PARADYNE™

Model 7520 DSU
Startup Instructions

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Select the following document:

7520-A2-GB20
Model 7520 DSU User's Guide

To request 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

Package Checklist

Verify that your package contains the following:

- ❑ A Model 7520 Single Port DSU
- ❑ Power cord with power transformer
- ❑ RJ48S modular cable for U.S. network access (14')

No DTE cables are provided. Additional cables may need to be ordered.

Cables and Equipment You May Need to Order

If connecting . . .	Order a . . .
A VT100-compatible terminal to the Terminal port	Standard straight-through EIA-232 cable with DB25 plug connectors on both ends.
A PC to the Terminal port	Standard straight-through EIA-232 cable with a DB25 plug connector on one end and a DB9 socket connector on the other end.
An External Modem to the Terminal port	Standard crossover EIA-232 cable with DB25 plug connectors on both ends.
A DTE with a V.35 connector to the 34-pin DTE port	V.35 cable with an MS34 plug connector on one end and an MS34 socket connector on the other end.
A DTE with a DB25 connector to the 25-pin DTE port	Standard straight-through EIA-232 cable with DB25 plug connectors on both ends.

Contact your sales or service representative to order these cables. For details, refer to Appendix C, *Cables and Pin Assignments,* in the User's Guide.

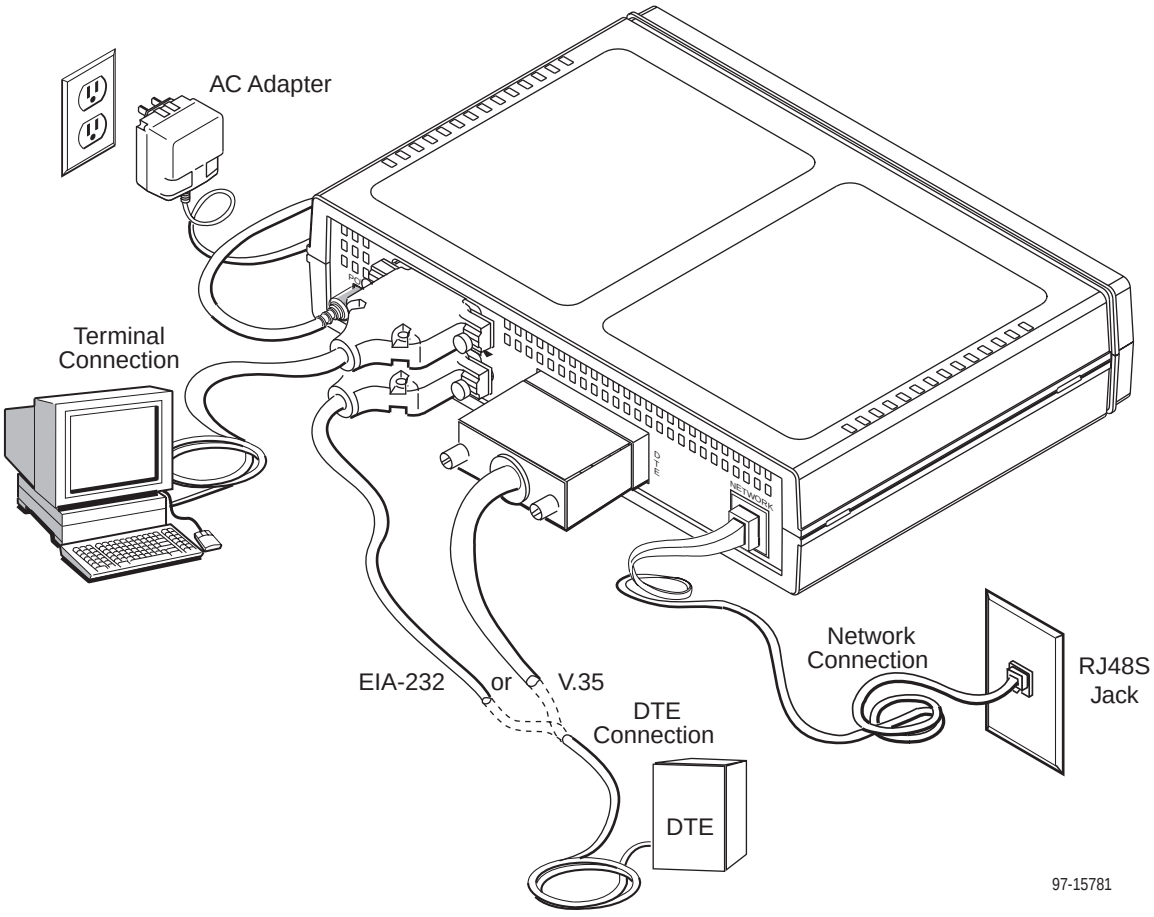
Site Preparation

Before installation, read the *Important Safety Instructions* on page 15.

