



Net-Net[®] 9200
SSM2 Installation Guide

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Acme Packet, Inc.
71 Third Avenue
Burlington, MA 01803 USA
t 781-328-4400
f 781-425-5077
<http://www.acmepacket.com>

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About This Guide

Overview

The Net-Net™ 9200 is a high performance, high capacity session border controller that optimally delivers interactive communications—voice, video, and multimedia sessions—across wireline, wireless, and cable IP network borders.

The Net-Net 9200 SSM2 Installation Guide describes how to install an SSM2 in your Net-Net 9200.

Audience

This guide is written for network administrators, and telecommunications equipment installers and technicians. It provides information related to the hardware components, features, installation, start-up, operation, and maintenance of the Net-Net 9200. Only experienced and authorized personnel should perform installation, configuration, and maintenance tasks.

For information about Net-Net 9200 training, contact your Acme Packet sales representative directly or email support@acmepacket.com.

Who is Acme Packet?

Acme Packet enables service providers to deliver trusted, first class interactive communications-voice, video and multimedia sessions-across IP network borders. Our Net-Net family of session border controllers satisfy critical security, service assurance and regulatory requirements in wireline, cable and wireless networks. Our deployments support multiple applications-from VoIP trunking to hosted enterprise and residential services; multiple protocols-SIP, H.323, MGCP/NCS and H.248; and multiple border points-interconnect, access network and data center.

Established in August, 2000 by networking industry veterans, Acme Packet is a public company traded on the NASDAQ and headquartered in Burlington, MA.

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Contact Us

Acme Packet
71 Third Avenue
Burlington, MA 01803 USA
t 781 328 4400
f 781 425 5077
<http://www.acmepacket.com>

SSM2 Installation

Introduction

This chapter provides information about how to install the Signaling Security Module 2 (SSM2) Card in your Net-Net 9200's SPU.

The following is a list of the major steps required to install an SSM2 in a Net-Net 9200.

1. Follow preinstallation guidelines
2. Ground yourself and follow proper ESD grounding procedures
3. Remove the first SPU from the Net-Net 9200 chassis
4. Install the SSM2 on the SPU
5. Replace the upgraded SPU in the Net-Net 9200 Chassis
6. Repeat Steps 3-5 for the second SPU

Shipped Parts

An SSM2 upgrade order contains the following:

- Acme Packet SSM2
- 4 x female-female nylon hex standoffs
- 8 x Phillips head nylon screws

The following are images of the shipped hardware used for the Net-Net 9200 SSM2 installation:

Female-Female Nylon Hex Standoff (4 x shipped)



Phillips Head Nylon Screws (8 x shipped)



Installation Tools and Parts

The following tools and parts are required to install an SSM2 on your SPU.

- #1 Phillips-head screwdriver
- #2 Phillips-head screwdriver
- 4.5 mm nut driver
- ESD wrist strap
- ESD workbench

Preinstallation

- This upgrade should be performed during low-traffic periods or scheduled maintenance windows.
- When installing or removing SSM2s, move the SPUs to an appropriate maintenance location.
- Ground yourself using an ESD wrist strap or similar device.
- Never install or remove an SSM2 on an SPU that is not fully removed from the Net-Net 9200.

Preparing the SSM2 Card for Installation

To prepare the SSM2 card for installation, you must set the switch on the card to the 9200 setting.

Installation

ESD Grounding

When performing maintenance on Net-Net 9200 components, you must ground yourself to the chassis with an ESD wrist strap. An ESD wrist strap is used to channel static electricity to ground. Proper grounding is essential for handling static-sensitive equipment such as processing and interface units.

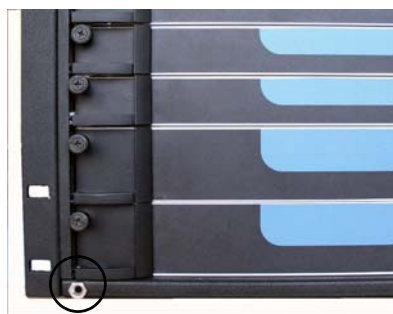
Alternatively, you can ground yourself according to established grounding guidelines of the location where the Net-Net 9200 resides.

The Net-Net 9200 has two grounding jacks, one on the front and one on the back of the chassis. These jacks accept banana plugs. You fasten the wrist-side of the ESD wrist strap to your wrist, and the ground side of the wrist strap is plugged into the Net-Net 9200's chassis.

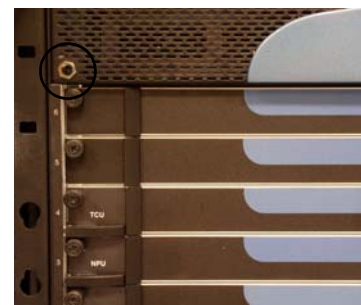
Note: An ESD wrist strap is not shipped with your SSM2 install kit.

