step 1** Peel the adhesive backing off the gasket.
- Step 2** Align the sticky side of the gasket to the center of the chassis sidewall and attach it firmly next to the current line card 8/0 EMI gasket. (See [Figure 2.](#))
-

Installing the EMI Gaskets on the Fan Module

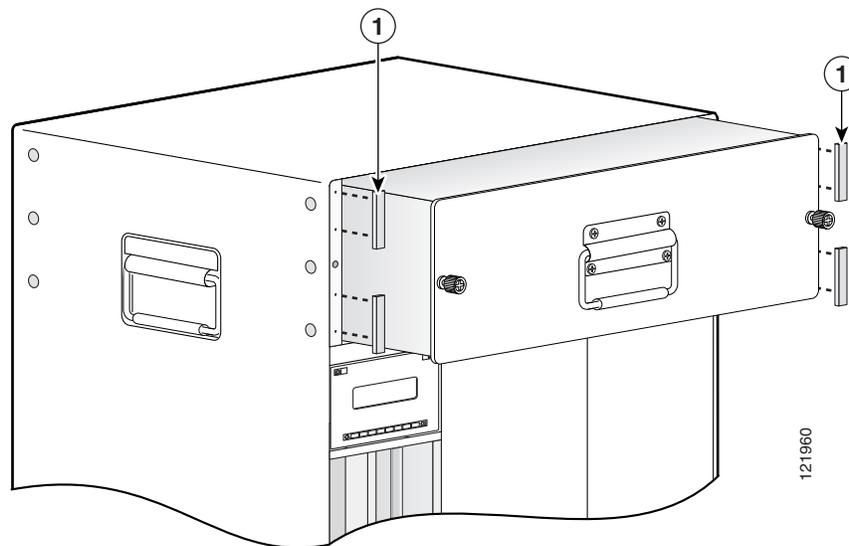
The EMI gaskets are installed on the chassis on either side of the fan module. See [Figure 3](#). This procedure should take 2 to 3 minutes.



Note

EMI gaskets are only required if you are replacing PRE1 modules with PRE2 modules in a Cisco uBR10012 universal broadband router.

Figure 3 Installation Location of the EMI Gaskets

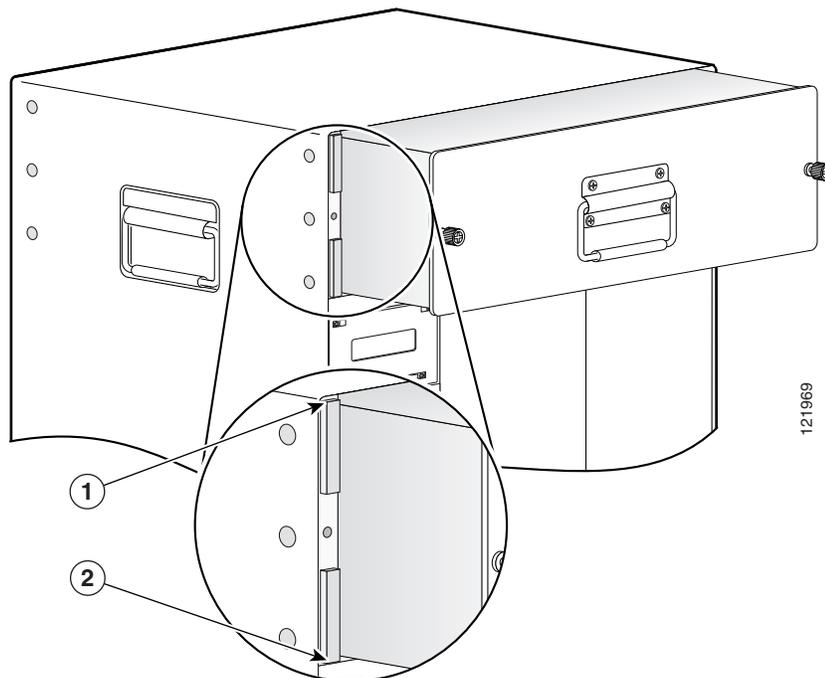


1	EMI gaskets (4)
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To install the EMI gaskets on the fan module, perform the following steps:

-
- 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 4](#).

