

9161 Single T1 Network Access Module (NAM) Installation Instructions

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Product Documentation on the World Wide Web

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Complete documentation for this product is available at **www.paradyne.com**.
Select *Library* → *Technical Manuals* → *NextEDGE Multiservices Access System Documents*.

Select the following document:

9161-A2-GH30

Model 916x/926x T1 Access Mux Technical Reference

To order a paper copy of a Paradyne document:

- 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:

- An operable T1 network connection
- An asynchronous (VT100-compatible) terminal emulator
- Housing and other associated hardware
- Applicable cables

See the Technical Reference for additional information on:

- Setting Up
- Troubleshooting and Maintenance
- Technical Specifications
- Cables, Connectors, and Pin Assignments

Package Checklist

Verify that your package contains the following:

- T1 NAM and its associated I/O card
- Network Interface Cable (14 ft.)
- DB9 COM Port Cable (14 ft.)
- Affidavit Requirements for Connection to Digital Service

Be sure to register your warranty at www.paradyne.com/warranty.

Available Options

The following options are separately orderable:

- RJ48C modular cable for network access (20 ft.)
- RJ48H T1 mass termination cable (5 ft.) for connecting seven T1 NAMs to an M66 block

Cables You May Need to Order

The following cables and connectors are specifically for this product.

If connecting to a . . .	You need a . . .	Feature Number
Terminal/printer (DB25 interface/connector – EIA-232 connection)	COM Port-to-Terminal/Printer cable (14 ft.)	3100-F2-540
PC (DB9 interface/connector – EIA-232 connection)	COM Port-to-PC cable (14 ft.)	3100-F2-550
DTE with a V.35 interface/connector	V.35 Interconnect cable (1 ft.) MS34 to DB25 adapter cable for each port: Port 1 and/or Port 2	3100-F1-570
DTE with a V.11/X.21 interface/connector	V.11/X.21 Interconnect cable (1 ft.) DB15 to DB25 adapter cable for each port: Port 1 and/or Port 2	3100-F1-571
DTE with a RS-449 interface/connector	RS499 Interconnect cable (1 ft.) DB37 to DB25 DTE adapter cable for each port: Port 1 and/or Port 2	3100-F1-580

If connecting to a . . .	You need a . . .	Feature Number
LAN Adapter	COM Port-to-LAN Adapter cable (14 ft.)	3100-F2-910
Modem (8-pin modular-to-DB25 connector)	Modem cable	9008-F1-550

Contact your sales representative to order cables.

Recommended Order of Installation

1. First, install the I/O card.
2. Connect all cables into the I/O card.
3. Install the NAM.
4. Go to the appropriate housing installation document for power-on verification procedures:
 - *2-Slot Housing Installation Instructions*
(Document No. 9000-A2-GN15)
 - *5-Slot Housing with AC Power Supply Installation Instructions*
(Document No. 9000-A2-GN16)
 - *5-Slot Housing with DC Power Supply Installation Instructions*
(Document No. 9000-A2-GN1C)
 - *9000 Series Access Carrier with AC Power Supply Installation Instructions*
(Document No. 9000-A2-GN1D)

Safety Instructions

Please read the EMI warning and Important Safety Instructions in the Technical Reference or the installation document received with the 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.

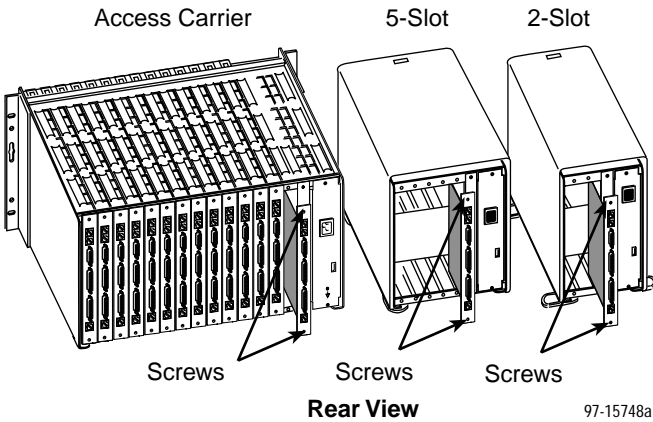


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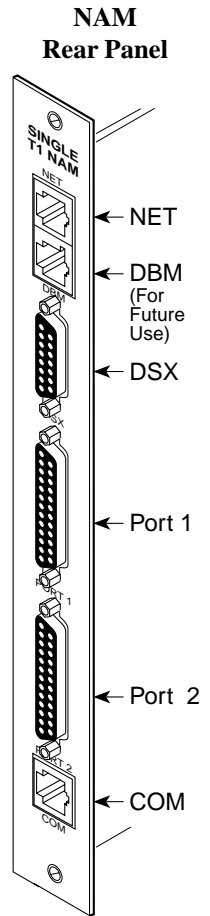
Installing the I/O Card