To connect an ESD wrist strap to the Net-Net 9200 Chassis:

1. Locate the banana jack on the front side of the chassis. Depending on your model, it will be located either on the bottom or top of the chassis.



Front-Panel Bottom



Front-Panel Top

2. Insert the banana plug into the jack.



3. Attach the wrist strap to your wrist using the procedures that accompany the ESD wrist strap.



Begin performing maintenance on the Net-Net 9200.

SPU Removal

Before installing the SSM2, you must remove the SPU on which the SSM2 will be attached. The following steps illustrate the proper way to remove an SPU.

To remove an SPU:

1. Unscrew the two thumb screws located on each side of the processing unit with a #2 Phillips screwdriver.



The screws are spring-loaded and will be pushed forward, but will not fall out of the processing unit.

2. Place one or two fingers behind the slide latches and push each one toward the center of the processing unit. This action sends a signal to the SPU to shut down the card and perform all switchover actions if the system is powered up.



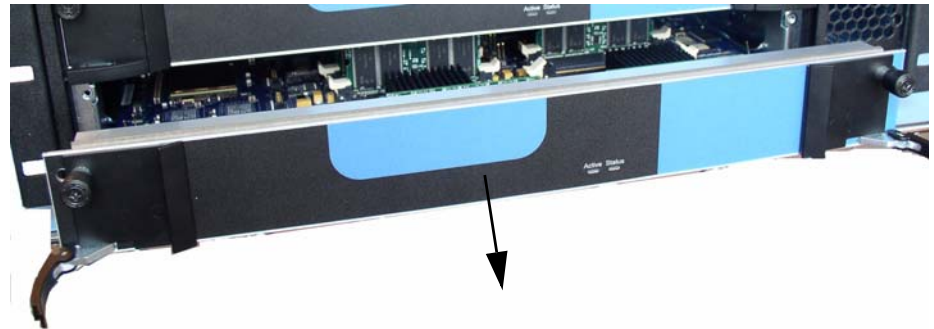
Each slide latch travels 0.28 inches (0.71 cm) before stopping.

3. Hold each ejector lever between your thumb and index finger and pivot each lever away from the center of the processing unit.



This action disengages the processing unit from the mid-plane, severing all electrical contact to the processing unit.

4. Hold the processing unit's front bezel and pull it out of the chassis.



The processing unit rides on the card rails until it is completely removed from the chassis.

5. Move the SPU to an ESD approved workbench or other supportive surface.

SSM2 Installation

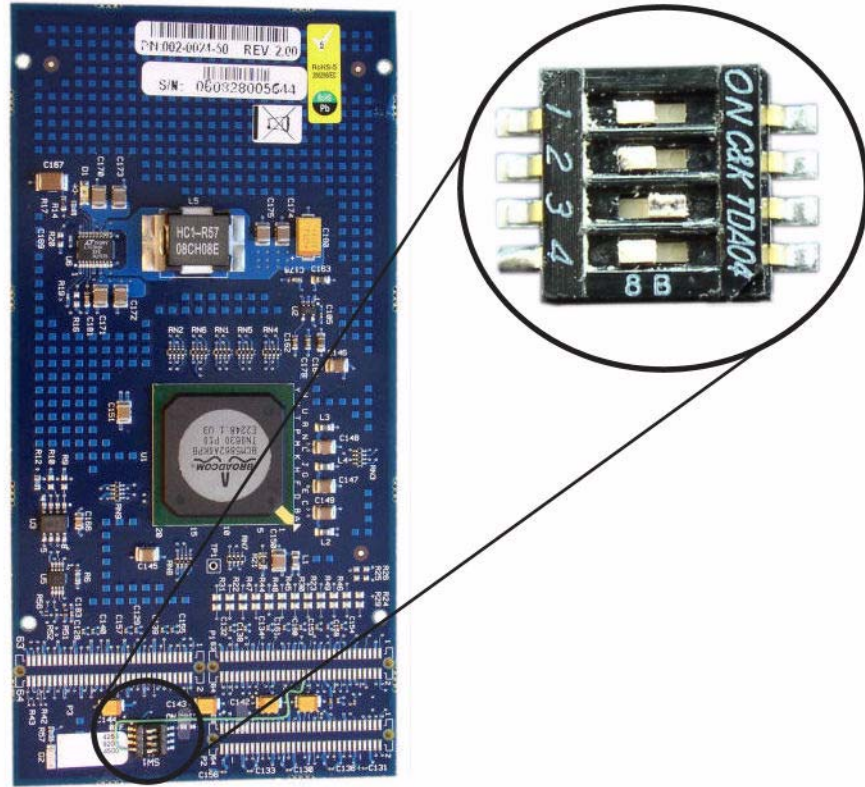
The SSM2 attaches electrically to the SPU by three board-to-board connectors. In addition, it is physically secured to the SPU at four points by a nylon standoff set.

