



Installation and Configuration Guide



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URL References

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Table of Contents

Installation and Setup	5
Product Overview	5
Installation	5
Initial Hardware Installation to Configure the ATS-NTE	6
Connecting Optional Devices to the ATS-NTE	6
Powering on the ATS-NTE	7
Other Installation and Configuration Procedures	7
Configuring the Network Settings on the ATS-NTE	8
Changing the Default Computer and Workgroup Names	9
Configuring Dialin for NetMeeting	10
Setting Up Remote Management	11
Configuring RAS TCP/IP for Dialin.....	11
Client Configuration	13
Managing Files on the ATS-NTE	14
Using NetMeeting	14
Accessing the ATS-NTE.....	14
Retrieving Files from the ATS-NTE	15
Sending Files to the ATS-NTE.....	16
PC104 RocketPort Option	17
Default PC104 Port Configuration	17
Configuring the Serial Ports	18
Connecting Serial Devices	22
Installing Modems on the RocketPort Serial Ports	22
Using the ATS-NTE Standard Modem Driver	22
Using the Modem Manufacturer's Driver.....	26
RocketPort Serial Port Connectors	29
DB9 Connectors	29
Building Additional DB9 Loopback Plugs	29
DB25 Connectors	29
Building Additional DB25 Loopback Plugs	30
RJ45 Connectors	30
Building Additional RJ45 Loopback Plugs	30
Building an RS-485 Test Cable	30
Building Null-Modem Cables	31
Building Straight-Through Cables	31
Troubleshooting Serial Ports	31
Using Test Terminal.....	31
Testing a Control Port	32
Testing an RS-485 Port.....	33
Test Terminal Modem Control Signals.....	33
Using Port Monitor	33
Starting Port Monitor	34
Changing Screen Appearance	34
Column Setup	35
Report Configuration.....	35
Port Monitor Files.....	36
Port Monitor Variables	37
Using Peer Tracer	38
Starting Peer.....	38
Log Functions.....	39
Using Peer	39
Other Peer Commands	39
Device Driver and OS Capabilities and Limitations	39
Certified PCMCIA Adapters	41
Control Certified PCMCIA Devices	41
Xircom CreditCard Wireless Ethernet Adapter	41
Enabling the Ethernet Adapter	41
Changing the Client Name.....	42
Setting Up the Utilities	43
Enabling Wired Equivalent Privacy (WEP)	43
Verifying the Ethernet Adapter Set Up.....	45

Xircom RealPort Modem 56 GlobalACCESS Adapter	46
Installing Xircom Utilities.....	46
Selecting a Country Code	47
Reconfiguring AUX A as a Standard Serial Port.....	48
Using the AUX A Port as a COM Port	48
Using the CONSOLE Port	49
Using the CONSOLE Port.....	49
Using the CONSOLE Port as a COM Port.....	50
Troubleshooting and Technical Support	51
Troubleshooting Checklist	51
Using the Recovery CD	52
Running the Diagnostics	52
Customer Support Policy	53
Technical Support.....	53
Repair and Return Policy.....	53
Appendix A. Connectors.....	54
VGA Connector.....	54
PS/2 Keyboard and Mouse Connectors.....	54
Ethernet Connectors	54
Compact Flash Disk Connector	55
AUX A and CONSOLE Port Connectors	55
PARALLEL Port.....	56
Serial Ports 1-8 Connector (Optional)	57
Appendix B. Specifications and Notices	58
Product Specifications.....	58
Electromagnetic Compliances	58
Environmental Condition Specifications	59
Hardware Specifications.....	59
Technical Specifications	59
Default Operating System Configuration.....	60
System.....	60
Application	63
Notices.....	63
Radio Frequency Interference (RFI) (FCC 15.105)	63
Labeling Requirements (FCC 15.19).....	63
Modifications (FCC 15.21)	64
Serial Cables (FCC 15.27)	64
Underwriters Laboratory	64
Important Safety Information.....	64
Appendix C. Default System Values	65
System I/O Address Map	65
First MB Memory Map.....	66
Appendix D. Changing BIOS Configuration	67
Getting Started	67
Standard CMOS Setup	68
BIOS Features Setup	68
Chipset Features Setup.....	69
Power Management Setup	69
PNP/PCI Configuration.....	70
Load BIOS Defaults.....	71
Load Setup Defaults.....	71
Integrated Peripherals.....	72
Supervisor Password and User Password.....	72
SVGA Setup Introduction.....	73
Index	74