Figure 4 *Aligning the EMI Gasket*



1	Top of flange	2	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.

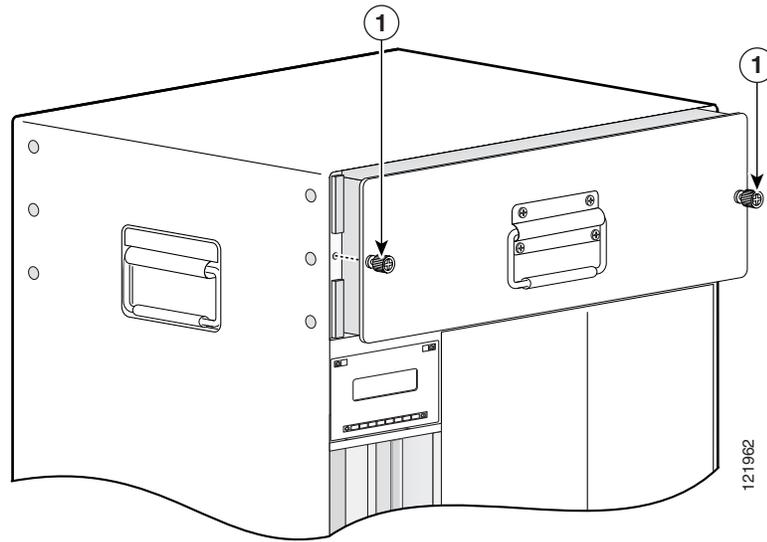


Caution Do not let the gasket slip to either side of the flange. Maintain a distance of at least one-half inch around the captive screw hole in the flange.

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 4](#).

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 5 Installed EMI Gaskets

1	Captive screws	
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- 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 5](#).

Installing the Foam Gaskets for PRE5

PRE5 is the next-generation processor engine for the Cisco uBR10012 router. Foam gaskets should be installed on the LCD display panel of the Cisco uBR10012 router to meet the EMI requirements.

- Step 1** Loosen the four screws on the LCD display panel and remove it from the chassis.



Note Place the LCD display panel on an antistatic mat.

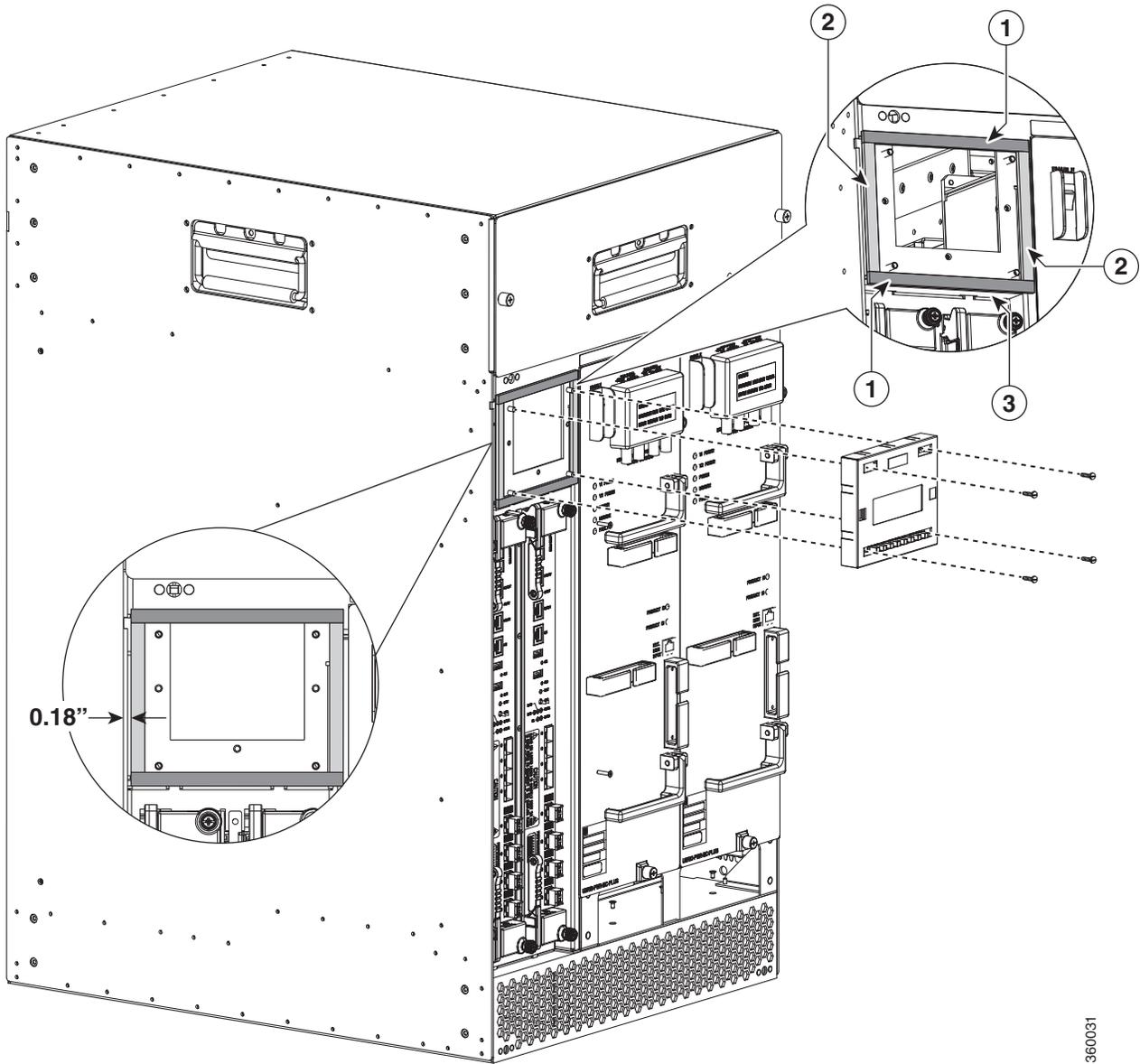
- Step 2** Peel the adhesive backing off the gaskets.

