Installing a CPU Memory Upgrade in ASN and SN Platforms

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Bay Networks

Bay Networks

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Electromagnetic Emissions

Meets requirements of:

FCC Part 15, Class A
EN 55 022 (CISPR 22:1985), Class A <and Class B>
VCCI Class 1 ITE

Canada Requirements Only

Canada CS-03 Rules and Regulations

Note: The Canadian Department of Communications label identifies certified equipment. The certification means that the equipment meets certain telecommunications network protective operations and safety requirements. The Department does not guarantee the equipment will operate to the user's satisfaction.

Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. In some cases, the company's inside wiring associated with a single line individual service may be extended by means of a certified connector assembly (telephone extension cord). The customer should be aware that compliance with the above conditions may not prevent the degradation of service in some situations.

Repairs to certified equipment should be made by an authorized Canadian maintenance facility designated by the supplier. Any repairs or alterations made by the user to this equipment or equipment malfunctions, may give the telecommunications company cause to request the user to disconnect the equipment.

Users should ensure for their own protection that the electrical ground connections of the power utility, telephone lines and internal metallic water pipe system, if present, are connected together. This precaution may be particularly important in rural areas.

Caution: Users should not attempt to make such connections themselves, but should contact the appropriate electric inspection authority, or electrician, as appropriate.

Canada CS-03 -- Règles et règlements

Note: L’étiquette du ministère des Communications du Canada indique que l’appareillage est certifié, c’est-à-dire qu’il respecte certaines exigences de sécurité et de fonctionnement visant les réseaux de télécommunications. Le ministère ne garantit pas que l’appareillage fonctionnera à la satisfaction de l’utilisateur.

Avant d’installer l’appareillage, s’assurer qu’il peut être branché aux installations du service de télécommunications local. L’appareillage doit aussi être raccordé selon des méthodes acceptées. Dans certains cas, le câblage interne du service de télécommunications utilisé pour une ligne individuelle peut être allongé au moyen d’un connecteur certifié (prolongateur téléphonique). Le client doit toutefois prendre note qu’une telle installation n’assure pas un service parfait en tout temps.

Les réparations de l’appareillage certifié devraient être confiées à un service d’entretien canadien désigné par le fournisseur. En cas de réparation ou de modification effectuées par l’utilisateur ou de mauvais fonctionnement de l’appareillage, le service de télécommunications peut demander le débranchement de l’appareillage.

Pour leur propre sécurité, les utilisateurs devraient s’assurer que les mises à la terre des lignes de distribution d’électricité, des lignes téléphoniques et de la tuyauterie métallique interne sont raccordées ensemble. Cette mesure de sécurité est particulièrement importante en milieu rural.

Attention: Les utilisateurs ne doivent pas procéder à ces raccordements eux-mêmes mais doivent plutôt faire appel aux pouvoirs de réglementation en cause ou à un électricien, selon le cas.

Canada Requirements Only *(continued)*

D. O. C. Explanatory Notes: Equipment Attachment Limitations

The Canadian Department of Communications label identifies certified equipment. This certification meets certain telecommunication network protective, operational and safety requirements. The department does not guarantee the equipment will operate to the users satisfaction.

Before installing the equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. In some cases, the company's inside wiring associated with a single line individual service may be extended by means of a certified connector assembly (telephone extension cord). The customer should be aware that compliance with the above condition may not prevent degradation of service in some situations.

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Notes explicatives du ministère des Communications: limites visant les accessoires

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Pour leur propre sécurité, les utilisateurs devraient s'assurer que les mises à la terre des lignes de distribution d'électricité, des lignes téléphoniques et de la tuyauterie métallique interne sont raccordées ensemble. Cette mesure de sécurité est particulièrement importante en milieu rural.

Attention: Les utilisateurs ne doivent pas procéder à ces raccordements eux-mêmes mais doivent plutôt faire appel aux pouvoirs de réglementation en cause ou à un électricien, selon le cas.

Canada Requirements Only *(continued)*

Canadian Department of Communications Radio Interference Regulations

This digital apparatus (Access Feeder Node, Access Link Node, Access Node, Access Stack Node, Backbone Concentrator Node, Backbone Concentrator Node Switch, Backbone Link Node, Backbone Link Node Switch, Concentrator Node, Feeder Node, Link Node, Switch Node) does not exceed the Class A limits for radio-noise emissions from digital apparatus as set out in the Radio Interference Regulations of the Canadian Department of Communications.

Règlement sur le brouillage radioélectrique du ministère des Communications

Cet appareil numérique (Access Feeder Node, Access Link Node, Access Node, Access Stack Node, Backbone Concentrator Node, Backbone Concentrator Node Switch, Backbone Link Node, Backbone Link Node Switch, Concentrator Node, Feeder Node, Link Node, Switch Node) respecte les limites de bruits radioélectriques visant les appareils numériques de classe A prescrites dans le Règlement sur le brouillage radioélectrique du ministère des Communications du Canada.

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About This Guide

This guide describes how to upgrade memory in an Access Stack Node (ASN™) or Switch Node™ (SN™) platform. Chapter 1 describes the upgrade procedure for the ASN; Chapter 2 describes the upgrade procedure for the SN.

The kit contents are similar whether you are upgrading the memory in an ASN or SN. Check the shipment contents, referring to the table.

Memory Upgrade Options and Shipment Contents

DRAM Upgrade	Upgrade Kit	Kit Contains
8 MB	Order No. AF0011003 (ASN only)	2 DRAM SIMMs 1 Tag SIMM 2 8-MB UPGRD labels
16 MB	Order No. AF0011004 (ASN 4-MB to 16-MB upgrade only; SN 16-MB memory replacement)	2 DRAM SIMMs 1 Tag SIMM 2 16-MB UPGRD labels
16 MB	Order No. 50027 (ASN 8-MB to 16-MB upgrade only; no Tag SIMM required)	2 DRAM SIMMS 2 16-MB UPGRD labels
32 MB	Order No. AF0011005 (ASN and SN)	2 DRAM SIMMs 1 Tag SIMM 2 32-MB UPGRD labels

If any parts are damaged or missing, contact the Bay Networks Technical Support Center in your area. (Refer to “How to Get Help,” later in this section.)

Conventions

italic text	Indicates variable values in command syntax descriptions, new terms, file and directory names, and book titles.
quotation marks (“ ”)	Indicate the title of a chapter or section within a book.

Acronyms

ASN	Access Stack Node
DRAM	dynamic random access memory
SIMM	single inline memory module
SN	Switch Node

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Chapter 1
Installing a CPU Memory Upgrade in the ASN

This chapter describes how to install a CPU memory upgrade in a Bay Networks® Access Stack Node (ASN). After you review the ASN SIMM types and attach the antistatic wrist strap, you will need a Phillips screwdriver to complete the following steps:

1. Removing the ASN component tray
2. Removing DRAM SIMMs
3. Installing DRAM SIMMs
4. Removing the Tag SIMM
5. Installing the Tag SIMM
6. Labeling the ASN
7. Replacing the ASN component tray

Danger: Due to high-energy hazards, only qualified service personnel are permitted to install or replace components in an ASN.

