

FrameSaver™ 9620 Network Access Module (NAM) Installation Instructions

Document Number 9621-A2-GN10-20

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Select *Service & Support* → *Technical Manuals* → *FrameSaver Frame Relay Devices*.

Select the following documents:

- 9621-A2-GB20
FrameSaver 9620 User's Guide
- 9621-A2-GH30
FrameSaver 9620 Technical Reference

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- Within the U.S.A., call 1-800-PARADYNE (1-800-727-2396)
- Outside the U.S.A., call 1-727-530-8623

Before You Begin

Make sure you have:

- A small flat-blade screwdriver.
- A small Phillips screwdriver if transferring an ISDN BRI DBM to the replacement NAM (for use in 1-slot housing only), or if installing the NAM in a 9000 Series Access Carrier.
- 1-Slot Assembled Access Unit Installation Instructions* (Document No. 9000-A2-GN10) to install the 1-slot access unit once the NAM is installed, or
- 9000 Series Access Carrier Installation Instructions* (Document No. 9000-A2-GN1D) for power-up verification procedures, if using an access carrier.

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- ISDN BRI Dial Backup Module (DBM) Installation Instructions* (Document No. 9000-A2-GN19) to uninstall, then reinstall a DBM if one is currently installed on the NAM being replaced.
 - Configuration information for the NAM being installed or replaced.

If an ISDN BRI DBM is installed on a NAM being replaced, the DBM must be uninstalled, then reinstalled onto the replacement NAM (1-slot housings only).

Package Checklist

Verify that your package contains the following:

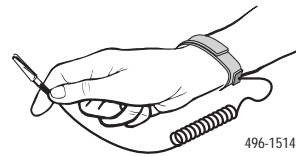
- NAM
- NAM I/O card, if installing the NAM in an access carrier
- Appropriate cables

Safety Instructions

Please read the EMI warning and important Safety Instructions in the Technical Reference or in the installation document that you received with your housing.

⚠ HANDLING PRECAUTIONS FOR STATIC-SENSITIVE DEVICES

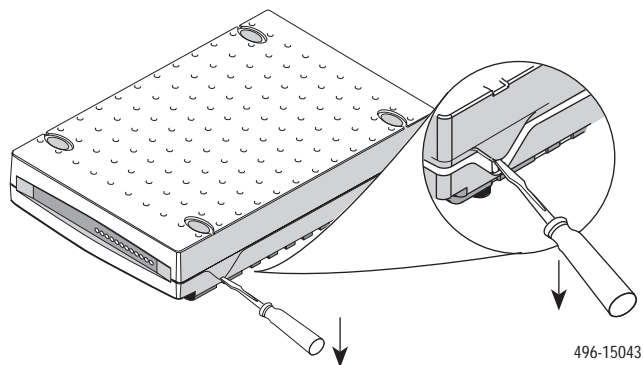
This product is designed to protect sensitive components from damage due to electrostatic discharge (ESD) during normal operation. When performing installation procedures, however, take proper static control precautions to prevent damage to equipment. If you are not sure of the proper static control precautions, contact your nearest sales or service representative.



Removing a NAM from a 1-Slot Housing

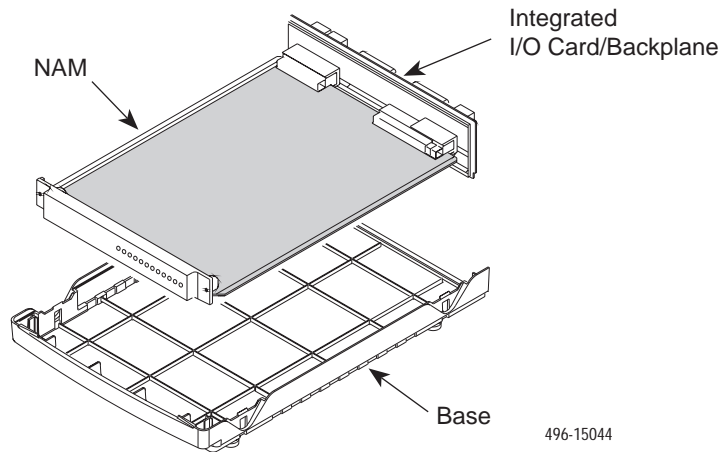
Before replacing a NAM, locate or record the access unit's configuration options, or transfer the configuration using the FTP (file transfer protocol) feature. This is useful when setting up the replacement NAM, verifying operation, or troubleshooting. See the Technical Reference for FTP instructions.

