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4401 Great America Parkway  
Santa Clara, CA 95054

# **Serial Adapter Module** ***Supplement***

**NORTEL**  
NETWORKS™

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## Preface

The Serial Adapter Module provides connectivity for V.35, RS-232, RS-449/422 balanced, RS-530, and X.21 devices.

### Before You Begin

This guide is intended for qualified service personnel who are installing the Serial Adapter Module in an AN/ANH, ARN, Passport 5430, or Passport 2430 for the first time or who need to install or replace any customer-replaceable unit (CRU). A qualified service person should have appropriate technical training and experience and be aware of the hazards involved in installing and replacing CRUs.

### How to Use This Supplement

This WAN adapter module can be used with several different platforms. Refer to the table below to find the chapter that contains the information appropriate for the platform you are using.

Platform	Refer to
AN or ANH	Chapter 1
ARN	Chapter 2
Passport 5430	Chapter 3
Passport 2430	Chapter 4

## Text Conventions

This guide uses the following text conventions:

<b>bold text</b>	Indicates command names and options and text that you need to enter.
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Example: Enter the **diags** command.

<i>italic text</i>	Indicates new terms, book titles, and variables in command syntax descriptions.
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## Acronyms

This guide uses the following acronyms:

CRU	customer-replaceable unit
ESD	electrostatic discharge
IP	Internet Protocol
LED	light emitting diode

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Santa Clara, CA	800-2LANWAN (800-252-6926)
Valbonne, France	33-4-92-96-69-68
Sydney, Australia	61-2-9927-8800
Tokyo, Japan	81-3-5740-1700





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# Chapter 1

## Using the Serial Adapter Module in a BayStack AN or ANH Router

This chapter supplements *Installing an Adapter Module in a BayStack AN or ANH Router*. Follow the hardware installation steps in that manual, then refer to this document for information specific to the serial adapter module.

### Verifying AN/ANH Router Requirements

Table 1-1 shows the minimum versions of boot and diagnostic programmable read-only memory (PROM) code required for a serial adapter module.

**Table 1-1. PROM Diagnostic and Boot Code for AN/ANH Routers**

Code Type	Minimum Version	Directory	File Name
Boot	8.12	<i>an_proms</i>	<i>anboot.exe</i>
Diagnostic	5.31	<i>an_proms</i>	<i>anddiag.exe</i>

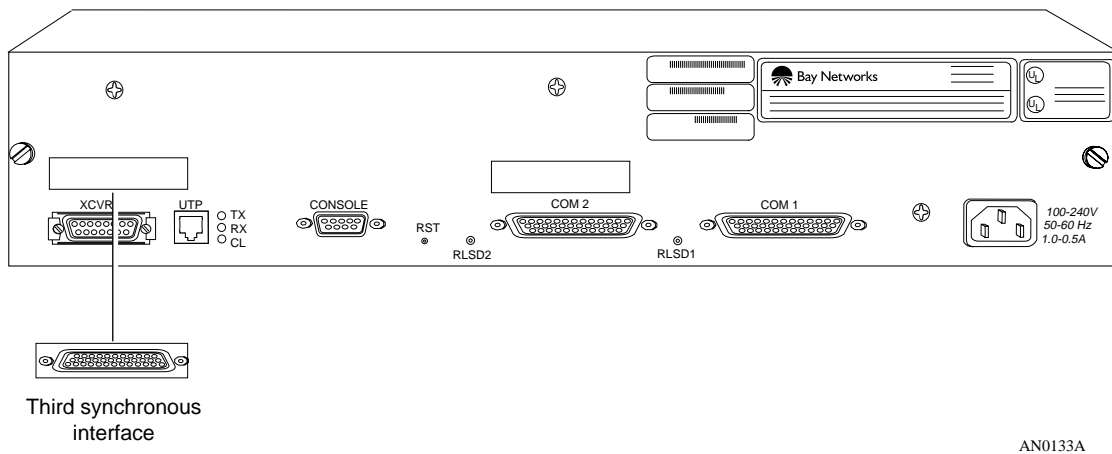
For information on upgrading PROM, see the BayRS™ *Upgrading Routers* guide.