Reviewing the SIMM Types

The ASN uses SIMMs to provide

- Dynamic random access memory (DRAM).
- Tag memory, which adds a protection tag to individual memory locations. For example, a memory location might be tagged with write protection.

The ASN supports configurations of 8, 16, and 32 MB of DRAM. Table 1-1 shows the DRAM SIMM requirements for each configuration.

Table 1-1. DRAM Configurations in the ASN

Configuration	SIMM Capacity	Number of SIMMs
8 MB	1 MB by 36	2
16 MB	2 MB by 36	2
32 MB	4 MB by 36	2

The capacity of the SIMM you use for Tag memory depends on the DRAM configuration. Table 1-2 shows the Tag SIMM requirements for each configuration.

Table 1-2. Tag SIMM Requirements

DRAM Configuration	Tag SIMM Capacity
8 or 16 MB	1 MB by 8
32 MB	4 MB by 8

If you upgrade the DRAM, be sure to use the appropriate Tag SIMM.

Note: Order No. 50027 does not require a Tag SIMM replacement.

Attaching the Antistatic Wrist Strap

You must wear an antistatic wrist strap whenever you remove, install, or handle a SIMM.

Caution: Electrostatic discharge can damage hardware. Follow the procedure in this section to protect your equipment from damage.

To attach the antistatic wrist strap:

1. **Remove the strap, alligator clip, and cable from the package.**
2. **Attach (snap) the snap end of the cable to the wrist strap.**
3. **Place the strap around your wrist, and adjust the strap to ensure that the metal buckle inside the strap touches your skin.**
4. **Plug the jack at the other end of the cable into the opening on the alligator clip.**
5. **Attach the alligator clip to any unpainted metal surface on the component tray.**

Removing the ASN Component Tray

Before you can upgrade memory in the ASN, you must remove the component tray from the ASN chassis. To remove the ASN component tray:

1. **Turn off the ASN, and detach all cables from the back panel.**
2. **Using a Phillips screwdriver, loosen the two captive screws that fasten the tray to the chassis (Figure 1-1).**
3. **Pull the two captive screws and gently slide the tray out of the chassis.**

   Make sure to hold the sides and bottom of the tray to support it; try to keep the tray level as you slide it out.
4. **Place the tray on a sturdy work surface.**

Caution: Do not touch any components or modules in the ASN until you have attached the antistatic wrist strap. Refer to the section “Attaching the Antistatic Wrist Strap.”

The net module ports are exposed at the back of the component tray. To perform maintenance tasks on the ASN components, face the back of the tray.

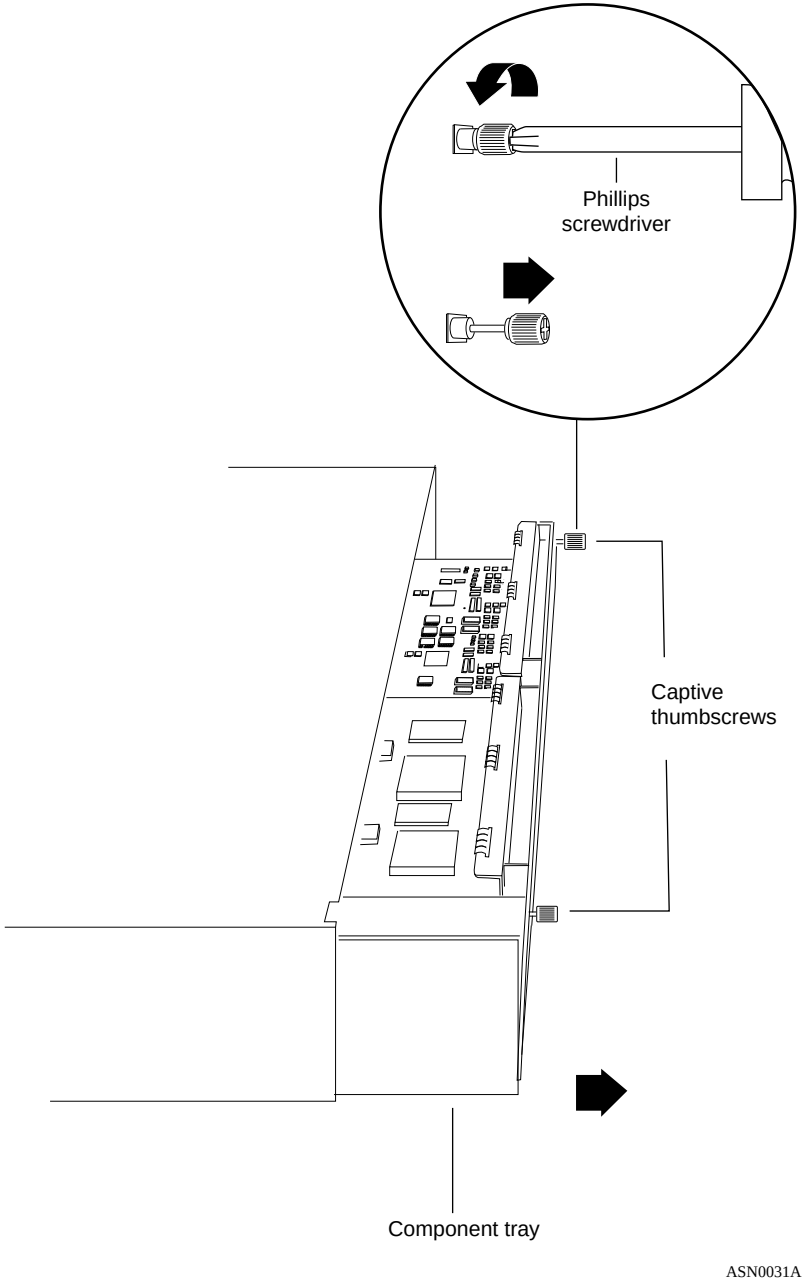

Figure 1-1. Removing the ASN Component Tray

Removing DRAM SIMMs

You may need to remove DRAM SIMMs if you are upgrading the ASN memory configuration (Figure 1-2). You must first remove the SIMM closest to the front of the tray. (Remember, the back of the tray is where the net module ports are exposed.)