1. Disconnect the power cord/transformer, first from the ac outlet, then from the rear of the access unit.
2. Disconnect the other cables.
3. Open the 1-slot housing using a small flat-blade screwdriver. Gently pry open the housing at each of the four connecting tab points. However, if the screwdriver is too big or you do not open carefully, you could cause damage to the housing.

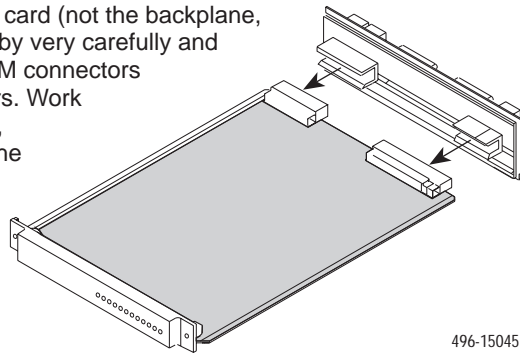


4. Remove the cover.

5. Lift the NAM and the integrated I/O card/backplane (rear panel) from the base.



6. Work the NAM away from the I/O card (not the backplane, since the backplane might bend) by very carefully and gently pulling and rocking the NAM connectors away from the I/O card connectors. Work first from one side, then the other, until the NAM is separated from the I/O card. Set the NAM aside.



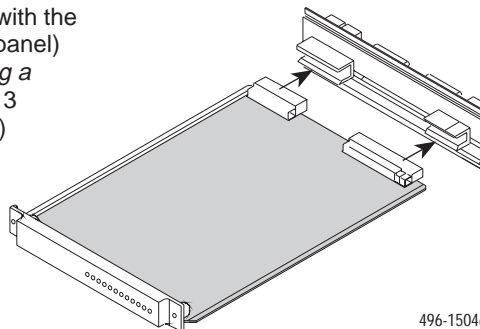
If an ISDN BRI DBM is Installed

1. Remove the DBM from the NAM being replaced.
2. Reinstall the DBM onto the replacement NAM.

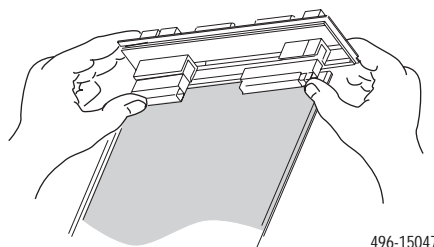
Refer to the *ISDN BRI Dial Backup Module (DBM) Installation Instructions* to uninstall and reinstall the DBM.

Installing a NAM in a 1-Slot Housing

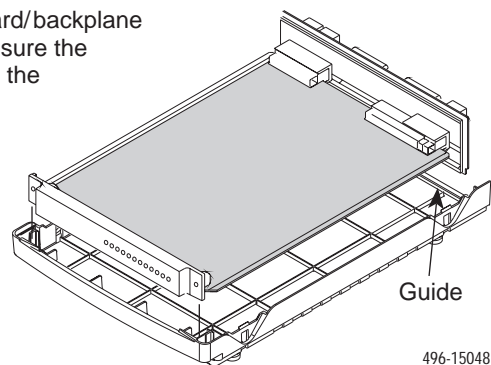
1. Remove the NAM from its shipping box.
2. Carefully align the NAM connectors with the integrated I/O card/backplane (rear panel) connectors. (See Step 3 of *Removing a NAM from a 1-Slot Housing* on page 3 if you need to open the housing first.)



3. Gently, but firmly press the connectors together until they are fully seated. **Be careful not to force or bend any pins.**



4. Place the NAM and integrated I/O card/backplane into the 1-slot housing's base. Make sure the backplane rests inside the guides on the base at the rear of the access unit.