Caution

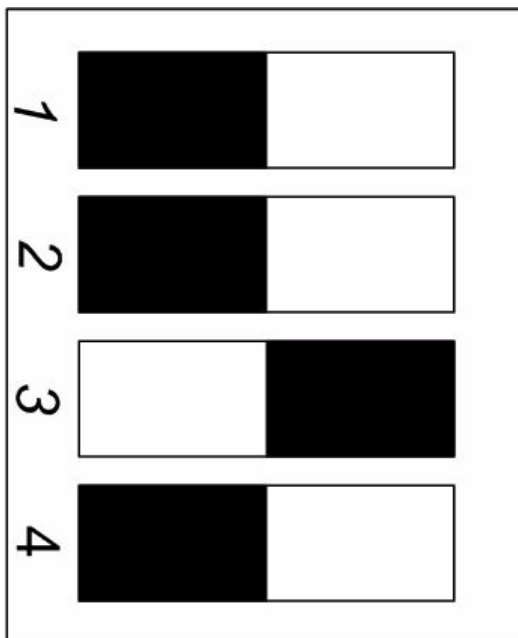
Before handling the SSM2 and SPU, ground yourself using an ESD wrist strap or other comparable grounding system. Failure to do so could damage the SSM2 or the SPU.

SSM2 Preparation

Before you can install the SSM2, you must configure the card specifically to work on the Net-Net 9200 by setting the DIP switches accordingly.

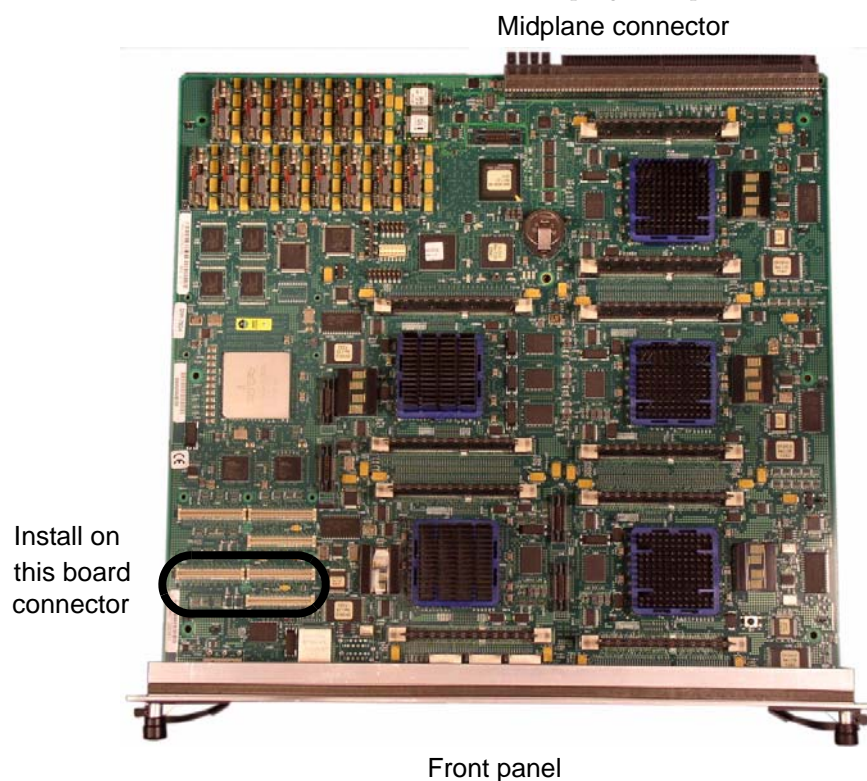


The number 3 switch should be pushed to the right. The numbers 1, 2, and 4 switches should be pushed to the left, as in the following illustration.