Installation and Setup

This section discusses the following topics:

- Product overview.
- Installing the hardware.
- Configuring the network settings on the ATS-NTE.
- Changing the default computer and workgroup names, for multiple unit installations.
- Configuring dialin on the ATS-NTE for NetMeeting.
- Setting up remote management.

Please refer to the End-User License Agreement for Microsoft® Windows® NT Embedded shipped with the ATS-NTE for licensing information.

Product Overview

The DeviceMaster ATS-NTE is a standalone, user programmable microcomputer designed to run both existing and newly developed Microsoft Windows applications in a solid-state environment.



USB is not supported by Windows NT Embedded.

The ATS-NTE model provides built-in Ethernet connectivity and is designed for “satellite” deployment through remote management and support of the server, its local programs and the attached serial devices.

The DeviceMaster ATS-NTE is running Control Corporation’s customized version of the Windows NT® 4.0 Embedded operating system. With a few small exceptions, the Embedded NT operating system performs in a similar manner to a standard “desktop” version of Windows NT 4.0 Workstation. See [Appendix B. Specifications and Notices](#) starting on Page 58 for detailed default system information.

If you are unfamiliar with using an embedded operating system, you should review information about the operating system before installation. Please refer to the existing documentation provided by Microsoft at <http://www.microsoft.com/windows/embedded/xp/previous/default.asp>.

Installation

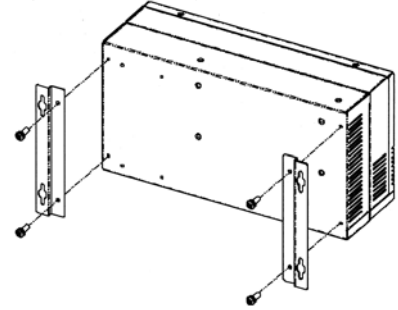
Installation of the hardware may vary depending on the configuration you ordered from Control. Although the ATS-NTE can be placed in a remote location, you will need to connect a monitor, keyboard, and mouse to configure the ATS-NTE before it is placed into service.

Follow the following procedures to setup the DeviceMaster ATS-NTE.

Note: If you need pin out information about any of the connectors on the ATS-NTE, see [Appendix A.Connectors](#) starting on Page 54.

Initial Hardware Installation to Configure the ATS-NTE

1. Place the DeviceMaster ATS-NTE on a stable surface or attach it to a suitable surface using the mounting brackets shipped with the device.
2. Verify that the compact flash is fully inserted. When installed correctly, the compact flash is recessed into the ATS-NTE and the eject button protrudes about 1/4 inch. If necessary, without using excessive force or sharp objects, seat the compact flash in its socket. Too much force can damage the device.
3. Connect the 15-pin monitor cable from a standard VGA monitor to the **VGA** connector.
4. Connect a standard PS/2 compatible keyboard (6-pin mini DIN) into the **KEYBOARD** connector.
5. Connect a PS/2 compatible mouse (6-pin mini DIN) into the **MOUSE** connector.



Connecting Optional Devices to the ATS-NTE

Connect the devices appropriate for how you plan to use the ATS-NTE:

1. To dial-in and manage the ATS-NTE through a modem, connect an external modem to the **AUX A** connector of the ATS-NTE.