### Attaching Cables

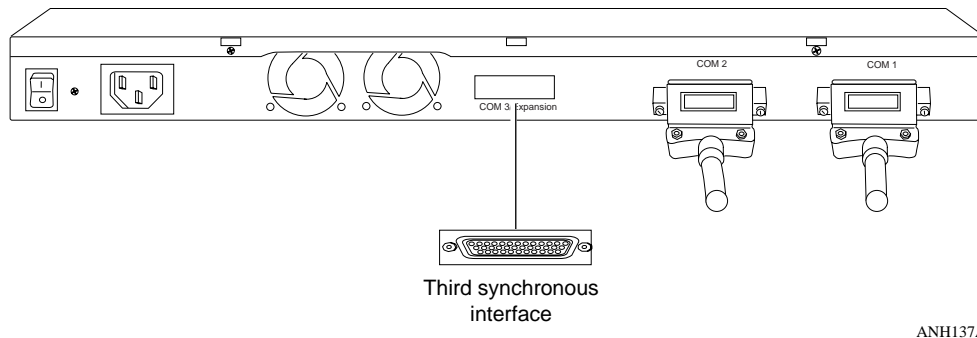
Connect the communications cable to the 44-pin DSUB connector on the installed adapter module.

You install the serial adapter module in an open adapter module slot on the router, as follows:

- AN or 12-port ANH -- the back-panel adapter module slot (Figure 1-1).  
See *Installing an Adapter Module in a BayStack AN or ANH Router*.
- 8-port ANH -- the back-panel COM3 slot (Figure 1-2).  
See *Installing an Adapter Module in a BayStack AN or ANH Router*.



**Figure 1-1.** Serial Adapter Module Connector on an AN or 12-Port ANH



**Figure 1-2.** Serial Adapter Module Connector on an 8-Port ANH

## Completing Software Configuration

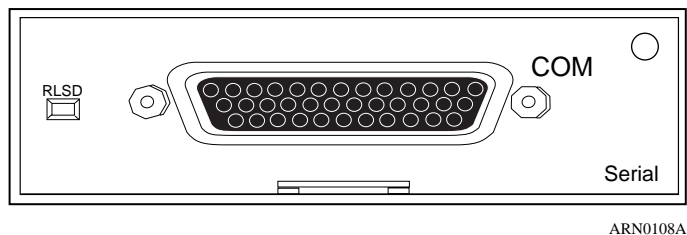
Once you have successfully installed the serial adapter module, complete the following software configuration tasks using instructions found in your BayRS documentation:

Configuration Task	Location of Instructions
Connect the AN or ANH to the network.	<ul style="list-style-type: none"><li>• <i>Installing and Operating BayStack AN and ANH Routers</i></li></ul>
Modify the configuration file to add the serial adapter module and enable default software services.	Any of the following: <ul style="list-style-type: none"><li>• <i>Configuring and Managing Routers with Site Manager</i></li><li>• <i>Using the Bay Command Console (BCC)</i></li></ul>
Configure line services.	<i>Configuring WAN Line Services</i>
Configure WAN protocol services.	Any of the BayRS WAN or System Suite guides, including: <ul style="list-style-type: none"><li>• <i>Configuring IP Services</i></li><li>• <i>Configuring Frame Relay Services</i></li><li>• <i>Configuring X.25 Services</i></li><li>• <i>Configuring PPP Services</i></li></ul>

For the latest information, be sure to review the release notes and documentation change notice for your version of BayRS software.

## Interpreting LEDs

The serial adapter module RLSD (Received Line Signal Detection) LED (Figure 1-3) lights when the serial interface detects data transfer.



**Figure 1-3. Serial Adapter Module RLSD LED**



**Note:** The LED will blink on and off during diagnostic testing, but does not indicate data transfer until you have configured and enabled the software services.