Make sure you have:

- ❑ A dedicated, grounded ac outlet that is protected by a circuit breaker within 6 feet of the access unit.
- ❑ A clean, well-lit, and ventilated site that is free from environmental extremes.
- ❑ One to two feet of clearance for cable connections.
- ❑ An operable network connection.
- ❑ An asynchronous terminal or PC with terminal emulation software.

Installing Your DSU



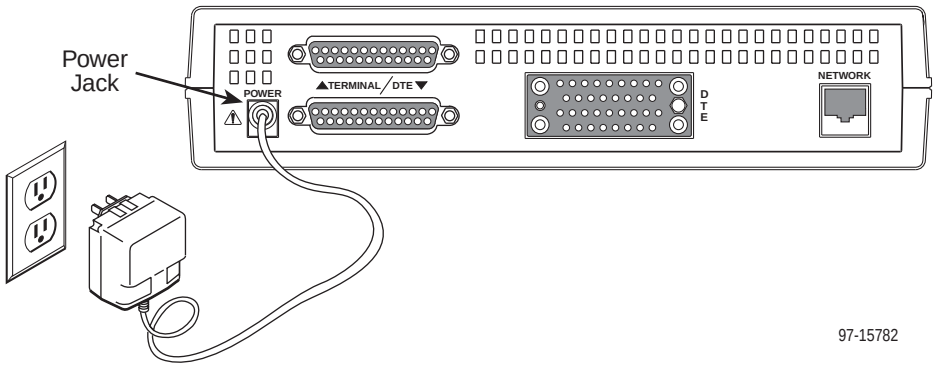
Installing the Power Cord

CAUTION:

Use no power supply except the one provided with the DSU. Using the wrong power supply can destroy the DSU.

▶ Procedure

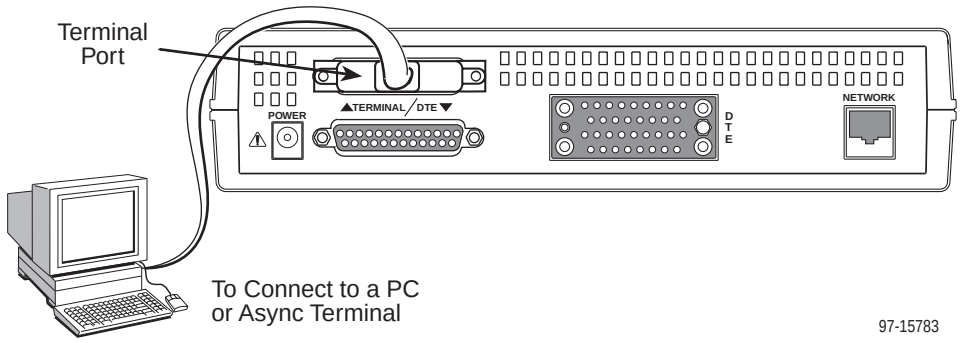
1. Insert the power plug into the POWER jack.
2. Plug the power transformer into an ac outlet.



Connecting the Terminal Port to an Async Terminal

▶ Procedure

1. Insert the 25-pin end of the EIA-232 cable into the TERMINAL port.
2. Insert the other end of the cable into the VT100-compatible terminal.
3. Press Return on the keyboard to display the Main Menu.



NOTE:

Communications parameters on the Terminal port are 9.6 kbps, 8 bits per character, one stop bit, and no parity.