The NAM's I/O card provides the COM port, network, DSX and DTE connections. The I/O card inserts directly behind the NAM that it supports. Slot numbers are identical (in this case, Slot 01) to facilitate correct installation.

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 housing, 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.



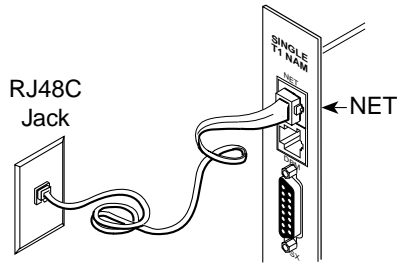
3. There are two captive screws on the I/O card. Using a screwdriver, alternately tighten each screw until the screws are all the way in.



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Connecting to the Network

1. Insert the 8-pin connector on the RJ48C network cable into the NET interface.
2. Insert the other end of the cable into the RJ48C modular jack.

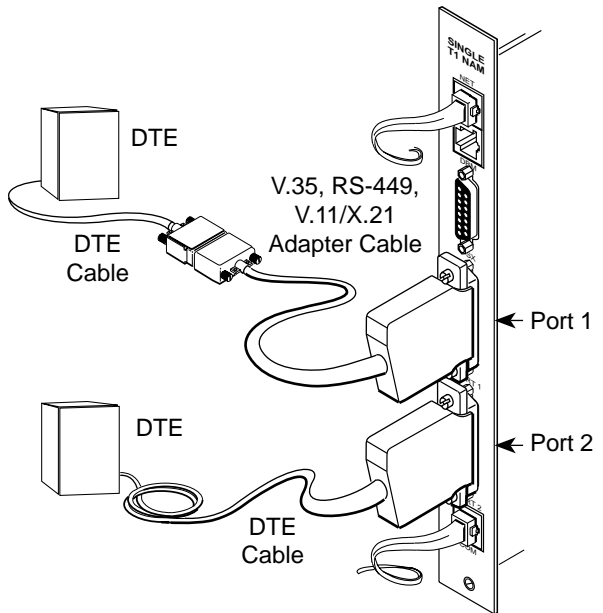


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Connecting to a DTE

If the DTE cable type is V.35, RS449, or V.11/X.21 (separately orderable):

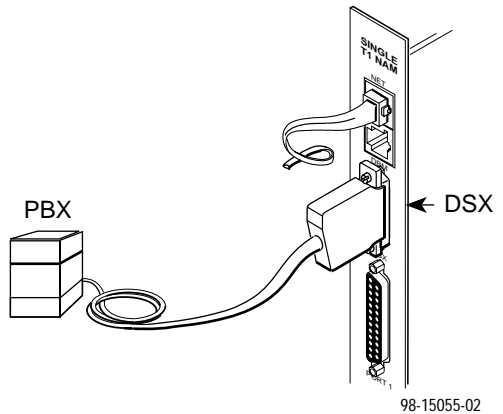
1. Connect the plug to the V.35, RS449, or V.11/X.21 end of the adapter cable (as appropriate).
2. Connect the EIA 530A end of the adapter cable to PORT 1 or PORT 2.



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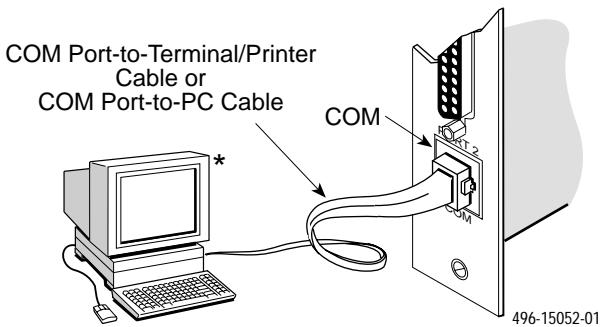
Connecting to the DSX

1. Insert the DB15 end of the DSX cable into the DSX interface.
2. Insert the other end of the cable into the CPE (Customer Premises Equipment, such as a PBX).