---

## Chapter 2

# Using the Serial Adapter Module in a BayStack ARN Router

This chapter supplements *Installing and Operating BayStack ARN Routers* (Chapter 4, “Installing a WAN Adapter Module”). Follow the hardware installation steps in that manual, then refer to this document for information specific to the serial adapter module.

## Verifying ARN Router Requirements

Table 2-1 shows the minimum versions of boot and diagnostic programmable read-only memory (PROM) code required for a serial adapter module.

**Table 2-1. PROM Diagnostic and Boot Code for ARN Routers**

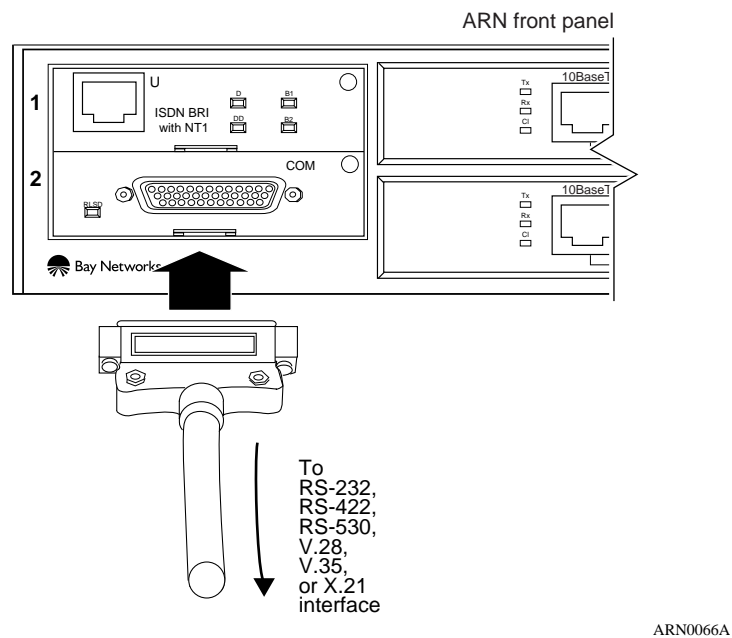
Code Type	Minimum Version	Directory	File Name
Boot	1.17	<i>arn_proms</i>	<i>arnboot.exe</i>
Diagnostic	1.30	<i>arn_proms</i>	<i>arndiag.exe</i>

For information on upgrading PROM, see the BayRS™ *Upgrading Routers* guide.

## Attaching Cables

Connect the communications cable to the 44-pin DSUB connector on the installed adapter module.

You install the serial adapter module in one of the two front-panel WAN adapter module slots (Figure 2-1).



**Figure 2-1. ARN Serial Adapter Module Connector (Slot 2)**

## Completing Software Configuration

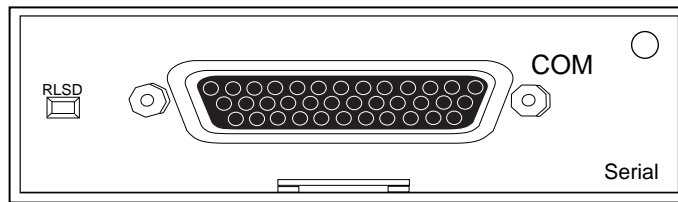
Once you have successfully installed the serial adapter module, complete the following software configuration tasks using instructions found in your BayRS documentation:

Configuration Task	Location of Instructions
Connect the ARN to the network.	One of the following: <ul style="list-style-type: none"><li>• <i>Installing and Operating BayStack ARN Routers</i></li><li>• <i>Configuring BayStack Remote Access</i></li></ul>
Modify the configuration file to add the serial adapter module and enable default software services.	Any of the following: <ul style="list-style-type: none"><li>• <i>Configuring and Managing Routers with Site Manager</i></li><li>• <i>Using the Bay Command Console (BCC)</i></li></ul>
Configure line services.	<i>Configuring WAN Line Services</i>
Configure WAN protocol services.	Any of the BayRS WAN or System Suite guides, including: <ul style="list-style-type: none"><li>• <i>Configuring IP Services</i></li><li>• <i>Configuring Frame Relay Services</i></li><li>• <i>Configuring X.25 Services</i></li><li>• <i>Configuring PPP Services</i></li></ul>

For the latest information, be sure to review the release notes and documentation change notice for your version of BayRS software.