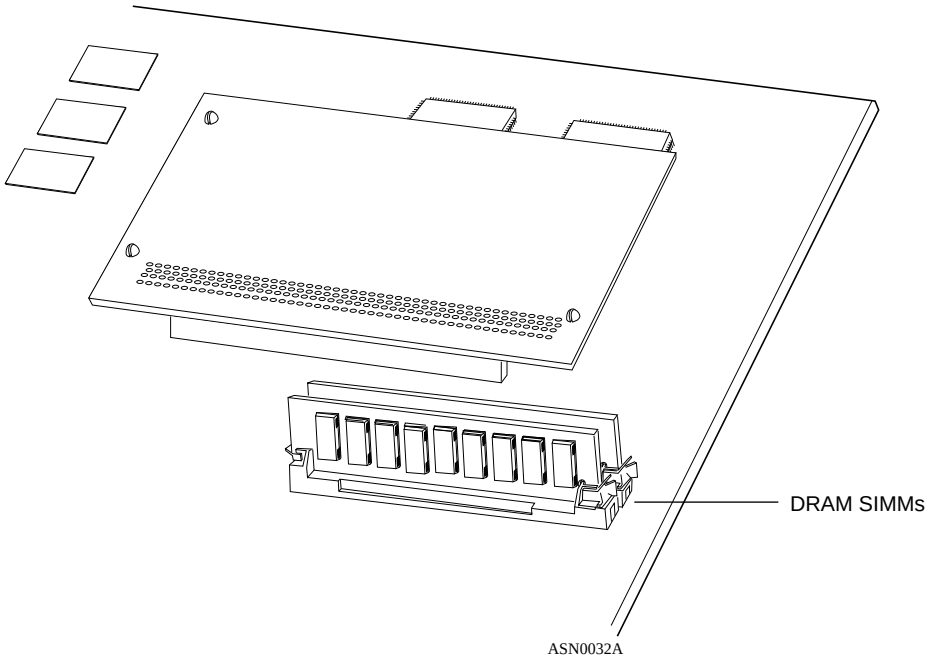

Figure 1-2. Locating the DRAM SIMMs

To remove a DRAM SIMM:

1. **Press down the locking tab on each side of the SIMM to release it from the connector.**

   The SIMM tilts back at a slight angle toward the front of the tray (Figure 1-3).

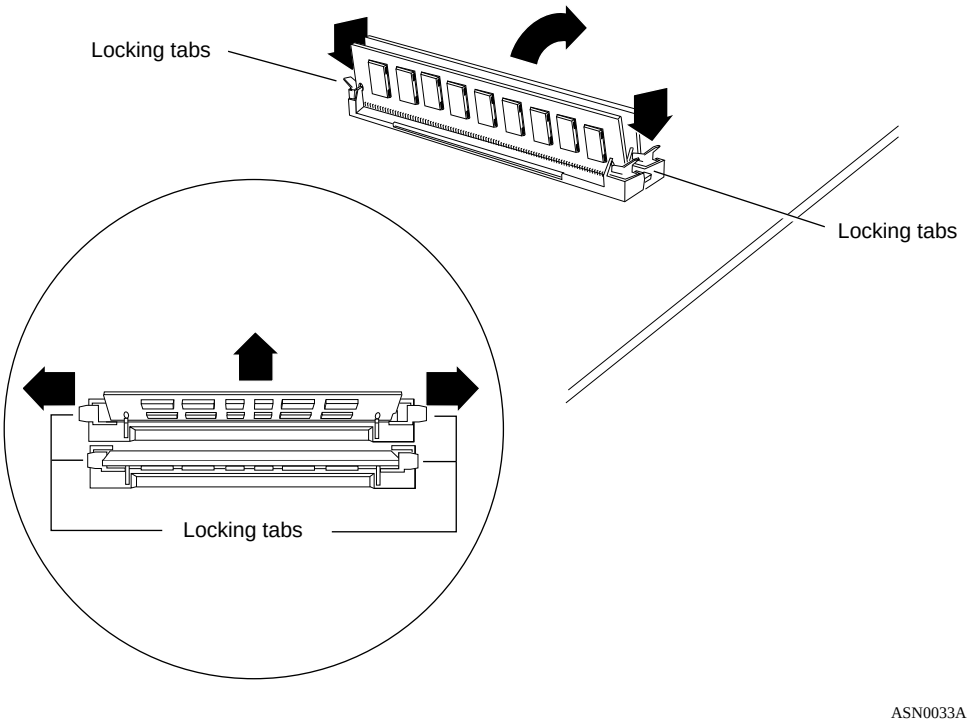

Figure 1-3. Releasing the DRAM SIMM

2. **Grasp the top corners of the SIMM and pull it up and out of the connector.**

Installing DRAM SIMMs

When you install DRAM SIMMs, make sure that the SIMMs are the same size. For example, you can install two 2-MB by 36 SIMMs for a 16-MB configuration; however, do not install one 1-MB by 36 and one 2-MB by 36 SIMM.

Also, make sure that you are using the correct capacity Tag SIMM for your DRAM configuration (refer to Table 1-2).

You must first install the SIMM closest to the back of the component tray.

To install a DRAM SIMM:

1. **Grasp the SIMM by the top corners, and place it into the connector at a slight angle.**

   The SIMM is keyed to fit in the connector only one way (Figure 1-4).

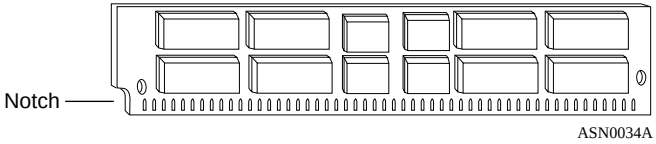

Figure 1-4. Orientation of DRAM SIMM

2. **Push the SIMM toward the back of the tray until the locking tabs snap into place (Figure 1-5).**

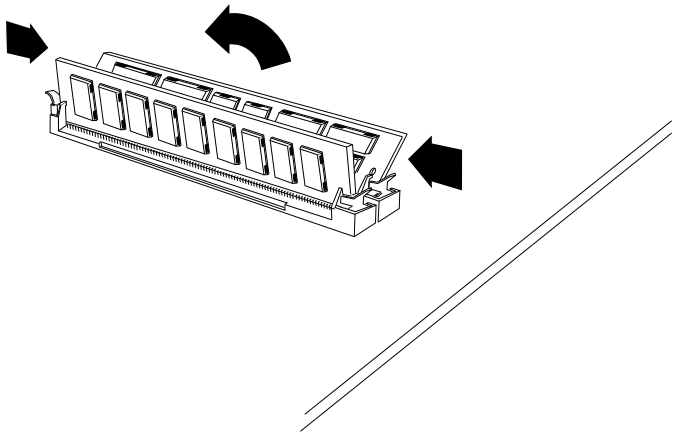

Figure 1-5. Installing the DRAM SIMM

Removing the Tag SIMM

You need to replace the Tag SIMM (Figure 1-6) if you are upgrading the ASN DRAM configuration to 32 MB. Table 1-2, shown earlier, lists the Tag SIMM requirements for the different DRAM configurations.

Note: You do not need to replace the Tag SIMM if you are upgrading the DRAM configuration to 8 MB or 16 MB.