If you want to connect a serial device (other than a modem) to this port, you must turn off RAS and configure the port for your serial device. See [Using the AUX A Port as a COM Port](#) on Page 48 to change the default port set up.

2. If you want to connect a parallel printer to the system, connect the printer cable to the **PARALLEL** connector.

Note: The printer configuration supports the Epson™ FX80.

3. Optionally, insert one of the Comtrol approved PCMCIA devices into one of the **PCMCIA** slots. The PCMCIA device must be inserted in the slot if you want to configure the device in the following sections.

Note: The ATS-NTE PCMCIA option supports two Type II PCMCIA slots or one Type III slot, which is installed at the factory. Drivers for Comtrol approved PCMCIA devices are installed in the system.

- **Xircom® CreditCard™ Wireless Ethernet Adapter**

Carefully align the adapter (with the flat side down, so that the Xircom Activity and Status LEDs are visible from the top of the device) and gently seat it into either the top or bottom rail of the PCMCIA slot.

- **Xircom RealPort™ Modem 56 GlobalACCESS Adapter**

- a. Carefully align the adapter (with the flat side down, so that the Xircom LED is on the left side) and gently seat it into the ATS-NTE.
- b. Connect the phone line.

Note: If you refer to the Xircom Quick Start card, please note that the driver is already installed and configured as COM3.

- **PCMCIA to CompactFlash Adapter**

- a. Insert a compact flash into the PCMCIA to CompactFlash adapter.
- b. Carefully align the PCMCIA adapter (compact flash facing up) with the bottom rail and gently seat it into the ATS-NTE.

Note: The operating system only supports one PCMCIA to CompactFlash adapter.

The PCMCIA compact flash will display as drive d: after logging in.

4. Optionally, connect the PC104 RocketPort® cable (quad- or octacable) to the SERIAL PORTS 1-8 connector.

Note: If you have the PC104 RocketPort card option installed, do not connect any RS-422 or RS-485 devices to the serial ports until you have configured the driver.

Powering on the ATS-NTE

After connecting the cables and devices, you can power on the ATS-NTE and login to the operating system.

1. Connect the power cable into the power supply and connect the power supply (with the latch and key up) into the **POWER** connector.
2. Connect the power cable to a power source.

Note: The system beeps during the power on cycle. If you have the RocketPort PC104 option installed, solid yellow Tx LEDs also indicate that you have power to the unit.

3. When prompted by Windows, press **Ctrl + Alt + Del**.
4. At the Windows Login prompt, enter the Administrator's password. **Administrator** is the default password and it is case-sensitive.

Note: After logging into the ATS-NTE, you will see three applications running on your taskbar. These applications (*WebServer.exe*, *SocketServer.exe*, and *SystemManager.exe*) must be running in the background to use these applications. See ftp://ftp.comtrol.com/Dev_Mstr/ATS/NTE/BrowserInterface for more information about these applications.

Other Installation and Configuration Procedures

After the initial installation of the hardware there are other procedures you may need to perform to complete installation and configuration of the ATS-NTE.

- If you want to connect and configure the ATS-NTE to a network (Ethernet or PCMCIA wireless adapter), review and perform these procedures:
 - [Configuring the Network Settings on the ATS-NTE](#) on Page 8, for initial setup.
 - [Changing the Default Computer and Workgroup Names](#) on Page 9, if you are configuring multiple ATS-NTE units on your network.
 - [Configuring Dialin for NetMeeting](#) on Page 10, if you want to use NetMeeting to control the ATS-NTE remotely.
- If you installed a modem (AUX A or PCMCIA) review and perform these procedures:
 - [Configuring Dialin for NetMeeting](#) on Page 10, if you want to control the ATS-NTE from a remote location.
 - [Setting Up Remote Management](#) starting on Page 11, to configure RAS TCP/IP for an address pool.
- If you ordered the PC104 RocketPort option, see [Configuring the Serial Ports](#) on Page 18 before connecting your serial devices.