Connecting to a DTE

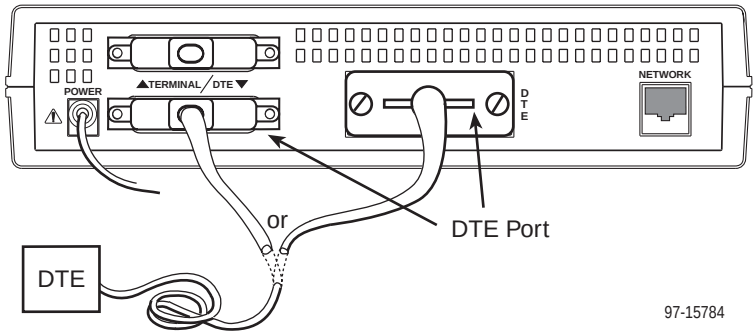
▶ Procedure

1. Insert one end of a 34-pin V.35 cable into the MS34 DTE port

   – or –

   insert one end of 25-pin EIA-232 cable into the DB25 DTE port.

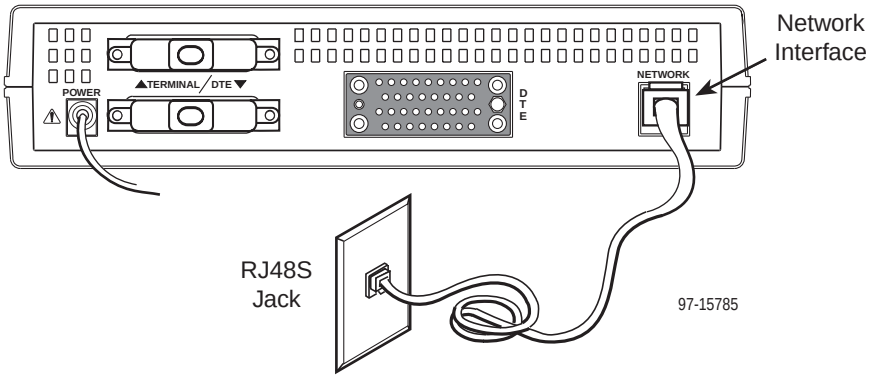
2. Insert the other end of the cable into the appropriate connector on your DTE.



Connecting to the Network

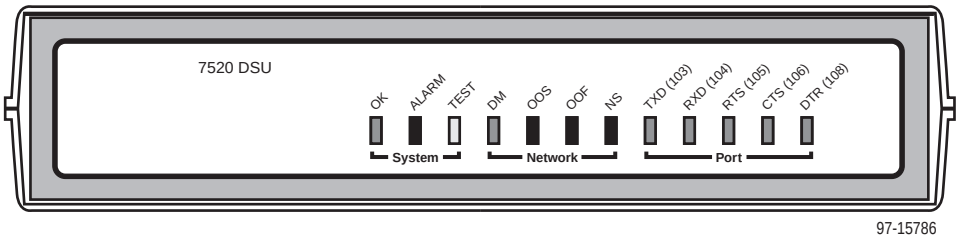
▶ Procedure

1. Insert the 8-pin connector on the RJ48S network cable into the NETWORK jack.
2. Insert the other end of the cable into the RJ48S modular jack.



Hardware Verification

- ❑ Verify that the OK LED lights up.
- ❑ Verify that the ALARM LED is off.



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- ❑ Verify that the User Interface Idle screen is displayed on the terminal or PC. Press the Enter key. Verify that the Main Menu appears.

```
main
Device Name:                                                    Model: 7520


                                  MAIN MENU

                              Status
                              Test
                              Configuration
                              Control









--------------------------------------------------------------------------------
Ctrl-a to access these functions                                          Exit
```

If the DSU fails to respond as described, refer to Chapter 6, *Messages and Troubleshooting*, in the User's Guide.

Identifying the Device and System

Use the Device Name screen to determine the name that will be displayed at the top of all ATI screens, and system information that will be displayed on the Identity screen. To access the Device Name screen, follow this menu selection sequence:

Main Menu → Control → Device Name

```
main/control/device name
Device Name: Node A                                          Model: 7520


                              DEVICE NAME

    Device Name:       Node A                                    Clear
    System Name:       ____________________________________      Clear
    System Location:   ____________________________________      Clear
    System Contact:    ____________________________________      Clear




--------------------------------------------------------------------------------
Ctrl-a to access these functions, ESC for previous menu       MainMenu   Exit
 Save
```

Fields on the Device Name screen are null until you enter values. Allowable values are any printable ASCII character.

Saving Configuration Options

When changes are made to the configuration options, the changes must be saved to take effect. Use the Save key or Save Configuration screen.

▶ Procedure

To save configuration options changes:

1. Press Ctrl-a to switch to the screen function key area below the dotted line.
2. Select Save and press Enter. The Save Configuration To screen appears.
3. Select Current Configuration and press Enter. (Current Configuration is the only option. The factory default configuration cannot be altered.)