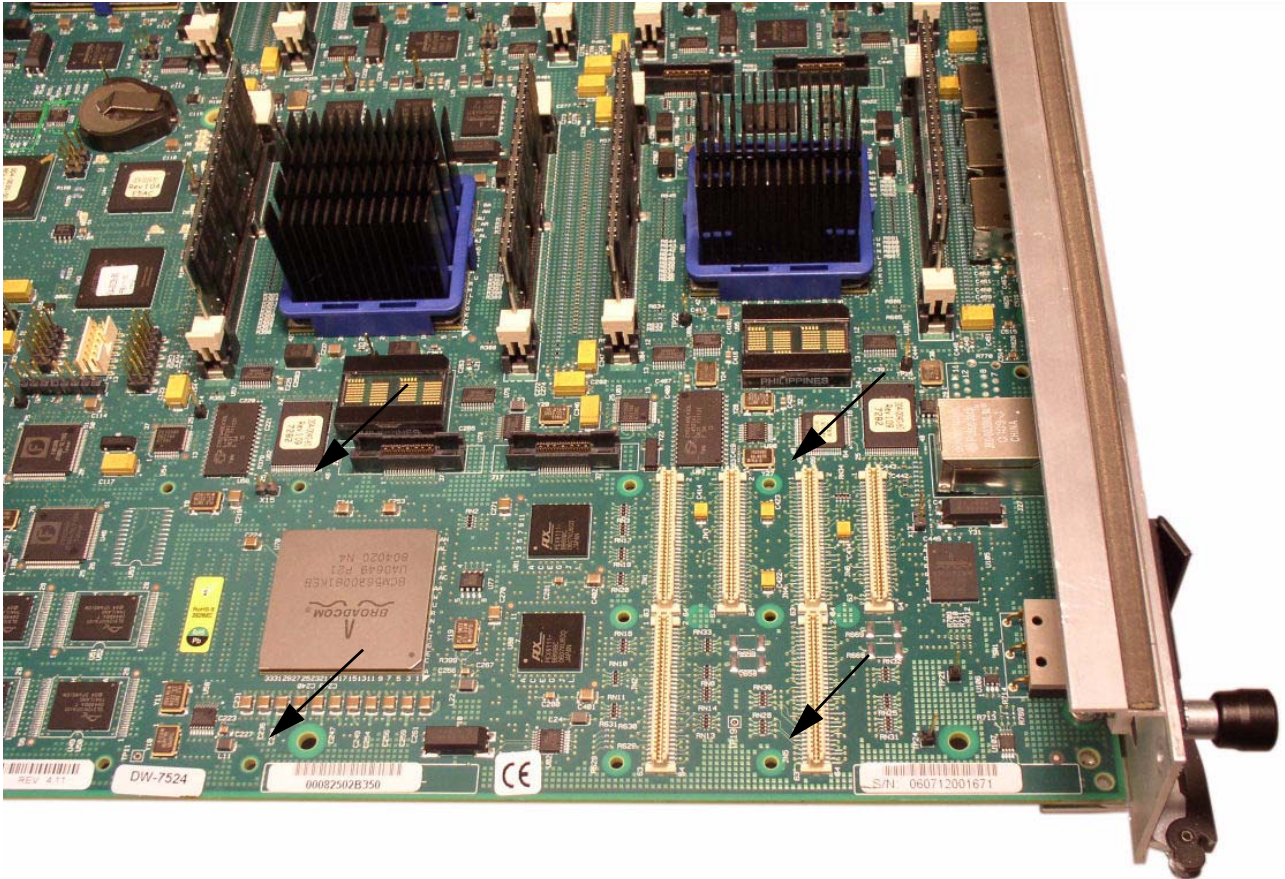


Note: If your SSM2 does not have a DIP switch, please continue to the SSM2 Installation section on the following page.

1. Note the region on the SPU where the SSM2 attaches. In the photograph below, the three SSM2 connectors are circled. The SSM2 plugs into place here.



2. Note the four holes in the SPU where you will mount the standoffs.



3. Hold one of the nylon Phillips head screws in your left hand between your thumb and index finger.

4. Place your left hand under the SPU on the side where the SSM2 is connected to the board, pivoting the SPU upward on it's right edge.