## Interpreting LEDs

The serial adapter module RLSD (Received Line Signal Detection) LED (Figure 2-2) lights when the serial interface detects data transfer.



ARN0108A

**Figure 2-2. Serial Adapter Module RLSD LED**



**Note:** The LED will blink on and off during diagnostic testing, but does not indicate data transfer until you have configured and enabled the software services.



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## Chapter 3

# Using the Serial Adapter Module in a Passport 5430 Multiservice Access Switch

This chapter supplements *Installing and Operating the Passport 5430 Multiservice Access Switch* (Chapter 10, “Installing a WAN Adapter Module”). Follow the hardware installation steps in that manual, then refer to this document for information specific to the serial adapter module.

### WAN Adapter Module Placement Considerations

When installing WAN adapter modules in the Passport 5430 Module slots, note the following:

- Each WAN adapter module you install is automatically assigned a circuit, even if the WAN adapter module has not been configured. This prevents disruption of active circuits if you reconfigure the module at a later time.
- ISDN BRI adapter modules can use two circuits (one for each of the 2 B channels).
- You can configure a total of 4 circuits.
- Circuit allocations are prioritized according to which Module slot is being used by the WAN adapter modules. Module slot 3 has priority over Module slot 4, and Module slot 4 has priority over Module slot 5.
- When there are more than the 4 possible circuits to be configured, for example if there are 2 ISDN BRI adapter modules and a serial adapter module (5 circuits in all), circuit allocation becomes an issue.

In the example above, the first ISDN BRI module (in Module slot 3) has the resources to bring up a second B channel (thus using 2 circuits). The serial adapter in Module slot 4 uses a third circuit. The second ISDN BRI adapter module (in Module slot 5), can have only 1 B channel configured because the serial adapter module (in Module slot 4) has priority and is allocated a circuit over anything in Module slot 5. In this case, there are not enough circuits left to utilize the second B channel on the ISDN BRI adapter in Module slot 5. In this example, if you wanted to have both B channels on both ISDN BRI adapters configured, you would have to remove the serial card from Module slot 4.

Table 3-1 lists examples of valid WAN adapter module combinations.

**Table 3-1. Example WAN Adapter Module Combinations**

<b>Module 3</b>	<b>Module 4</b>	<b>Module 5</b>
T1/FT1 or E1/FE1	T1/FT1 or E1/FE1	T1/FT1 or E1/FE1
T1/FT1 or E1/FE1	T1/FT1 or E1/FE1	Serial or V.34 modem
T1/FT1 or E1/FE1	Serial or V.34 modem	Serial or V.34 modem
T1/FT1 or E1/FE1	T1/FT1 or E1/FE1	ISDN 2 B-channels plus 1 D-channel
T1/FT1 or E1/FE1	ISDN BRI 1 B-channel plus 1 D-channel	Serial or V.34 modem
T1/FT1 or E1/FE1	Serial or V.34 modem	Serial or V.34 modem
Serial or V.34 modem	Serial or V.34 modem	Serial or V.34 modem
Serial or V.34 modem	Serial or V.34 modem	ISDN BRI 1 B-channel plus 1 D-channel
Serial or V.34 modem	Serial or V.34 modem	ISDN BRI 2 B-channels plus 1 D-channel
Serial or V.34 modem	ISDN BRI 2 B-channels plus 1 D-channel	ISDN BRI 1 B-channel plus 1 D-channel
ISDN BRI 2 B-channels plus 1 D-channel	ISDN BRI 2 B-channels plus 1 D-channel	Empty
ISDN BRI 2 B-channels plus 1 D-channel	ISDN BRI 1 B-channel plus 1 D-channel	Serial or V.34 modem
ISDN BRI 2 B-channels plus 1 D-channel	ISDN BRI 1 B-channel plus 1 D-channel	T1/FT1 or E1/FE1
ISDN BRI 2 B-channels plus 1 D-channel	Serial or V.34 modem	ISDN BRI 1 B-channel plus 1 D-channel
ISDN BRI 2 B-channels plus 1 D-channel	T1/FT1 or E1/FE1	ISDN BRI 1 B-channel plus 1 D-channel