Configuring the DSU

Configuration option settings determine how the DSU operates. Use the DSU's Configuration branch to display or change configuration option settings.

The DSU is shipped with factory settings in the Default Factory configuration area. The defaults are shown in the configuration options tables.

Accessing and Displaying Configuration Options

To display the configuration options, you must first copy one configuration option set into the edit area.

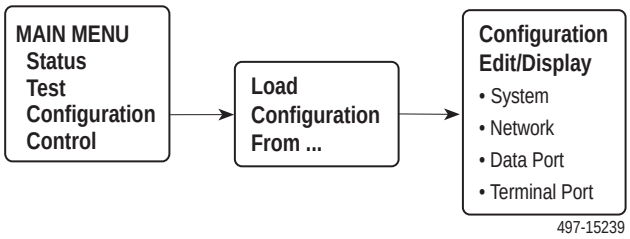
▶ Procedure

To load a configuration option set into the configuration edit area:

1. Follow this menu selection sequence:

   Main Menu → Configuration (Load Configuration From)

2. Select Current Configuration or Default Factory Configuration. Press Enter. The selected configuration option set is loaded and the Configuration Edit/Display menu screen appears.



System Options Menu

For System Options, refer to Table 1. To access the System Options screen, follow this menu selection sequence:

Main Menu → Configuration (Load Configuration From) → Configuration Edit/Display → System

Table 1. System Options (1 of 2)

Operating Mode
Possible Settings: **DDS**, **LADS** Default Setting: **DDS**
Determines the unit's operating mode. The choice depends on the DSU's application. **DDS** – Standard DDS network operation. **LADS** – The Local Area Data Set operating mode requires that the local and remote units are connected directly to each other. This is a point-to-point application; also known as LDM.

Table 1. System Options (2 of 2)

DDS Line Rate (Kbps)
Possible Settings: **2.4, 4.8, 9.6, 19.2, 38.4, 56, 64CC** Default Setting: **9.6**
Sets the line speed for the DDS line. ■ DDS Line Rate (Kbps) option appears when Operating Mode is set to DDS. **2.4 to 56** – 2.4 to 56 kbps line rate. **64CC** – 64 kbps Clear Channel on a 72 kbps circuit.
LADS Timing
Possible Settings: **Internal, External, Receive** Default Setting: **Internal**
Determines the timing source for the unit. ■ LADS Timing option appears when Operating Mode is set to LADS. **Internal** – Timing derived from the unit's local clock. Use this setting for the LADS primary timing unit that establishes the timing for both point-to-point units. **External** – Timing is derived from the external clock provided by the DTE connected to the V.35 interface on circuit CT113 (pins U, W). **Receive** – Timing is derived from the line receive signal unless the unit is running diagnostic tests. During the tests, the timing source is the internal clock. This setting should be used for a LADS secondary timing unit.
LADS Line Rate (Kbps)
Possible Settings: **2.4**, **4.8**, **9.6**, **19.2**, **38.4**, **56**, **64** Default Setting: **9.6**
Sets the line operating rate for LADS operation. ■ LADS Line Rate (Kbps) option appears when Operating Mode is set to LADS. **2.4 to 64** – DSUs communicate at this line rate.
Test Timeout
Possible Settings: **Enable**, **Disable** Default Setting: **Disable**
Allows user-initiated tests to end automatically. **Enable** – User-initiated loopback and pattern tests end when test duration is reached. **Disable** – Tests must be terminated manually from the Network Tests screen. NOTE: Tests commanded by the DTE or network-initiated tests are not affected by this test timeout.
Test Duration (min)
Possible Settings: **1–120** Default Setting: **10**
Determines the number of minutes for a test to be active before automatically ending. ■ Test Duration (min) option appears when Test Timeout is enabled. **1 to 120** – Amount of time in minutes for a user-initiated test to run before terminating.