Midplane Connector

Place hand with
screw under this
area of SPU



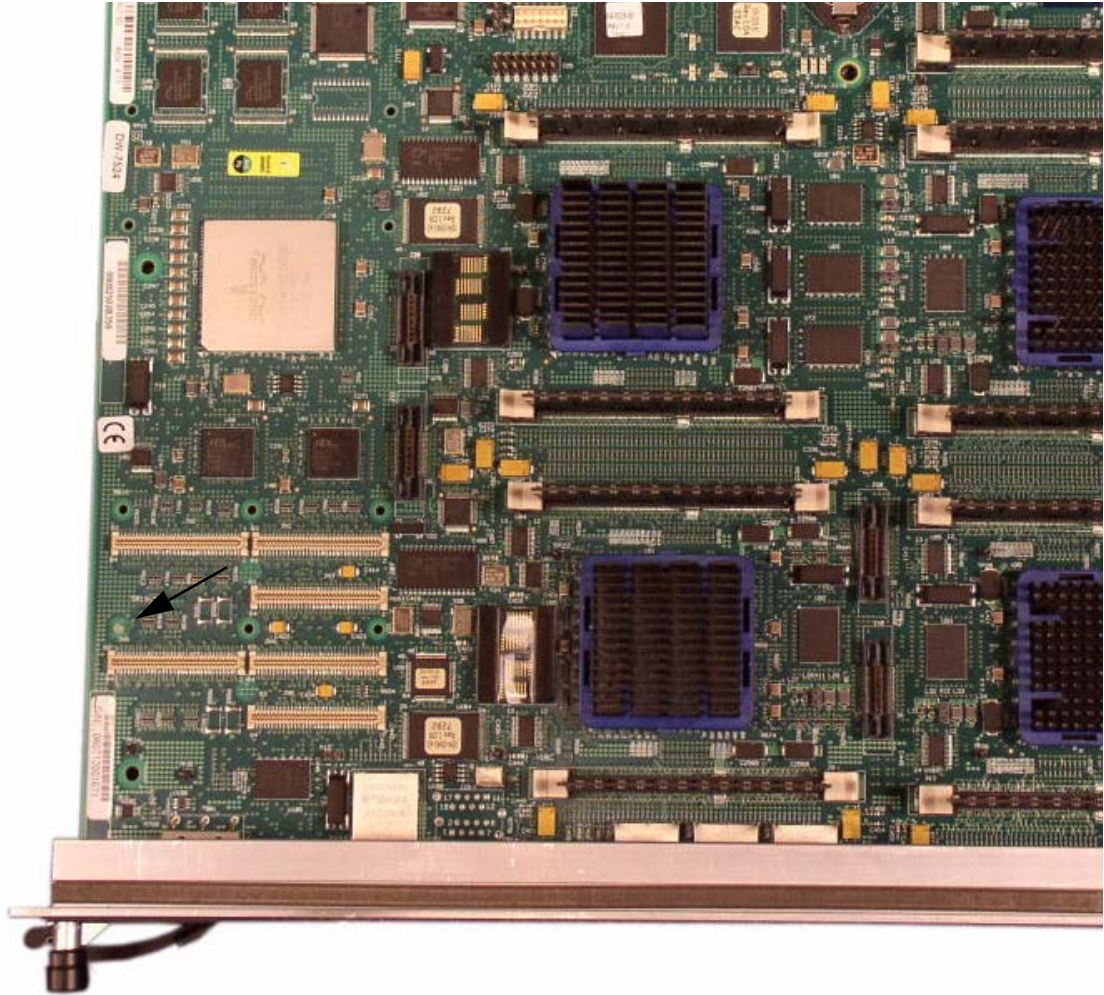
Pivot SPU
upward on this
edge

Front panel

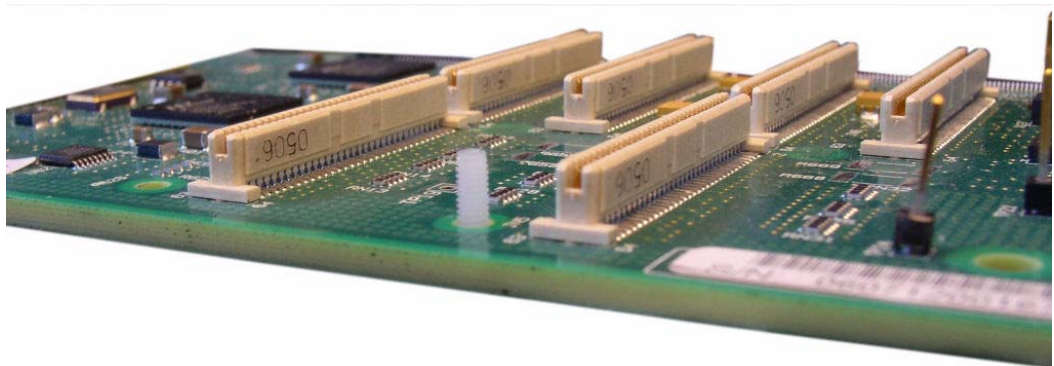
Caution

ALWAYS support the SPU so that it does not fall or slip.