## Attaching Cables

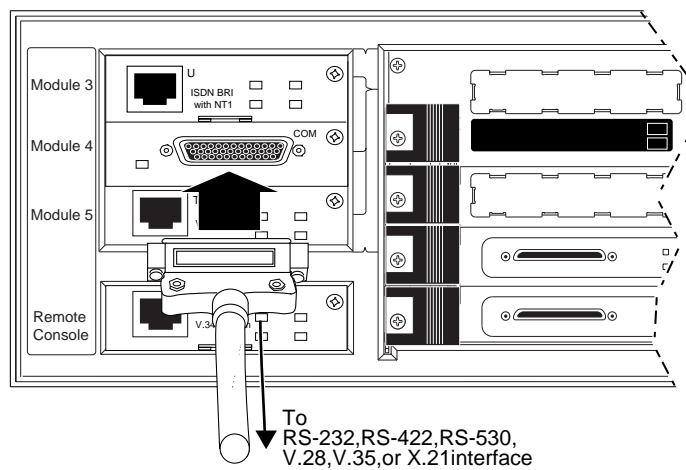
Connect the communications cable to the 44-pin DSUB connector on the installed adapter module.

You install the serial adapter module in one of the three front-panel Module slots on the Passport 5430 (Figure 3-1).



**Note:** The slot labeled Remote Console is reserved for the V.34 modem adapter module. Do not install the serial adapter module in the Remote Console slot.

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FBR0022A

**Figure 3-1. Passport 5430 Serial Adapter Module Connector**

## Completing Software Configuration

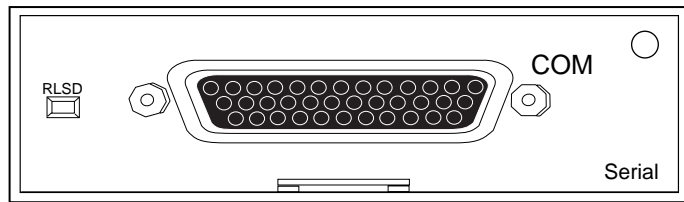
Once you have successfully installed the serial adapter module, complete the following software configuration tasks using instructions found in your BayRS documentation:

Configuration Task	Location of Instructions
Modify the Passport 5430 configuration file to add the serial adapter module and enable default software services.	Any of the following: <ul style="list-style-type: none"><li>• <i>Configuring and Managing Routers with Site Manager</i></li><li>• <i>Using the Bay Command Console (BCC)</i></li></ul>
Configure line services.	<i>Configuring WAN Line Services</i>
Configure WAN protocol services.	Any of the BayRS WAN or System Suite guides, including: <ul style="list-style-type: none"><li>• <i>Configuring IP Services</i></li><li>• <i>Configuring Frame Relay Services</i></li><li>• <i>Configuring X.25 Services</i></li><li>• <i>Configuring PPP Services</i></li></ul>

For the latest information, be sure to review the release notes and documentation change notice for your version of BayRS software.

## Interpreting LEDs

The serial adapter module RLSD (Received Line Signal Detection) LED (Figure 3-2) lights when the serial interface detects data transfer.



ARN0108A

**Figure 3-2. Serial Adapter Module RLSD LED**



**Note:** The LED will blink on and off during diagnostic testing, but does not indicate data transfer until you have configured and enabled the software services.