5. Place the cover over the base, aligning the four connecting tabs. Make sure the backplane rests inside the guides on the cover at the rear of the access unit.
6. Press the cover and base together until all four connecting tabs snap into place.
7. Reconnect the power cord/transformer, verifying that the faceplate's OK LED lights once the self-test is passed.
Refer to the *1-Slot Assembled Access Unit Installation Instructions* before reinstalling the cables.

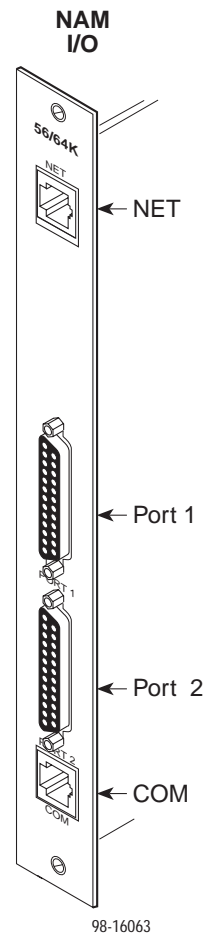
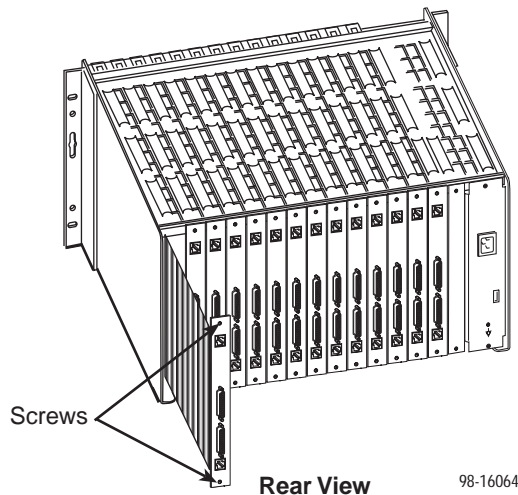
Recommended Order for Installing a NAM into an Access Carrier

1. Install the I/O card.
2. Connect all cables into the I/O card.
3. Install the NAM.
4. Go to the *9000 Series Access Carrier Installation Instructions* for power-up verification procedures.

Installing the I/O Card into the Access Carrier

The NAM's I/O card provides the COM port, network, and DTE connections. The I/O card inserts directly behind the NAM that it supports.

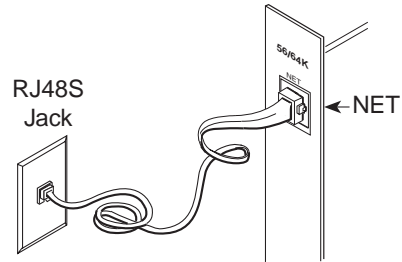
1. Remove the I/O card from the shipping box. Handle only by the top and bottom edges to avoid damaging the card.
2. At the rear of the carrier, align the I/O card with the upper and lower tracks of the slot. Push gently towards the midplane until it stops and you cannot push the card any further.



3. There are two captive screws on the I/O card. Using a screwdriver, alternately tighten each screw until the screws are all the way in.

Connecting to the Network

1. Insert the 8-pin connector on the RJ48S network cable into the NET interface.



98-16060

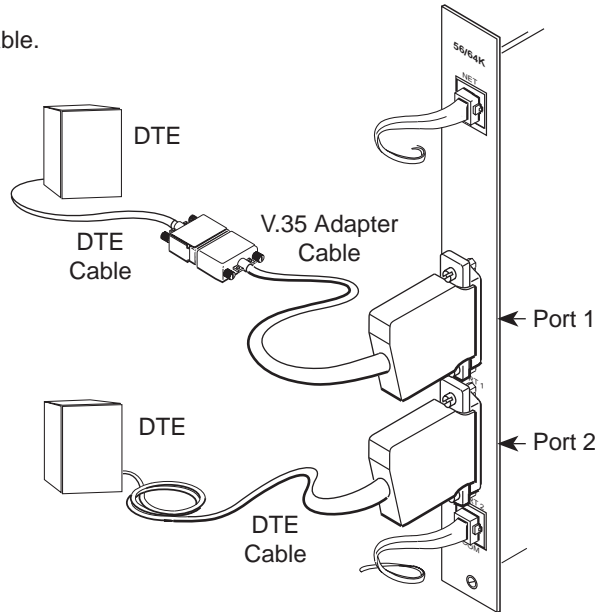
Connecting to a DTE

If the DTE cable type is V.35:

1. Connect the plug to the V.35 end of the adapter cable.
2. Connect the EIA-232E end of the adapter cable to PORT 1 or PORT 2.

If the DTE cable type is EIA-232E:

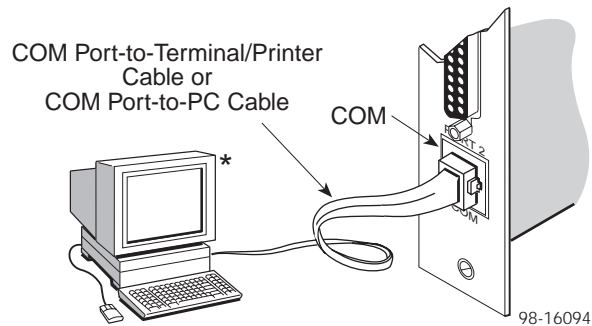
1. Connect the EIA-232E end of the DTE cable to PORT 1 or PORT 2.



98-16061

Connecting the COM Port to a User Interface

1. Configure the async or VT100-compatible terminal or PC to be compatible with the access unit:
 - Baud Rate set to 19.2 kbps.
 - Character length set to 8 data bits.
 - Parity set to none.
 - Stop bit set to 1.
 - Flow Control set to None.
2. Insert the 8-pin end of the cable into the COM port.
3. Insert the other end of the cable into the user interface (VT100-compatible terminal emulation) connector.



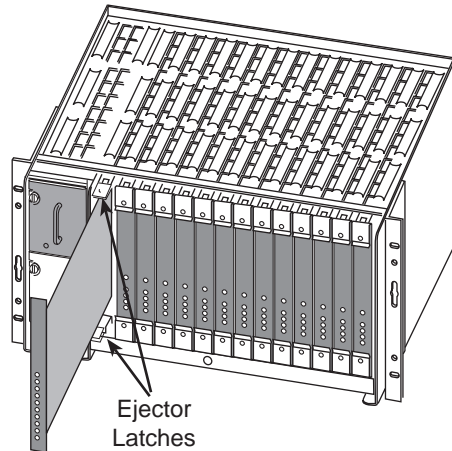
4. Press Return on the keyboard to display the Main Menu. If you need to configure for other than a direct link, see the Technical Reference.

Installing the NAM into the Access Carrier

CAUTION:

Be sure that you install the NAM in the correct slot so that it mates with its matching I/O card. Otherwise, you could damage your card.

1. Remove the NAM from the shipping box. Handle only by the top and bottom edges to avoid damaging the card.
2. At the front of the carrier, align the NAM with the upper and lower tracks of the appropriate slot.



Front View

97-15754

3. Slide the NAM into the tracks until it seats with the midplane connectors. Use care not to force the card or bend any pins.
4. Close both the upper and lower ejector latches on the carrier to lock the card in place, then tighten the captive screws on the ejector latches.

Removing/Replacing a Card in the Access Carrier

Card removal procedures differ, depending on whether you are removing the card from the front or rear of the carrier.

Removing/Replacing the NAM

1. Unscrew the captive screws from the ejector latches on front of the carrier.
2. Press open the ejector latches to disengage the card.
3. Supporting the card by its edges, pull straight out until the card clears the carrier.
4. Align the replacement card with the upper and lower tracks of the slot. Slide forward until the NAM seats. Be careful not to force or bend any pins.
5. Close both the upper and lower ejector latches on the carrier to lock in place, then tighten the captive screws.