To remove the Tag SIMM:

1. **Attach the antistatic wrist strap and remove the component tray, as described earlier in this chapter.**

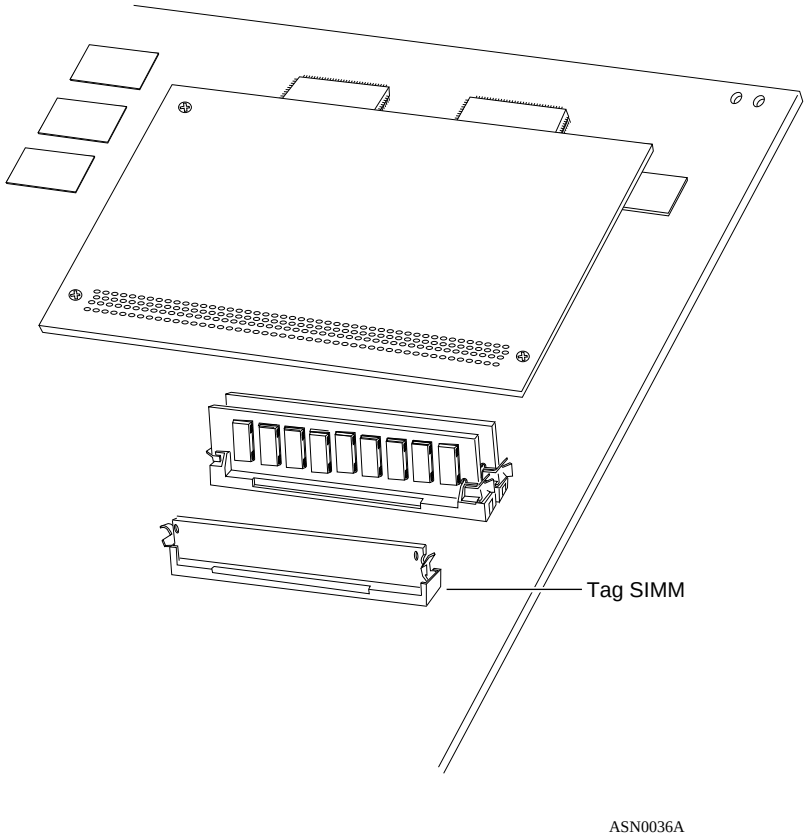

Figure 1-6. Locating the Tag SIMM

2. **Press down the locking tab on each side of the SIMM to release it from the connector (Figure 1-7).**

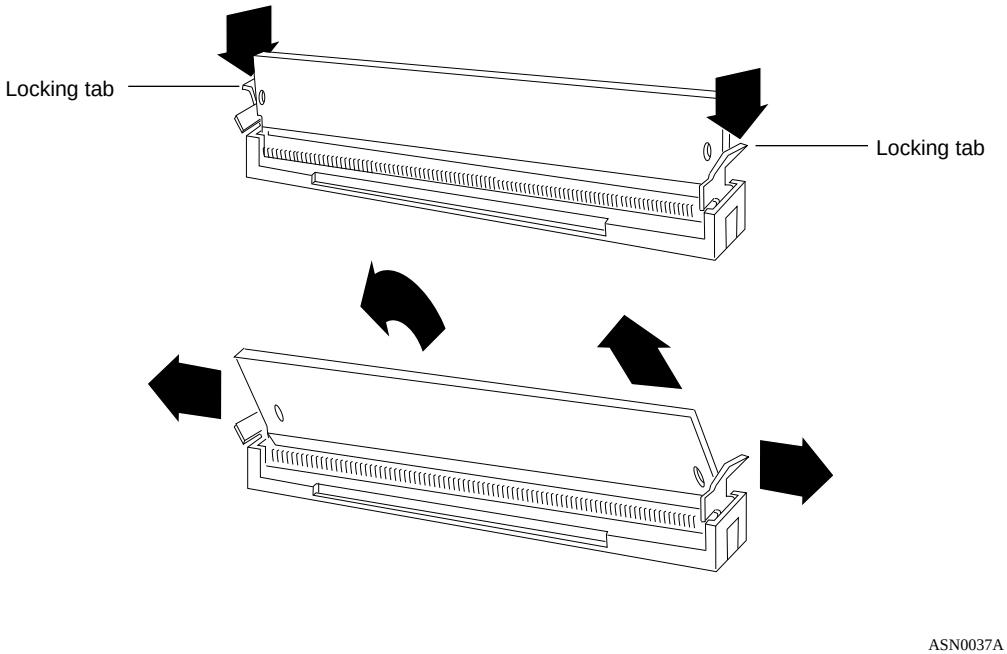

Figure 1-7. Releasing the Tag SIMM

3. **Grasp the top corners of the SIMM and gently pull it toward you at a slight angle. The SIMM naturally positions itself at an angle as you pull it.**
4. **Lift the SIMM out of the connector.**

Installing the Tag SIMM

Before you perform this procedure, be sure to attach the antistatic wrist strap, as described earlier in this chapter.

To install the Tag SIMM:

1. **Grasp the SIMM by the top corners and place it into the connector at a slight angle (Figure 1-8).**

   The SIMM is keyed to fit in the connector only one way.

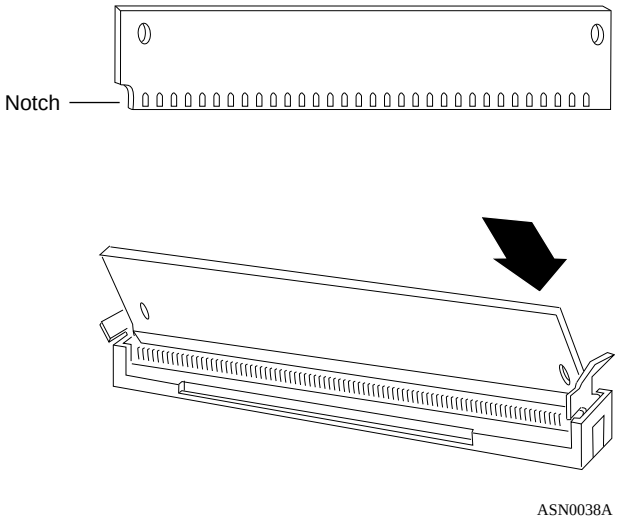

Figure 1-8. Installing the Tag SIMM

2. **Push the SIMM away from you until the locking tabs snap into place.**

Labeling the ASN

After you perform the DRAM SIMM upgrade, label the ASN rear panel and the ASN CPU with the Memory Size labels provided in the kit. Affixing the new labels is important because future repairs and upgrades will require that you correctly identify the memory configuration of your ASN.