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## Chapter 4

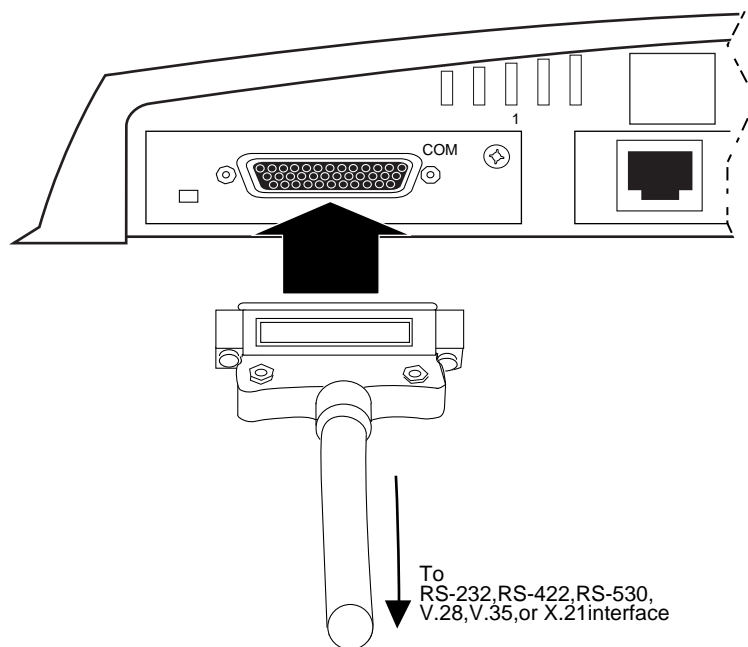
# Using the Serial Adapter Module in a Passport 2430 Multiservice Access Switch

This chapter supplements *Installing and Operating the Passport 2430 Multiservice Access Switch*. Follow the hardware installation steps in that manual, then refer to this document for information specific to the serial adapter module.

### Attaching Cables

Connect the communications cable to the 44-pin DSUB connector on the installed adapter module.

You install the serial adapter module in one of the WAN adapter module slots on the Passport 2430 (Figure 4-1).



VLK0029A

**Figure 4-1. Passport 2430 Serial Adapter Module Connector**



## Completing Software Configuration

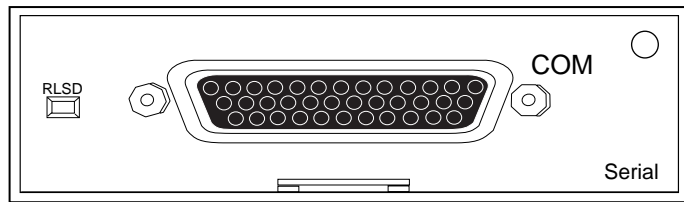
Once you have successfully installed the serial adapter module, complete the following software configuration tasks using instructions found in your BayRS documentation:

Configuration Task	Location of Instructions
Connect the Passport 2430 to the network.	<ul style="list-style-type: none"><li>• <i>Installing and Operating the Passport 2430 Multiservice Access Switch</i></li></ul>
Modify the configuration file to add the serial adapter module and enable default software services.	One of the following: <ul style="list-style-type: none"><li>• <i>Configuring and Managing Routers with Site Manager</i></li><li>• <i>Using the Bay Command Console (BCC)</i></li></ul>
Configure line services.	<i>Configuring WAN Line Services</i>
Configure WAN protocol services.	Any of the BayRS WAN or System Suite guides, including: <ul style="list-style-type: none"><li>• <i>Configuring IP Services</i></li><li>• <i>Configuring Frame Relay Services</i></li><li>• <i>Configuring X.25 Services</i></li><li>• <i>Configuring PPP Services</i></li></ul>

For the latest information, be sure to review the release notes and documentation change notice for your version of BayRS software.

## Interpreting LEDs

The serial adapter module RLSD (Received Line Signal Detection) LED (Figure 4-2) lights when the serial interface detects data transfer.



ARN0108A

**Figure 4-2. Serial Adapter Module RLSD LED**



**Note:** The LED will blink on and off during diagnostic testing, but does not indicate data transfer until you have configured and enabled the software services.