5. Place the threads of the screw upward, through one of the four holes noted in Step 2.

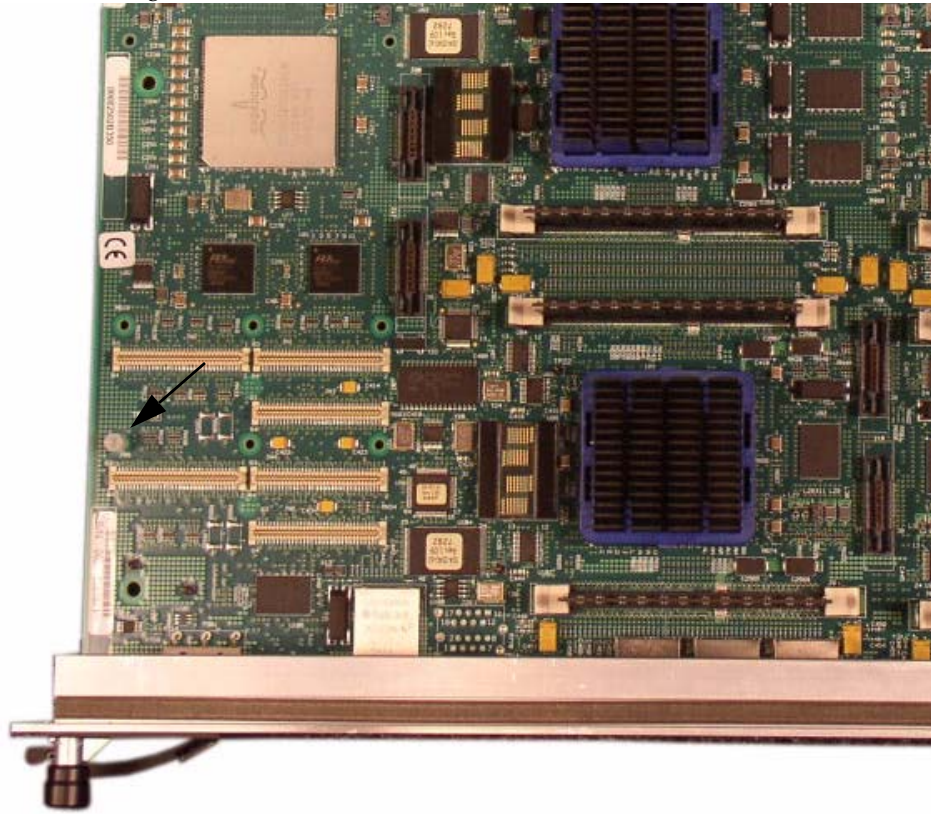


The following image shows a close up of the screw in the board.

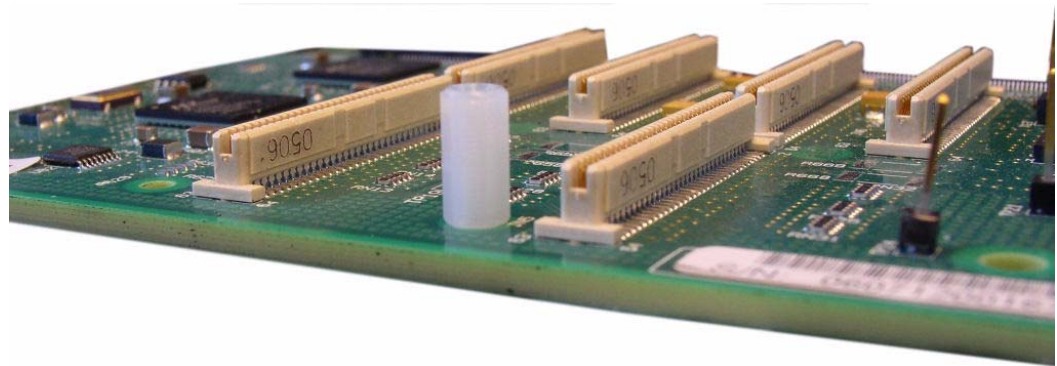


6. Screw one of the female-female nylon standoffs onto the threads of the screw.

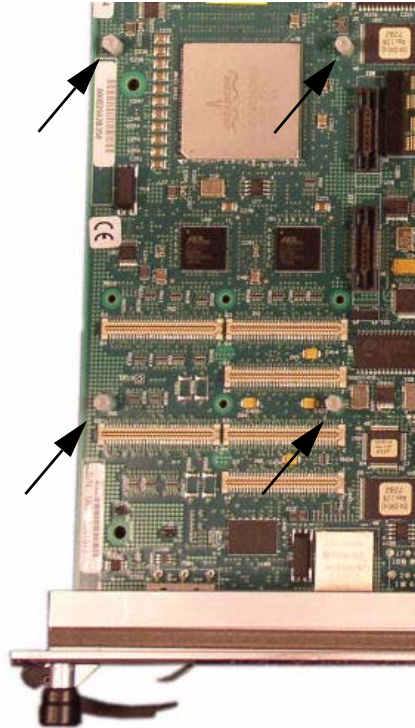
7. Tighten the standoff just more than hand-tight, using a 4.5 mm nut driver. Do not overtighten.



The following image shows a close up of the screw with standoff in the board.

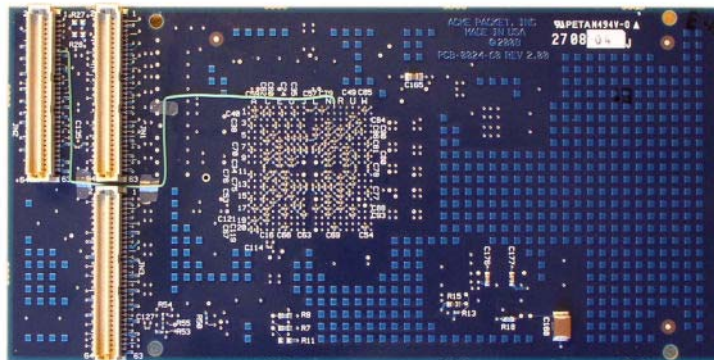


- Repeat Steps 3-7 for the remaining 3 screws and standoffs. The order of standoff/screw installation is unimportant.