To label your ASN:

1. **Identify the existing Order Number label by looking at the rear panel of the ASN (Figure 1-9).**

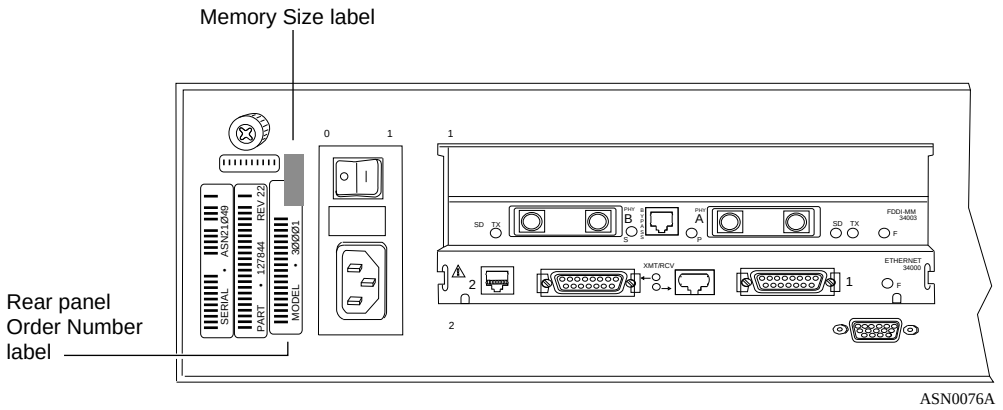

Figure 1-9. Rear Panel Labels on the ASN

2. **Apply the Memory Size label at the end of the Order Number label, making sure that you do not cover any portion of the bar code (refer to Figure 1-9).**

3. **Find the Part Number label on the ASN CPU (Figure 1-10).**

   The Part Number label will read 110341-*xx* (ASN), 107072-*xx* (ASN), or 112842-*xx* (ASN2).

4. **Apply the other Memory Size label to the CPU as follows:**
   - On an ASN CPU (110341-*xx* or 107072-*xx*), apply the label to the right of the CPU Part Number label (Figure 1-10).
   - On an ASN2 CPU (112842-*xx*), apply the label below the CPU Part Number label, near the edge of the CPU (Figure 1-10).

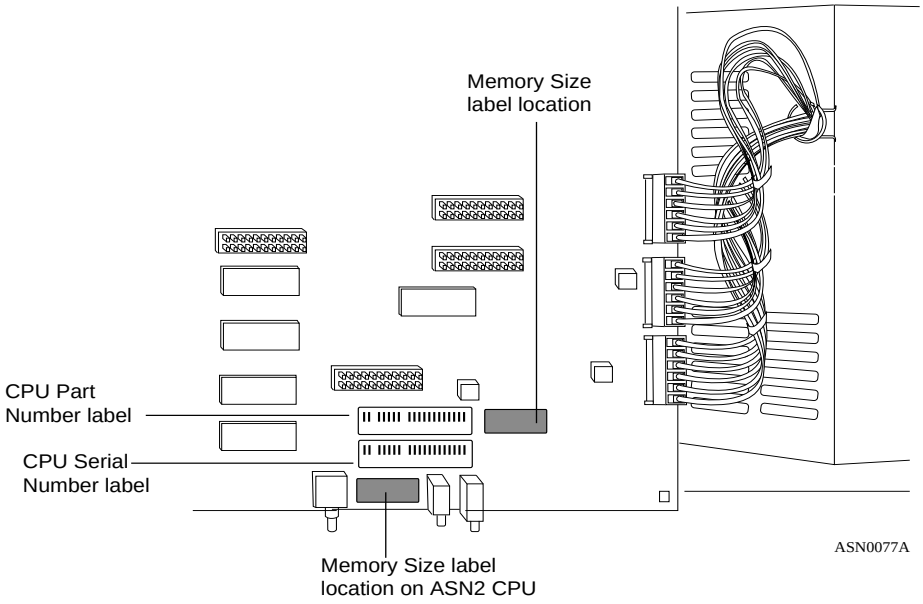

Figure 1-10. Label Locations on ASN CPU

Replacing the ASN Component Tray

To replace the ASN component tray:

1. **Gently slide the tray into the chassis.**
2. **Using a Phillips screwdriver, tighten the two captive screws that fasten the tray to the chassis (refer to Figure 1-1).**
3. **Reattach the cables to the proper connectors on the back panel.**
4. **Turn on the ASN.**

Chapter 2
Installing a CPU Memory Upgrade in the SN

This chapter describes how to install a CPU memory upgrade in a Bay Networks Switch Node (SN). After you review the SN SIMM types and attach the antistatic wrist strap, you will need a flat-tip screwdriver to complete the following steps:

1. Removing the SN CPU module
2. Removing DRAM SIMMs
3. Installing DRAM SIMMs
4. Removing the Tag SIMM
5. Installing the Tag SIMM
6. Labeling the SN
7. Replacing the SN CPU module

Reviewing the SIMM Types

The SN uses SIMMs to provide the following:

- Dynamic random access memory (DRAM).
- Tag memory, which adds a protection tag to individual memory locations. For example, a memory location might be tagged with write protection.

The SN supports configurations of 16 and 32 MB of DRAM. Table 2-1 shows the DRAM SIMM requirements for each configuration.

Table 2-1. DRAM Configurations in the SN

Configuration	SIMM Capacity	Number of SIMMs
16 MB	2 MB by 36	2
32 MB	4 MB by 36	2

The capacity of the SIMM you use for Tag memory depends on the DRAM configuration. Table 2-2 shows the Tag SIMM requirements for each configuration.

Table 2-2. Tag SIMM Requirements

DRAM Configuration	Tag SIMM Capacity
16 MB	1 MB by 8
32 MB	4 MB by 8

If you upgrade the DRAM, be sure to use the appropriate Tag SIMM.

Attaching the Antistatic Wrist Strap

You must wear an antistatic wrist strap whenever you remove, install, or handle a SIMM.

Caution: Electrostatic discharge can damage hardware. Follow the procedure in this section to protect your equipment from damage.

To attach the antistatic wrist strap:

1. **Remove the strap, alligator clip, and cable from the package.**
2. **Attach (snap) the snap end of the cable to the wrist strap.**
3. **Place the strap around your wrist, and adjust the strap to ensure that the metal buckle inside the strap touches your skin.**

4. **Plug the jack at the other end of the cable into the opening on the alligator clip.**
5. **Attach the alligator clip to any unpainted metal surface on the chassis.**

Removing the Switch Node CPU Module

To remove the SN CPU module:

1. **Turn off the Switch Node.**
2. **Disconnect any modem and console cables that are attached to the CPU module.**
3. **Remove the flash memory card from the PCMCIA slot by pressing the eject button to the right of the slot (Figure 2-1).**
4. **Using a flat-tip screwdriver, loosen the captive retaining screws.**
5. **Press the module levers down so that they are parallel to the front of the module.**

   You will feel the module disconnect from the Switch Node midplane.
6. **Pull the captive retaining screws toward you to pull the module partially out of the chassis. Grasp the module by its edges to remove it from the chassis.**
7. **Place the module on an antistatic work surface.**

Caution: Do not touch any components or modules in the Switch Node until you have attached the antistatic wrist strap. Refer to the section “Attaching the Antistatic Wrist Strap.”