Connecting the COM Port to a User Interface

1. Insert the 8-pin end of the cable into the COM port.
2. Insert the other end of the cable into the user interface (VT100-compatible terminal emulation) connector.
3. Press Enter on the keyboard to display the Main Menu. If you need to configure for other than a direct link, see the Technical Reference.



*Set the speed of the async (VT100-compatible) terminal so it matches the NAM's factory-loaded data rate of 19.2 kbps, character length set to 8, parity set to None, and stop bits set to 1. The flow control should be set to None or Hardware.

Installing the T1 NAM

In the 2- and 5-slot housings, the NAM is always installed in Slot 01. In the access carrier, the NAM can be installed in any slot.

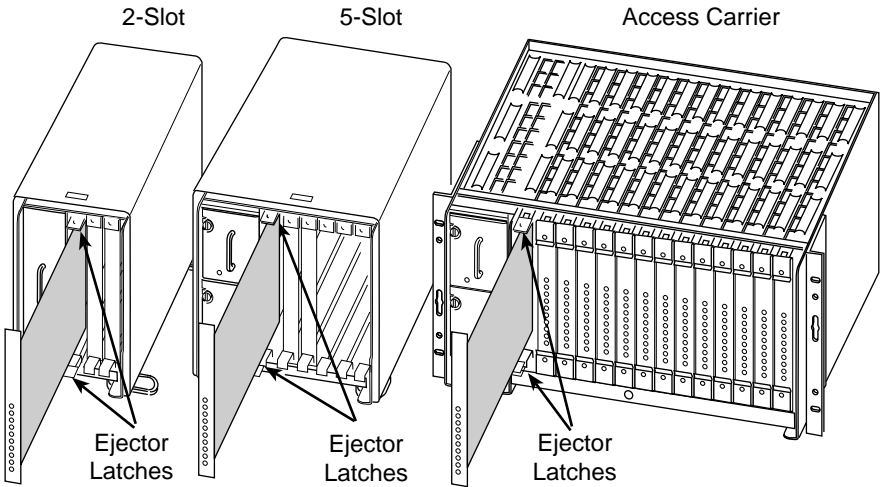
⚠ WARNING:

Do NOT remove any jumpers located on the battery. To do so can cause non-volatile memory loss. Should a jumper become separated from the battery, contact your service representative immediately.

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 housing's bezel, if applicable. See the housing installation instructions for information.
2. Remove the NAM from the shipping box. Handle only by the top and bottom edges to avoid damaging the card.
3. At the front of the housing, align the NAM with the upper and lower tracks of the appropriate slot.



Front View

98-15750-01

4. Slide the NAM into the tracks until it seats with the midplane connectors. Be careful not to force the card or bend any pins.
5. Close both the upper and lower ejector latches to lock the NAM in place, then tighten the captive screws on the ejector latches.
6. Replace the housing's bezel, if applicable.

Removing/Replacing a Card

Card removal procedures differ, depending on whether you are removing the NAM from the front of the housing or the I/O card from the rear of the housing.

Removing/Replacing the NAM

1. Remove the housing's bezel, if applicable. See the housing installation instructions for information.
2. Remove the captive screws from the ejector latches on front of the housing.
3. Press open the ejector latches to disengage the card.
4. Supporting the card by its edges, pull straight out until the card clears the housing.
5. 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.
6. Close both the upper and lower ejector latches on the housing to lock in place, then tighten the captive screws.
7. Replace the housing's bezel, if applicable.

Removing/Replacing the I/O Card

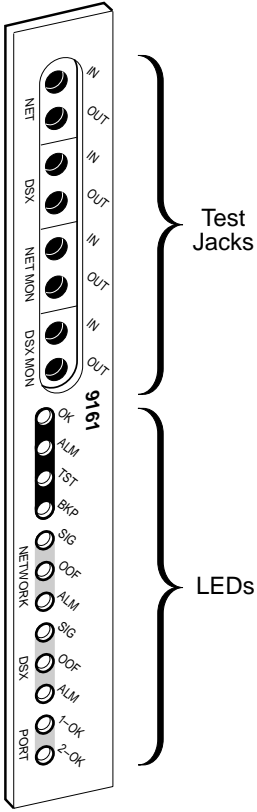
1. Remove the NAM from the housing (see *Removing/Replacing the NAM*).
2. Remove the network, DSX-1, DTE, and COM port cables from the I/O card (if applicable).
3. Using a screwdriver, loosen the upper and lower screws fastening the card to the housing's frame.
4. Gently pull the I/O card away from the midplane until it clears the housing.
5. 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.
6. Alternately tighten each captive screw until the screws are all the way in.
7. Reattach the cables as appropriate.
8. Reinstall the NAM.