At this point the four standoffs are secured to the SPU, ready to act as a secure mounting point for the SSM2.

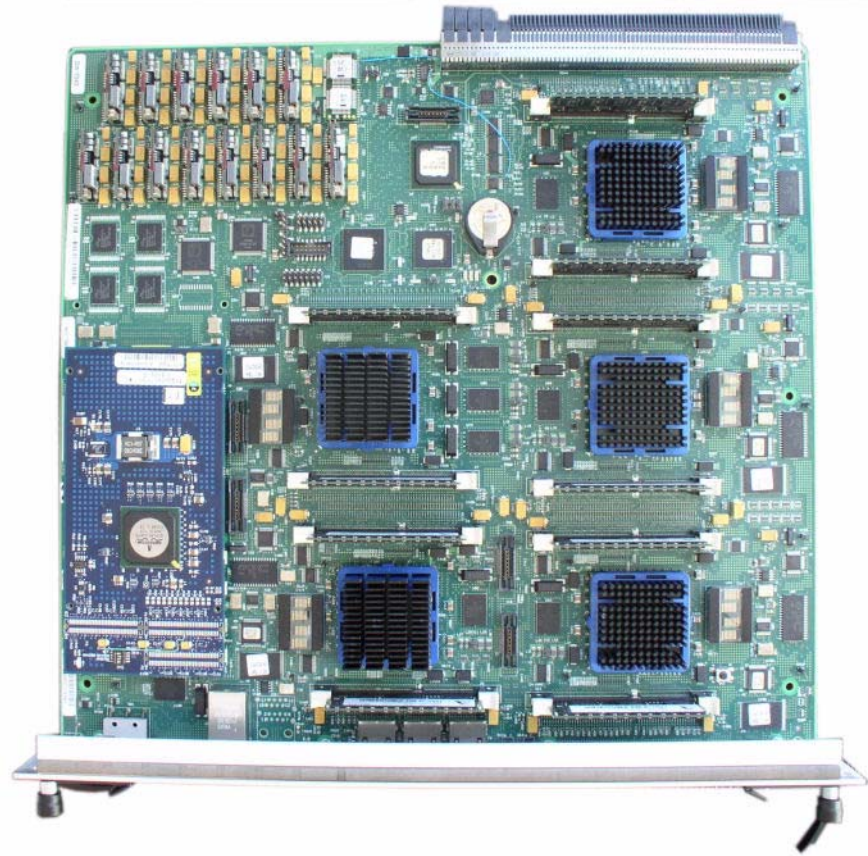
- Note the three board-to-board connectors on the SSM2 in the following photograph. This photograph shows the bottom of the SSM2 (placement of components may differ from the following image). When attaching the SSM2 to the SPU, these board-to-board connectors are seated in the set of connectors closer to the SPU's front panel.