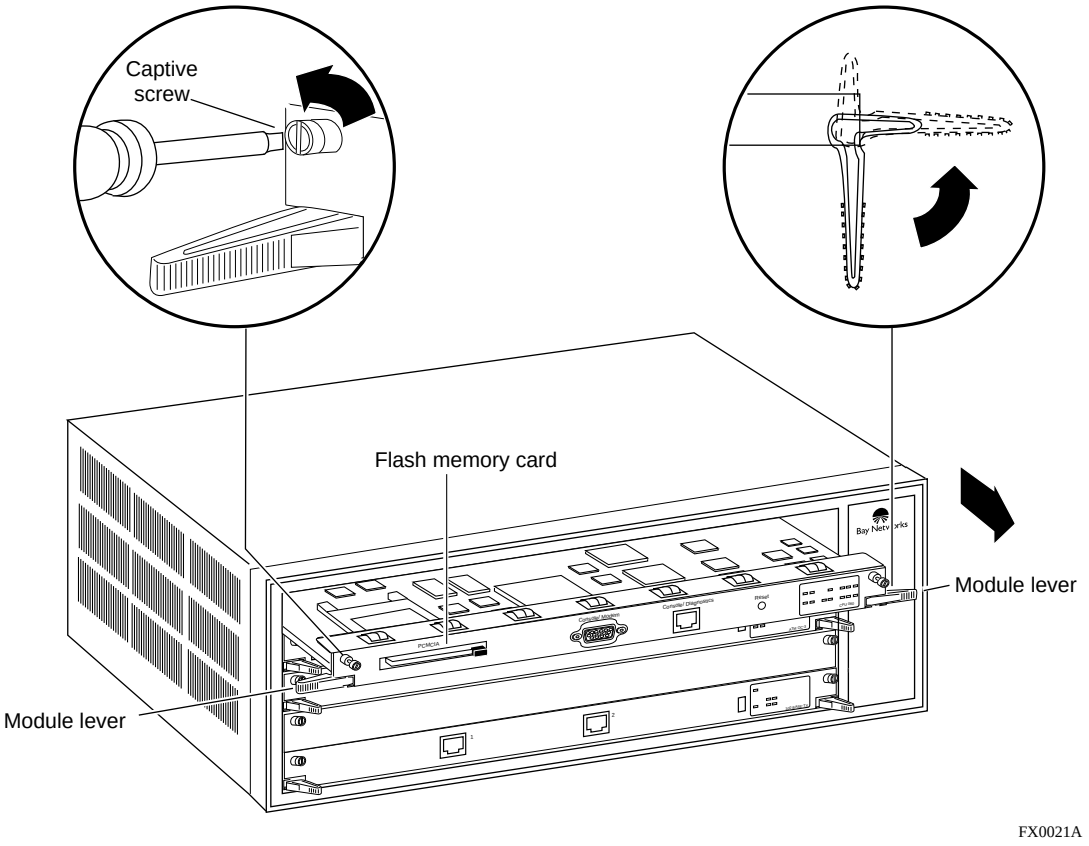

Figure 2-1. Removing the Switch Node CPU Module

Removing DRAM SIMMs

You may need to remove DRAM SIMMs if you are upgrading the SN memory configuration (Figure 2-2).

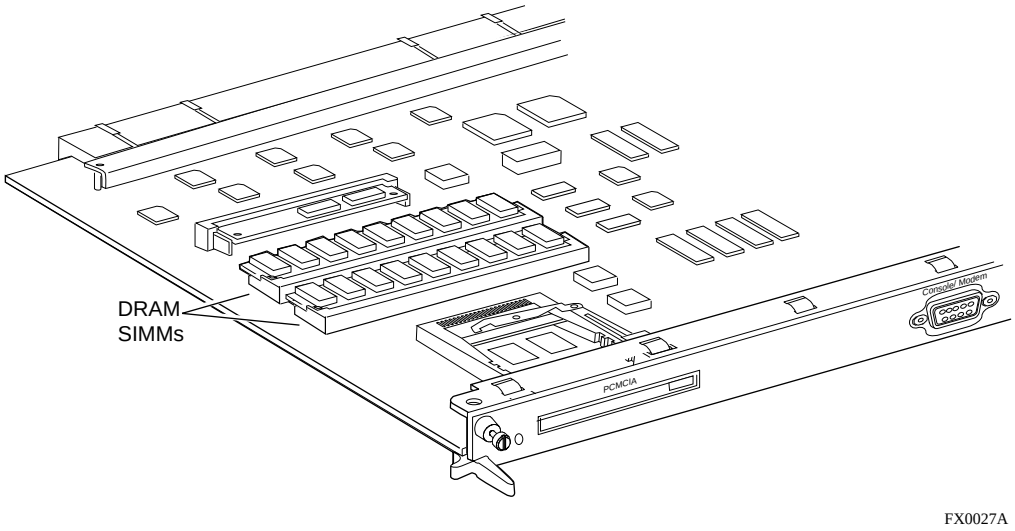

Figure 2-2. Locating the DRAM SIMMs

To remove a DRAM SIMM:

1. **Press down the locking tab on each side of the SIMM.**

   The SIMM tilts back at a slight angle (Figure 2-3).

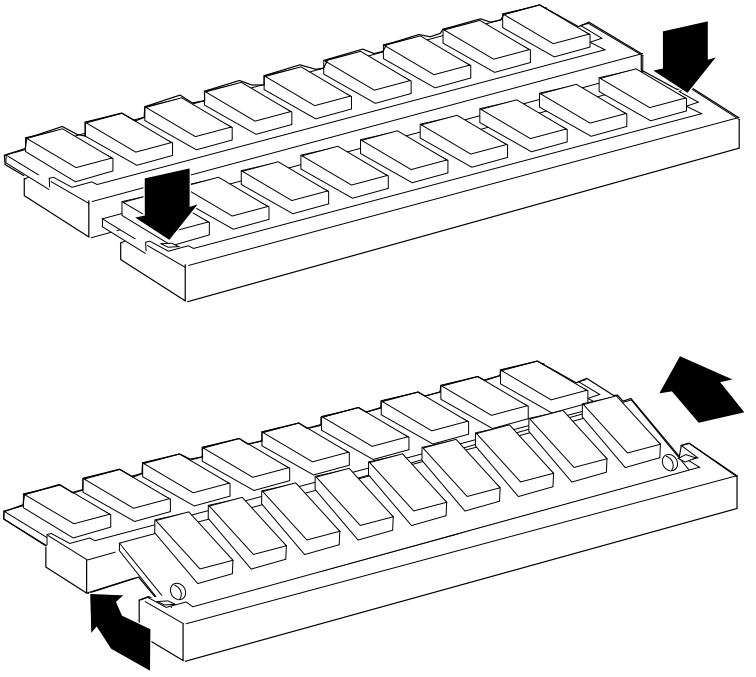

Figure 2-3. Releasing the DRAM SIMM

2. **Grasp the top corners of the SIMM and pull it up and out of the connector.**

Installing DRAM SIMMs

When you install DRAM SIMMs, make sure that the SIMMs are the same size. For example, you can install two 2-MB by 36 SIMMs for a 16-MB configuration; however, do not install one 1-MB by 36 and one 2-MB by 36 SIMM.

Also, make sure that you are using the correct capacity Tag SIMM for your DRAM configuration (refer to Table 2-2).

You must first install the SIMM closest to the back of the CPU.

To install a DRAM SIMM:

1. **Grasp the SIMM by the top corners, and place it into the connector at a slight angle.**

   The SIMM is keyed to fit in the connector only one way (Figure 2-4).