- Step 3** First align the foam gasket 1 (51-6582-01) 0.180 inches from the edge of the chassis as shown in [Figure 6](#). Then, align and stick the foam gasket 1 (51-6582-01) along the bottom surface of the base part of LCD display panel.



Note Ensure that you use the gaskets in strict accordance to the procedure mentioned here.

Figure 6 Installing the Foam Gaskets for PRE5



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1	Foam gaskets (51-6582-01)	3	Bottom surface of the base part of the LCD display panel
2	Foam gaskets (51-6581-01)	—	

Step 4 Stick the other foam gaskets on the surfaces of the base part of the LCD display panel.

Step 5 Reinstall the LCD display panel by tightening the four screws on the LCD display panel.

Installing the RF Absorber Material

RF absorber material is required when you are installing PRE2 modules in your Cisco uBR100012 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:

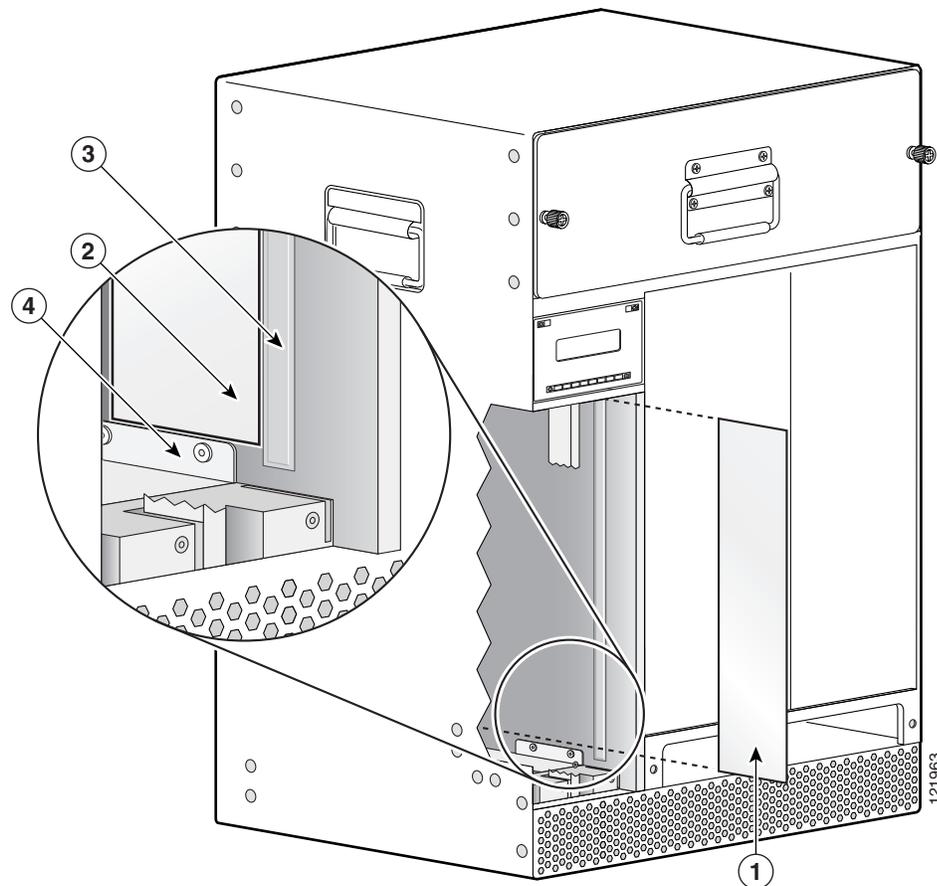
- Step 1** Make sure you are properly grounded.
- Step 2** Remove both PRE1 modules from the chassis, if you have not already done so.
- Step 3** Using a clean lint-free wipe, wipe the inside panel of the PRE module slot B (panel next to the power supplies). Make sure that the edge of the lip and the edge along the raised channel are free of any dust or debris. See [Figure 7](#).