Removing/Replacing the I/O Card

1. Remove the NAM from the carrier (see *Removing/Replacing the NAM*).
2. Remove the network, DTE and COM port cables from the I/O card (if applicable).
3. Using a screwdriver, loosen the upper and lower screws fastening the card to the carrier's frame.
4. Gently pull the I/O card away from the midplane until it clears the carrier.
5. Reinstall the NAM.
6. Align the replacement I/O card with the upper and lower tracks of the slot. Push gently towards the midplane until it stops and you cannot push the card any further.
7. Alternately tighten each captive screw until the screws are all the way in.
8. Reattach the cables as appropriate.

Troubleshooting

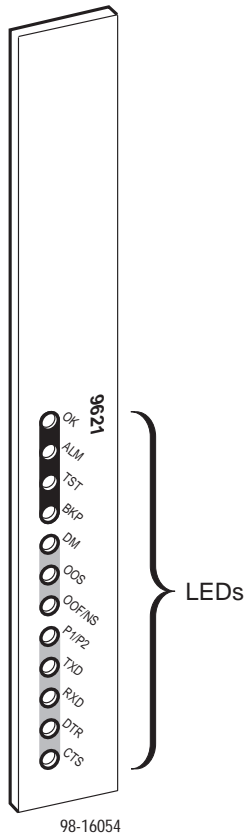
Symptom	Possible Cause	Solutions
No power, or none of the system LEDs are lit.	The power cord is not securely plugged into the wall receptacle, or into the rear panel connector.	Check that the power cord is securely attached at both ends.
	The wall receptacle has no power.	<ol style="list-style-type: none"> 1. Check the wall receptacle power by plugging in some equipment that is known to be working. 2. Check the circuit breaker.
	LED is burned out.	Run the Lamp Test. If the LED in question does not flash with the other LEDs, then contact your service representative.
	Power supply is defective.	Contact your sales or service representative.
Power-Up Self-Test fails. Only Alarm LED is on after power-up.	The access unit has detected an internal hardware failure.	<ol style="list-style-type: none"> 1. Reset the access unit and try again. 2. Contact your service representative.

LEDs



496-14957

Faceplate for 1-Slot Housing



98-16054

The access unit's faceplate includes 12 LEDs (light-emitting diodes) that provide status on the access unit, and its network and DTE interfaces.

Faceplate for Access Carrier

Access Unit LEDs

Label	Indication	Color	What It Means
OK	Power and Operational Status	Green	<p>ON – Access unit has power and is operational.</p> <p>OFF – Access unit is in a power-up self-test, or there is a failure.</p> <p>Blinking ON and OFF (Rate: 1 Hz) – Software is being downloaded.</p>
ALM	Operational Alarm (Fail)	Red	<p>ON – Access unit has just been reset, or an error or fault has been detected.</p> <p>OFF – No failures have been detected.</p>
TST	Test Mode	Yellow	<p>ON – Loopback or test pattern in progress, initiated locally, remotely, or from the network.</p> <p>OFF – No tests are active.</p>
BKP ¹	Backup	Yellow	<p>ON – Access unit is in Backup mode; that is, the backup link has been established, and backup is in progress through the specified Alternate Destination Link.</p> <p>OFF – Access unit is not in Backup mode.</p> <p>Blinking ON and OFF (Rate: 1 Hz) – Alternate Destination Link is being established, but no data has been passed.</p>
<p>¹ The BKP LED indicates backup for an ISDN BRI DBM or external backup device.</p>			

Network Interface LEDs

Label	Indication	Color	What It Means
DM	Data Mode	Green	ON – Access unit is sending or receiving data, or is in DMI (data mode idle – an all 1's condition). OFF – Access unit in CMI (control mode idle – an all 0's condition), or no signal is being detected.
OOS	Out of Service	Red	ON – Network is not in service and the access unit is receiving an out-of-service indicator. OFF – Access unit is not receiving an out-of-service indicator.
OOF/NS	Out of Frame/ No Signal	Red	ON – No signal is being received from the network, the cable is not connected to the network, or the TX and RX pairs are cross-connected. OFF – A signal is present, and no out-of-frame conditions have been detected during the sampling interval. Blinking ON and OFF (Rate: 1 Hz) – At least one OOF has been detected during the sampling interval.