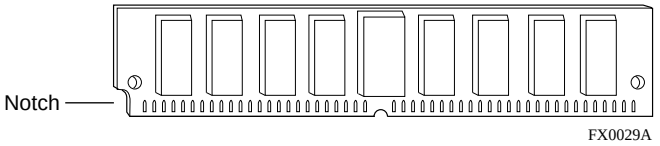

Figure 2-4. Orientation of DRAM SIMM

2. **Push down on the SIMM until the locking tabs snap into place (Figure 2-5).**

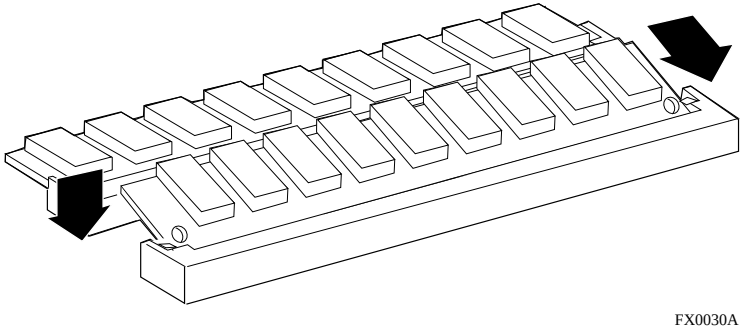

Figure 2-5. Installing the DRAM SIMM

Removing the Tag SIMM

You need to replace the Tag SIMM (Figure 2-6) if you are upgrading the SN DRAM configuration to 32 MB. Table 2-2, shown earlier, lists the Tag SIMM requirements for the different DRAM configurations.

To remove the Tag SIMM:

1. **Attach the antistatic wrist strap and remove the CPU, as described earlier in this chapter.**

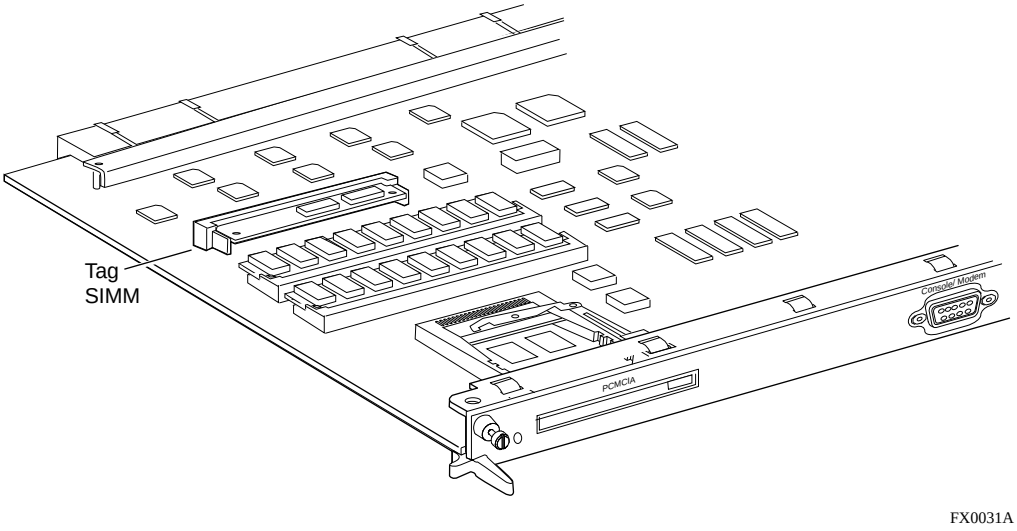

Figure 2-6. Locating the Tag SIMM

2. **Spread the locking tabs on the sides of the SIMM to release it from the connector (Figure 2-7).**

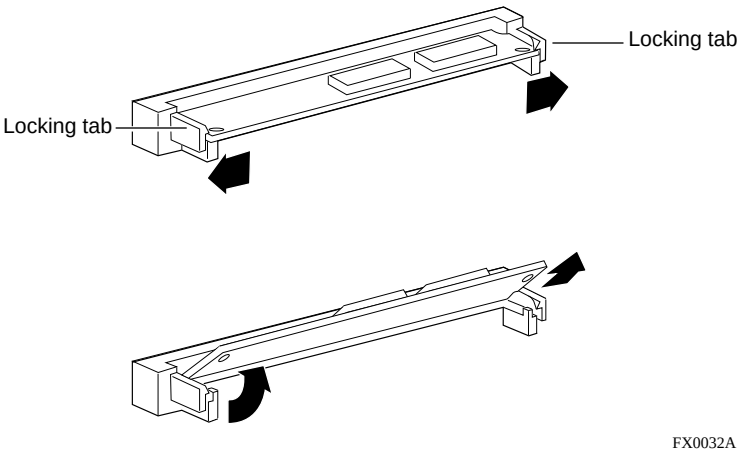

Figure 2-7. Releasing the Tag SIMM

3. **Lift the SIMM out of the connector.**

Installing the Tag SIMM

Before you perform this procedure, be sure to attach the antistatic wrist strap, as described earlier in this chapter.

To install the Tag SIMM:

1. **Grasp the SIMM by the top corners and place it into the connector at a slight angle (Figure 2-8).**

   The SIMM is keyed to fit in the connector only one way.

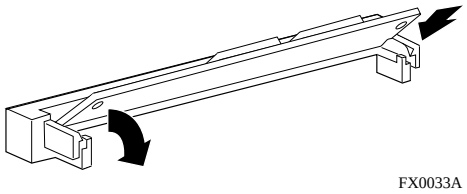

Figure 2-8. Installing the Tag SIMM

2. **Push down on the SIMM until the locking tabs snap into place.**

Labeling the Switch Node

After you perform the DRAM SIMM upgrade, label the SN CPU with a new Memory Size label. Affixing the new label is important because future repairs and upgrades will require that you correctly identify the current memory configuration of your SN.

To label your SN:

1. **Find the CPU Part Number label on the SN CPU (Figure 2-9).**

   The CPU Part Number label will read 114252-16 or 114252-32.

2. **Apply the Memory Size label to the end of the CPU Part Number label, making sure that you do not cover any portion of the bar code.**

   The Memory Size label should be next to the component reference designator C36 (Figure 2-9).