Network Interface Options Menu

For Network Interface Options, refer to Table 2. To access the Network Interface Options screen, follow this menu selection sequence:

Main Menu → Configuration (Load Configuration From) → Configuration Edit/Display → Network

Table 2. Network Interface Options

Network-initiated DSU Loopback (64K CC)
Possible Settings: **Enable, Disable** Default Setting: **Enable**
Indicates whether the access unit responds to a DSU latching loopback sequence sent by the network as specified by TR62310. ■ Network-initiated DSU Loopback (64K CC) option appears when Operating Mode is set to DDS (see Table 1, System Options). **Enable** – Responds to network-initiated commands to start and stop a latching DSU loopback. **Disable** – DSU will not respond to a DSU loopback initiated by the network.
Data Scrambling (64K CC)
Possible Settings: **Enable, Disable** Default Setting: **Disable**
Determines whether data scrambling is used to suppress the possible simulation of network-initiated DSU latching loopback commands by application data. ■ Data Scrambling (64K CC) option appears when Operating Mode is set to DDS (see Table 1, System Options). **Enable** – Enables data scrambling. The local and remote units must be set the same. **Disable** – No data scrambling.
V.54 Initiated DSU Loopback
Possible Settings: **Enable, Disable** Default Setting: **Enable**
When enabled, user data is looped back to the network when a V.54 Loop Up sequence is received. The DSU loopback ends when a V.54 Loop Down sequence is detected. **Enable** – DSU loopback can be initiated or terminated by a remote unit sending in-band V.54 Loop 2 Up or Down sequences. **Disable** – V.54 Loop 2 sequences are ignored.

Data Port Options Menu

For Data Port Options, refer to Table 3. To access the Data Port Options screen, follow this menu selection sequence:

Main Menu → Configuration (Load Configuration From) → Configuration Edit/Display → Data Port

Table 3. Data Port Options (1 of 3)

DTE Port
Possible Settings: **EIA232, V.35** Default Setting: **EIA232**
Determines the active DTE interface. **EIA232** – The EIA-232 port is the active DTE interface. Use for rates up to and including 19.2 kbps, and distances up to 50 feet. **V.35** – The V.35 is the active DTE interface. Use for all rates and distances up to 1,000 feet. All the following Data Port Options apply to the interface selected.
Invert Transmit Clock
Possible Settings: **Enable, Disable** Default Setting: **Disable**
Determines whether the DSU clock provided on Interchange Circuit CT114, Transmit Signal Element Timing DCE source (TXC), is phase inverted with respect to Interchange Circuit CT103, Transmitted Data (TXD). The feature should be enabled when data errors are occurring due to long cable lengths. **Enable** – The DSU-supplied clock is phase inverted with respect to the transmitted data TXD. **Disable** – The clock supplied by the DSU on TXC is normal (i.e., not inverted).
Port (DTE) Initiated Loopbacks
Possible Settings: **Disable**, **Local, Remote, Both** Default Setting: **Disable**
Specifies whether the DTE can initiate and terminate local and/or remote loopbacks. The DTE loopback control is done through the Interchange Circuits specified by the V.54 standard. **Disable** – No local or remote loopbacks can be initiated by the DTE. **Local** – A local loopback can be controlled by the DTE, via the Interchange Circuit LL (CT141), as specified by V.54. The DTE port remains in loopback as along as LL remains on. Aborting the loopback from the ATI has no effect. **Remote** – A remote digital loopback can be controlled by the DTE, via Interchange Circuit RL (CT140), as specified by V.54. The remote equipment must be able to detect the in-band V.54 loopback sequence. **Both** – Both the local and remote loopbacks can be controlled by the DTE.

Table 3. Data Port Options (2 of 3)

Bilateral Loopback
Possible Settings: **Enable, Disable** Default Setting: **Disable**
If enabled, when a DSU loopback is initiated, a local DTE loopback is also automatically initiated. A Bilateral Loopback can be started by the ATI or by detection of a V.54 Loop 2 Up sequence. **Enable** – When Bilateral Loopback is enabled, running a DSU loopback also automatically starts a local loopback. The local loopback ends when the DSU loopback terminates. **Disable** – Running a DSU loopback does not start a local loopback.
Carrier Control by RTS
Possible Settings: **Constant**, **Switched** Default Setting: **Constant**
Simulates Constant or Switched Carrier operation. **Constant** – The internal RTS is forced on and the DSU is in a constant Data Mode on the transmit line. The external RTS lead is ignored. The actual signal on the line is either all ones (DMI) or DTE transmitted data. **Switched** – RTS is monitored and CMI codes are transmitted when RTS is off.
CTS Control
Possible Settings: **Standard**, **Follow RTS, Forced On, Circuit Assurance, Short Delay, Medium Delay, Long Delay** Default Setting: **Standard**
Specifies the operation of the Interchange Circuit CT106, Clear to Send (CTS), which is an output from the DSU. **Standard** – CTS follows the internal RTS with a fixed delay, except that CTS will be off when a network interface related alarm is detected or a test is active. The active test may be initiated locally, remotely, or by the network. **Follow RTS** – CTS follows the external RTS lead without delay, regardless of alarms and tests. **Forced On** – CTS is always forced on after the unit is powered up with a successful self-test. **Circuit Assurance** – With circuit assurance, CTS operates the same as the Standard option, except that CTS will also be deasserted when CMI codes are being received. **Short Delay** – CTS operates as described for the Standard option except that a 50 ms delay is inserted before CTS is turned on and after RTS is turned on. **Medium Delay** – CTS operates as described for the Standard option except that a 150 ms delay is inserted before CTS is turned on and after RTS is turned on. **Long Delay** – CTS operates as described for the Standard option except that a 500 ms delay is inserted before CTS is turned on and after RTS is turned on.