Technical Specifications

Specification	Criteria
Weight	2.59 lbs. (1.18 kg)
Power	
Power consumption	120 Vac, 60 Hz, 60 mA, Average power 9.5 watts
Normal service voltage ranges	120 Vac \pm 12, 60 Hz \pm 3
Physical Environment	
Operating temperature	35° F to 122° F (1.7° C to 50° C)
Storage temperature	4° F to 158° F (20° C to 70° C)
Relative humidity	Up to 90% (noncondensing)
Shock and vibration	Withstands normal shipping and handling
Approvals	
FCC Part 15	Class A digital device
FCC Part 68	Refer to the equipment's label for the Registration Number.
Industry Canada	Refer to the equipment's label for the Certification Number.
UL	Refer to the equipment's label for the UL listing.
CSA – Safety	Refer to the equipment's label for CSA safety information.

Pin Assignments

COM Port/Interface

Signal	Direction	Pin #
DCE Transmit Clock (TXC)	From DCE (Out)	1
DCE Received Data (RXD)	From DCE (Out)	2
Signal Ground (SG)	—	3
DCE Transmit Data (TXD)	To DCE (In)	4
DCE Data Terminal Ready (DTR)	To DCE (In)	5
DCE Carrier Detect (CD)	From DCE (Out)	6
DCE Request to Send (RTS)	To DCE (In)	7
DCE Received Clock (RXC)	From DCE (Out)	8

EIA-232E DTE Ports/Interfaces

Signal	Circuit Mnemonic	ITU/ CCITT #	Direction	25-Pin EIA-232E Pin #
Shield	—	—	—	1
Transmitted Data (TXD)	BA	103	To DCE	2
Received Data (RXD)	BB	104	From DCE	3
Request to Send (RTS)	CA	105	To DCE	4
Clear to Send (CTS)	CB	106	From DCE	5
Data Set (or DCE) Ready (DSR)	CC	107	From DCE	6
Signal Ground/Common (SG)	AB	102A	—	7
Received Line Signal Detector (RLSD or LSD)	CF	109	From DCE	8
Reserved for future use	—	—	—	9
Not used	—	—	—	10
Reserved for future use	—	—	—	11
Reserved for future use	—	—	—	12

EIA-232E DTE Ports/Interfaces (continued)

Signal	Circuit Mnemonic	ITU/ CCITT #	Direction	25-Pin EIA-232E Pin #
Not used	—	—	—	13
Reserved for future use	—	—	—	14
Transmitter Signal Element Timing (TXC)	DB	114	From DCE	15
Reserved for future use	—	—	—	16
Receiver Signal Element Timing (RXC)	DD	115	From DCE	17
Local Loopback (LL)	LL	141	To DCE	18
Not used	—	—	—	19
Data Terminal (or DTE) Ready (DTR)	CD	108/1, /2	To DCE	20
Not used	—	—	—	21
Ring Indicator (RI)	RI	125	From DCE	22
Not used	—	—	—	23
Transmitter Signal Element Timing (TT)	DA	113	To DCE	24
Test Mode Indicator (TM)	TM	142	From DCE	25

NET Port/Interface

Function	Circuit	Pin #
Transmit ring to the network	R	1
Transmit tip to the network	T	2
Receive tip from the network	T1	7
Receive ring from the network	R1	8

BKP Port/Interface (1-Slot Housing Only)

Function	Circuit	Pin #
Transmit/Receive ring to/from the local loop	R/R1	4
Transmit/Receive tip to/from the local loop	T/T1	5

Warranty, Sales, and Service Information

Contact your local sales representative, service representative, or distributor directly for any help needed. For additional information concerning warranty, sales, service, repair, installation, documentation, training, distributor locations, or Paradyne worldwide office locations, use one of the following methods:

- **Via the Internet:** Visit the Paradyne World Wide Web site at <http://www.paradyne.com>
- **Via Telephone:** Call our automated call system to receive current information via fax or to speak with a company representative.
 - Within the U.S.A., call 1-800-870-2221
 - Outside the U.S.A., call 1-727-530-2340

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