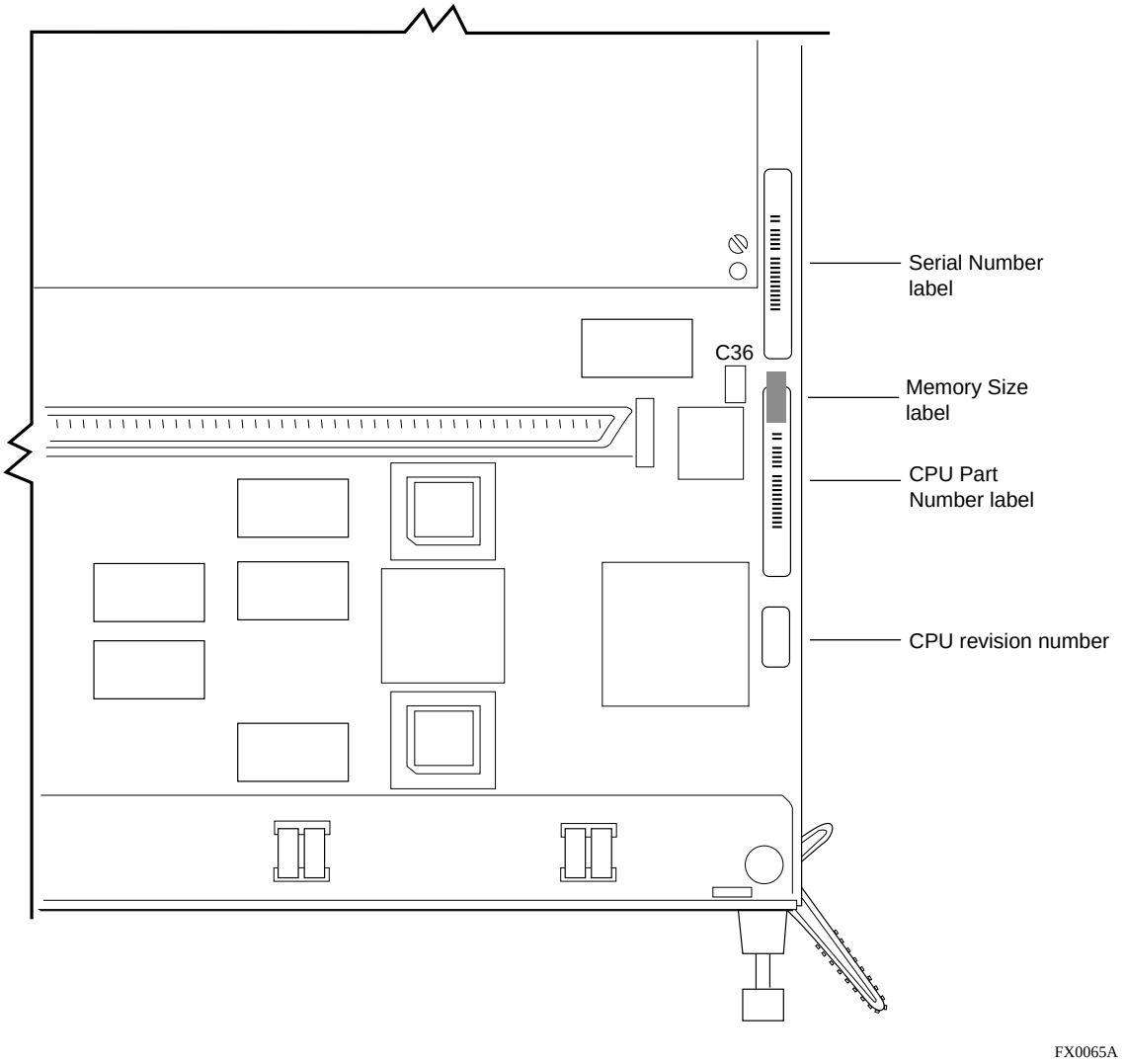

Figure 2-9. Part Number Label on the SN CPU

Replacing the Switch Node CPU Module

To replace the SN CPU module:

1. **Make sure the module levers are parallel to the front of the module.**
2. **Hold the CPU and align the sides of the module to the guides in the CPU slot (Figure 2-10).**

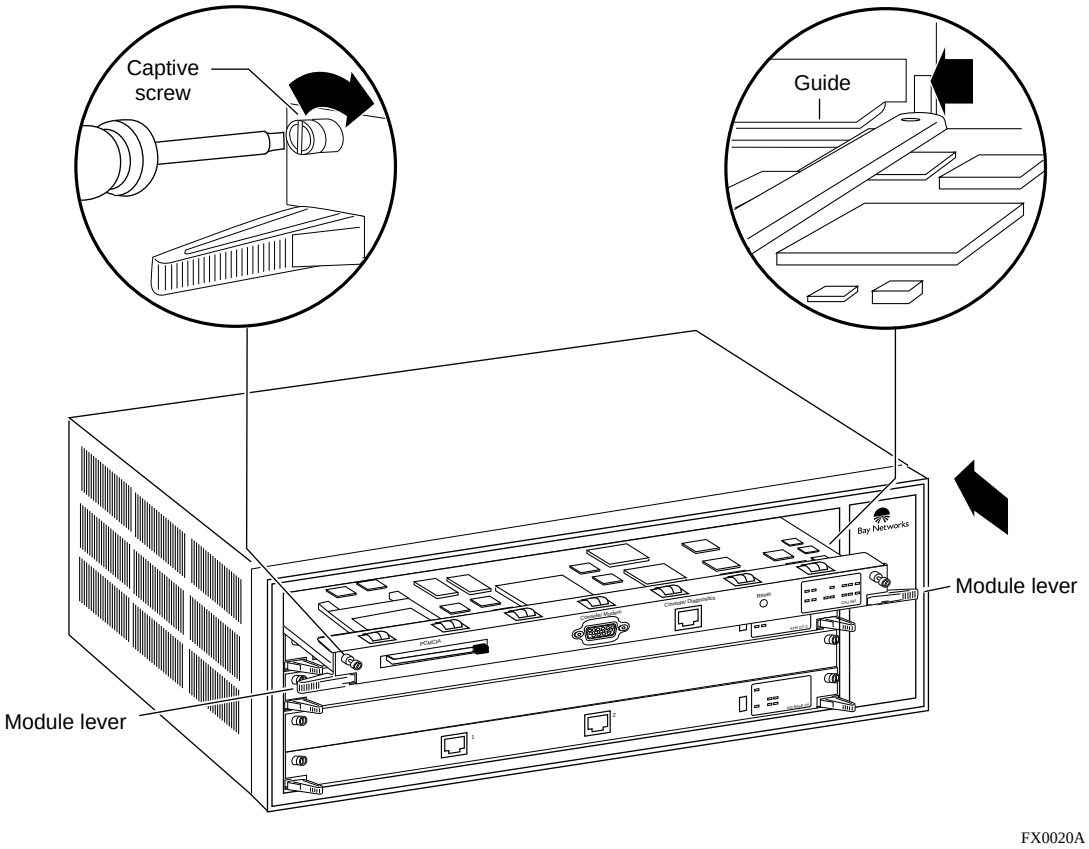

Figure 2-10. Replacing the Switch Node CPU Module

3. **Insert the module into the chassis until you feel resistance, then press firmly to make the connection with the Switch Node midplane.**

   The module levers will automatically swing slightly forward when the module is in position.

4. **Firmly push the levers inward (so that they are pointed toward you) to fully engage the locking mechanism (refer to Figure 2-10).**

5. **Using a flat-tip screwdriver, tighten the two captive retaining screws on the front of the CPU module.**

6. **Turn on the Switch Node.**

7. **Observe the CPU module LEDs to determine whether the module is functioning properly.**

   Refer to *Installing and Maintaining the Switch Node Platform* for information about the LEDs.