Table 3. Data Port Options (3 of 3)

RLSD Control
Possible Settings: **Standard**, **Forced On** Default Setting: **Standard**
Specifies the operation of the Interchange Circuit CT109, Received Line Signal Detector (RLSD or CD), which is an output from the DSU. **Standard** – RLSD is asserted when Data Mode is on the receive line. RLSD deasserts when a DDS facility alarm is detected or the DSU is receiving CMI codes. **Forced On** – RLSD is forced on after the unit is powered up with a successful self-test.
DSR Control
Possible Settings: **Standard**, **Forced On, On During Test** Default Setting: **Standard**
Specifies the operation of the Interchange Circuit CT107, Data Set Ready (DSR), which is an output from the DSU. **Standard** – DSR is always asserted, except when a DDS facility alarm is reported or the DSU is in Test mode. **Forced On** – DSR is forced on after the unit is powered up with a successful self-test. **On During Test** – DSU operates the same as the Standard option, except that DSR remains asserted when the DSU is in Test mode to allow the DTE to send test patterns.
Monitor DTR
Possible Settings: **Enable**, **Disable** Default Setting: **Enable**
Indicates to the DSU whether to monitor the Interchange Circuit CT108, Data Terminal Ready (DTR), from the DTE. **Enable** – The DSU monitors the state of DTR on the DTE port and displays it on the System and Test Status screen. **Disable** – DTR is not monitored by the DSU. Use when a DTE does not provide the DTR lead at the interface.

Terminal Port Options

For Terminal Port options, refer to Table 4. To access the Terminal Port Options screen, follow this menu selection sequence:

Main Menu → Configuration (Load Configuration From) → Configuration Edit/Display → Terminal Port

Table 4. Terminal Port Options

Monitor DTR
Possible Settings: **Enable**, **Disable** Default Setting: **Enable**
Specifies monitoring of the Data Terminal Ready (DTR) control lead. **Enable** – Standard operation of the DTR control lead. **Disable** – DTR is ignored. Some external device connections may require this setting.
Inactivity Timeout
Possible Settings: **Enable, Disable** Default Setting: **Disable**
Provides automatic logoff of an ATI session through the Terminal Port. When the session is closed, User Interface Idle appears on the screen and the unit toggles the Terminal port DSR lead. **Enable** – The ATI session terminates automatically after the Disconnect Time set in the next option. When the session was occurring over an external modem connected to the Terminal port, the modem will interpret the DSR toggle as DTR being dropped and disconnect. **Disable** – An ATI session through the Terminal port will remain active indefinitely.
Disconnect Time(minutes)
Possible Settings: **range 1 – 60** Default Setting: **5**
Number of minutes of inactivity before the ATI session terminates automatically. Timeout is based on no keyboard activity. ■ Disconnect Time(minutes) option appears when Inactivity Timeout is enabled. **1 to 60** – The ATI user session is closed after the selected number of minutes.