Power-On

Refer to your housing instructions to power-on, if needed (see page 3 for a list of documents).

Front Panel LEDs and Test Jacks

The T1 NAM has 12 LED (light-emitting diode) status indicators and four sets of test jacks.



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Test Jacks

The NAM contains four sets of test jacks. Use these for:

- Monitoring and testing towards the Network 1 interface carrier
- Monitoring and testing towards the Network 2 interface carrier

Refer to *Troubleshooting and Maintenance* in the Technical Reference for information on the test jacks.

General Status LEDs

Label	Indication	Color	What It Means
OK	Power and Operational Status	Green	<p>ON – NAM has power and is operational.</p> <p>OFF – NAM is in a power-up self-test, or there is a failure.</p> <p>CYCLING – The unit is in Minimum mode. Requires an FTP download.</p>
ALM	System Failure/ Self-Test	Red	<p>ON – NAM 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	Backup	Yellow	Not supported. Remains off except during a Lamp Test.

Network and DSX Interface LEDs

Label	Indication	Color	What It Means
SIG	Signal	Green	<p>ON – A recoverable signal is present on the network/DSX interface.</p> <p>OFF – The signal cannot be recovered from the network/DSX interface. An LOS condition exists.</p>
OOF	Out of Frame	Yellow	<p>ON – At least one OOF was detected during the sampling period.</p> <p>OFF – No OOFs were detected during the sampling period.</p>
ALM	Alarm	Yellow	<p>ON – An alarm condition is present on the network/DSX interface.</p> <p>Current alarm conditions:</p> <ul style="list-style-type: none"> ■ Loss of Signal (LOS) ■ Loss of Frame (LOF) ■ Excessive Error Rate (EER) ■ Yellow Alarm ■ Alarm Indication Signal (AIS) <p>OFF – No alarm condition is present on the network/DSX interface.</p>

Port 1 and Port 2 LEDs

Label	Indication	Color	What It Means
1-OK 2-OK	Operational Status	Green	<p>ON – The interchange circuits for the port are in the correct state to transmit and receive data.</p> <p>OFF – The port is idle. Occurs if the port is disabled, if an EDL Out of Frame or EER condition is present, if a DCLB is active, or if the port is configured to monitor DTR and/or RTS and the lead(s) is not asserted.</p>

Troubleshooting

Symptom	Possible Cause	Solutions
No power, or none of the system LEDs are lit.	<p>For a DC power source, DC power is not present.</p> <p>For an AC power source, the wall receptacle has no power, or the housing's power cord is not securely plugged into the wall receptacle or the back of the housing.</p> <p>LED is burned out.</p>	<p>Check the DC power source.</p> <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 that the power cord is securely attached at both ends. 3. Check the circuit breaker. <p>Run the Lamp Test. If the LED in question does not flash with the other LEDs, then contact your service representative.</p>
Power-On Self-Test fails. Only Alarm LED is on after power-on.	The NAM has detected an internal hardware failure.	<ol style="list-style-type: none"> 1. Reset the NAM and try again (see the Technical Reference). 2. Contact your service representative.
Cannot access the NAM or the user interface.	Login or password is incorrect, COM port is misconfigured, or the NAM otherwise configured so it prevents access.	<ol style="list-style-type: none"> 1. Reset the NAM (see the Technical Reference). 2. Contact your service representative.
Device Fail appears on the System Health and Status screen.	The NAM detects an internal hardware failure.	Record the 8-digit code from the System Health and Status screen, then contact your service representative.
Not receiving data at DTE or DSX-1 interface.	Not cross-connected to the correct timeslot(s).	Verify cross connections using the Cross Connect configuration option.

Warranty, Sales, Service, and Training 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:

- **Internet:** Visit the Paradyne World Wide Web site at www.paradyne.com. (Be sure to register your warranty at www.paradyne.com/warranty.)
- **Telephone:** Call our automated system to receive current information by 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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