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 7 *Aligning the RF Absorber Material with the Raised Channel and Lip*



1	RF absorber material	3	Raised channel
2	Align the RF absorber material here	4	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 7](#). 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.

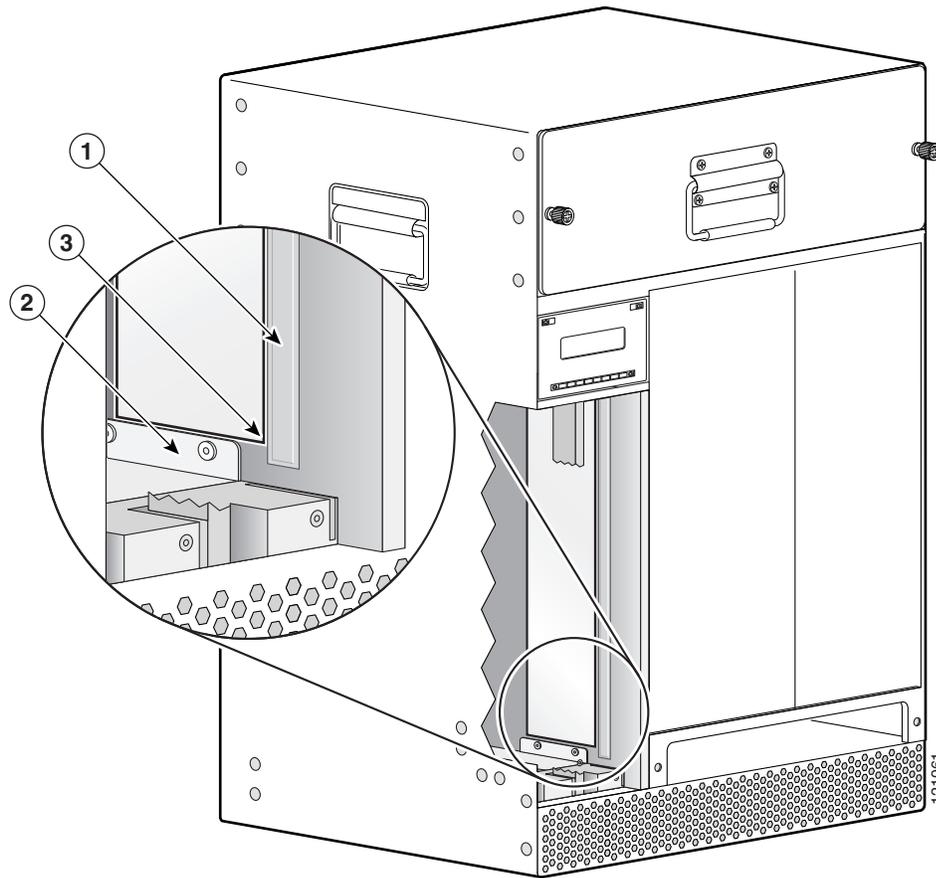
Step 6 Lightly press the RF absorber material into place along the raised channel, making sure that there are no bubbles or wrinkles in the material.



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 8 **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

Part Numbers

Table 1 Part Numbers

Description	Part Number
EMI emission kit for the Cisco uBR10012 router	51-6555-01
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
EMI emission kit for use with the PRE5- Foam gaskets	51-6581-01 and 51-6582-01 The kit includes four foam gaskets.

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
- *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>
- *Cisco Performance Routing Engine 5 Hardware Installation Guide* at the following URL:
http://www.cisco.com/en/US/docs/interfaces_modules/cable/performance_routing_engine/installation/guide/b_pre5_hig.html

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

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