Important Safety Instructions

1. Read and follow all warning notices and instructions marked on the product or included in the manual.
2. Slots and openings in the cabinet are provided for ventilation. To ensure reliable operation of the product and to protect it from overheating, these slots and openings must not be blocked or covered.
3. Do not allow anything to rest on the power cord and do not locate the product where persons will walk on the power cord.
4. Do not attempt to service this product yourself, as opening or removing covers may expose you to dangerous high voltage points or other risks. Refer all servicing to qualified service personnel.
5. General purpose cables are provided with this product. Special cables, which may be required by the regulatory inspection authority for the installation site, are the responsibility of the customer.
6. When installed in the final configuration, the product must comply with the applicable Safety Standards and regulatory requirements of the country in which it is installed. If necessary, consult with the appropriate regulatory agencies and inspection authorities to ensure compliance.
7. Input power to this product must be provided by one of the following: (1) a UL Listed/CSA certified power source with a Class 2 or Limited Power Source (LPS) output for use in North America, or (2) a certified power source with a Safety Extra Low Voltage (SELV) output for use in the country of installation.
8. A rare phenomenon can create a voltage potential between the earth grounds of two or more buildings. If products installed in separate buildings are **interconnected**, the voltage potential may cause a hazardous condition. Consult a qualified electrical consultant to determine whether or not this phenomenon exists and, if necessary, implement corrective action prior to interconnecting the products.
9. In addition, if the equipment is to be used with telecommunications circuits, take the following precautions:
   - — Never install telephone wiring during a lightning storm.
   - — Never install telephone jacks in wet locations unless the jack is specifically designed for wet locations.
   - — Never touch uninsulated telephone wires or terminals unless the telephone line has been disconnected at the network interface.
   - — Use caution when installing or modifying telephone lines.
   - — Avoid using a telephone (other than a cordless type) during an electrical storm. There may be a remote risk of electric shock from lightning.
   - — Do not use the telephone to report a gas leak in the vicinity of the leak.

Notices

⚠ WARNING:

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

The authority to operate this equipment is conditioned by the requirements that no modifications will be made to the equipment unless the changes or modifications are expressly approved by Paradyne Corporation.

⚠ WARNING:

To Users of Digital Apparatus in Canada:

This Class A digital apparatus meets all requirements of the Canadian interference-causing equipment regulations.

Cet appareil numérique de la classe A respecte toutes les exigences du règlement sur le matérial brouilleur du Canada.

Government Requirements

Certain governments require that instructions pertaining to connection to the telephone network be included in the installation and operation manual. Specific instructions are listed in the following sections.

Notice to Users of the Telephone Network in the United States

This equipment complies with Part 68 of the FCC rules. On the bottom of the equipment is a label that contains, among other information, the FCC registration number for this equipment. If requested, please provide this information to your telephone company.

If your DSU causes harm to the telephone network, the telephone company may discontinue your service temporarily. If possible, they will notify you in advance. But if advance notice is not practical, you will be notified as soon as possible. You will be advised of your right to file a complaint with the FCC.

Your telephone company may make changes in facilities, equipment, operations, or procedures that could affect the proper operation of your equipment. If so, you will be given advance notice so as to give you an opportunity to maintain uninterrupted service.

No repairs may be performed by the user. Should you experience difficulty with this equipment, refer to *Warranty, Sales, and Service Information* on page 18.

For Digital Data Service (DDS) installations, inform the local telephone company of the appropriate facility interface code for the service you desire.

DDS Facility	
Interface Code	**Data Rate (kbps)**
04DU5-24	2.4
04DU5-48	4.8
04DU5-96	9.6
04DU5-19	19.2
04DU5-38	38.4
04DU5-56	56
04DU5-64	64

The DDS Service Order Number is 6.0Y. The jack configuration required is RJ48S.

After the telephone company has installed the requested service and jack, you can connect the DSU with the cable provided. An FCC-compliant telephone cord and modular plug are provided with this equipment. This equipment is designed to be connected to the telephone network or premises wiring using a compatible modular jack that is Part 68 compliant.

Canada
Notice to Users of the Canadian Telephone Network

The Industry Canada label identifies certified equipment. This certification means that the equipment meets telecommunications network protective, operational and safety requirements as prescribed in the appropriate Terminal Equipment Technical Requirements document(s). 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. The customer should be aware that compliance with the above conditions may not prevent degradation of service in some situations.

Repairs to certified equipment should be coordinated by a representative 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 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.

The Ringer Equivalence Number (REN) assigned to each terminal device provides an indication of the maximum number of terminals allowed to be connected to a telephone interface. The termination on an interface may consist of any combination of devices subject only to the requirement that the sum of the Ringer Equivalence Numbers of all the devices does not exceed 5.

If your equipment is in need of repair, refer to the procedures described in the next section.

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

Document Feedback

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