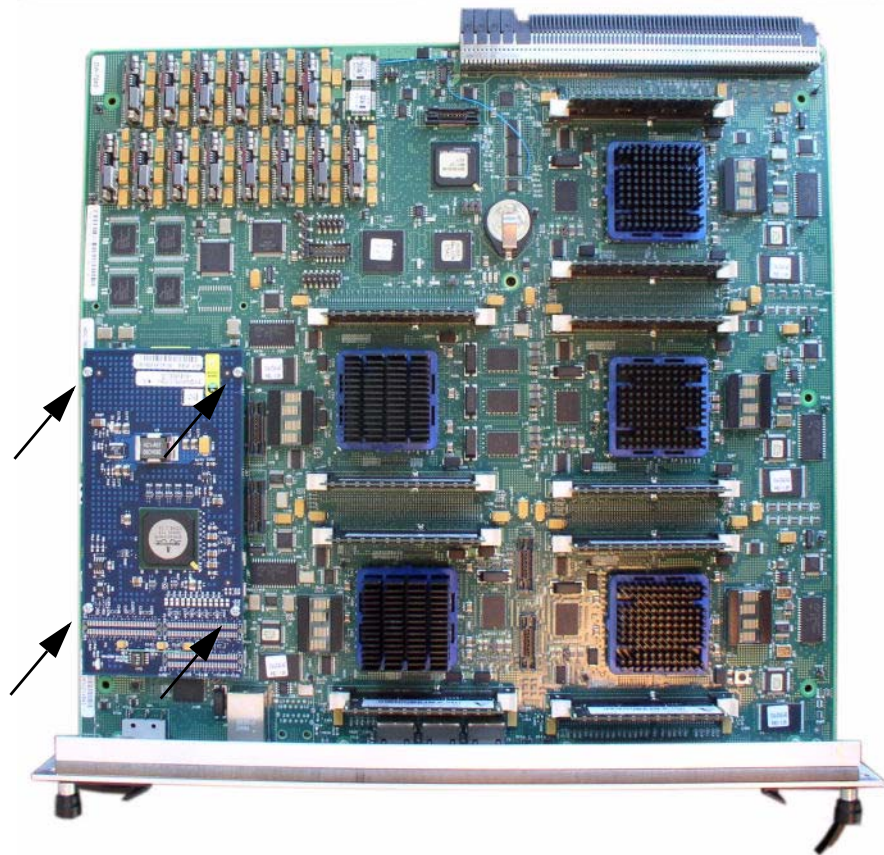
SSM2 Connectors

- Place the SSM2 on the SPU by mating the board-to-board connectors. Press down to seat the connectors until the SSM2 touches the standoffs.

11. Place the SSM2 on the SPU by mating the board-to-board connectors. The SSM2 lines up directly with four threaded stand-offs you just affixed to the SPU so you can screw the SSM2 to the chassis in the next step.



12. Screw the SSM2 on to the standoffs at four points with the supplied screws using a #1 Phillips head screwdriver. Do not overtighten the screws.



SPU Replacement

The SPU with SSM2 attached must be placed back into the chassis. The following steps illustrate the proper way to replace the SPU:

To replace a processing unit:

1. Insert the processing unit into the flared opening of the upper and lower slide rails.



The rails guide the processing unit to engage the mid-plane connector squarely.

2. Push the processing unit completely into the Net-Net 9200 chassis, until it is almost flush with the front face of the chassis.

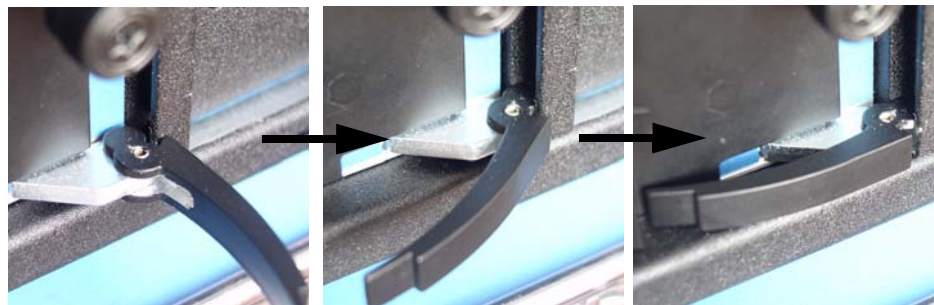


Make sure that the slide latches are pushed toward the center of the card before proceeding.

3. Swing the ejector levers so that they are perpendicular to the front face of the Net-Net 9200.

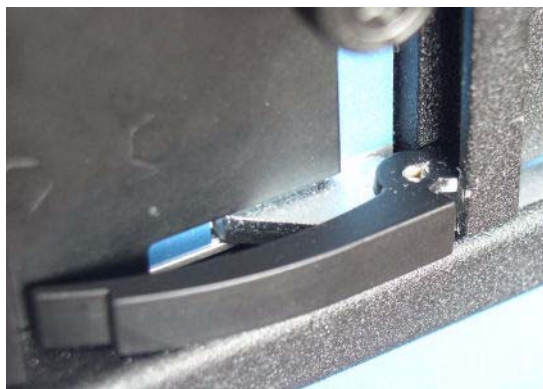


4. Pivot the ejector levers inward toward the mid plane, making sure that the notch on the outer side of each ejector lever catches the processing unit frame's front lip on the front of the chassis.



This action draws the processing unit fully into the chassis.

5. Push the ejector levers completely against the processing unit's front panel.



You will feel resistance when inserting processing units into the chassis from the EMI mesh gasket pressing on adjacent cards or on the chassis.

6. Slide the slide latches away from the center of the of the processing unit.



Each slide latch travels 0.28 inches (0.71 cm) before stopping.

Each slide latch covers the cut-out portion of the ejector levers:



7. Screw the thumb screws into the chassis with a #2 Phillips screwdriver. This

- creates the final connection between the processing unit and the chassis.



Redundant SSM2 Installation

Repeat the [SPU Removal \(7\)](#), [SSM2 Installation \(8\)](#), and [SPU Replacement \(17\)](#) sections of the redundant SSM2 in SPU #2 if applicable.

System Startup

You may now start up the Net-Net 9200 in the approved manner.

SSM2 Installation Verification

You can verify that you've installed the SSM2 card onto the SPU properly by executing the following command:

```
ACMEPACKET# show security tls status
```

```
-----  
secure hardware module: detected  
-----
```

Or you can also validate the SSM2 installation by running Net-Net 9200 System diagnostics. All versions from nnD_diags106.tar and higher include the appropriate tests for validating your SSM2. Please refer to the diagnostic's documentation for more information.