Note: Only install serial device drivers for the Windows NT Embedded operating system. Refer to the [Customer Support Policy](#) on Page 53, before installing any drivers.
- If you ordered a PCMCIA option, see the appropriate subsection for more information:
 - After you configure NetMeeting dialin and RAS, see [Xircom RealPort Modem 56 GlobalACCESS Adapter](#) on Page 46 to load the Xircom Utilities from the Xircom CD (V2.62). If using outside the United States or Canada,

- you will need the Xircom Utilities to set the modem country code.
- After you configure the network settings and NetMeeting dialin, see [Xircom CreditCard Wireless Ethernet Adapter](#) on Page 41, to complete the installation.

Configuring the Network Settings on the ATS-NTE

After installing the hardware, you are ready to configure the network. The ATS-NTE provides Ethernet ports that function as two independent Ethernet network interface cards and support for an optional wireless adapter in the PCMCIA slot.

Each network port must be connected to a different network segment or the ports will conflict with each other. If the ports are not connected to different network segments, NETBEUI will shut down all network services.

Note: Before you can configure the Xircom CreditCard Wireless Ethernet adapter, it must be enabled. See [Enabling the Ethernet Adapter](#) on Page 41.

1. Log into the ATS-NTE as an administrator. **Administrator** is the default password and it is case-sensitive.
2. Open the **Network** control panel and select the **Protocols** tab.
 - a. Highlight **TCP/IP Protocol** and select **Properties**.

Note: Do NOT remove any of the adapters from the network because you cannot re-install the drivers.

- b. Select the adapter (1, 2, or 10) in the drop list that corresponds to network adapter you want to configure. The default network settings for the adapters are:

Adapter#1

IP Address 192.168.250.251
 Subnet mask 255.255.255.0
 Gateway 192.168.250.1

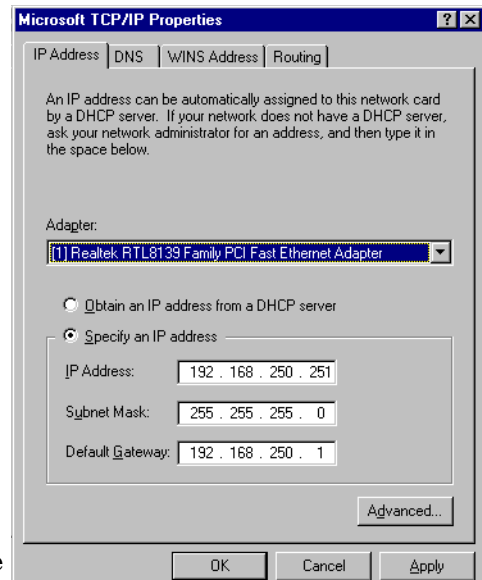
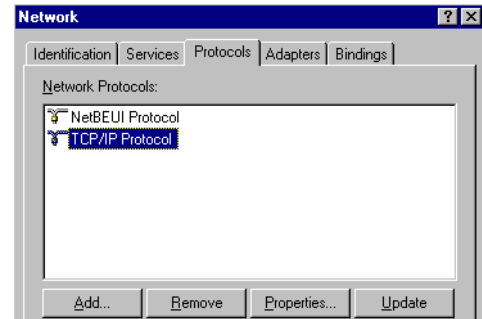
Adapter#2

IP Address 192.168.255.252
 Subnet mask 255.255.255.0
 Gateway 192.168.255.1

Adapter#10

IP Address 192.168.245.253
 Subnet Mask 255.255.255.0
 Default Gateway 192.168.245.1

- d. Make any necessary changes to the IP address, selection by DHCP, or other TCP/IP parameters.
- e. Select **Ok** to close the Properties popup.
- f. Select **Close** in the Protocol tab.
- g. Select **Yes** to shutdown and restart the computer.



- Before the ATS-NTE reboots, connect a standard Ethernet cable to the Ethernet port (or ports) that corresponds to the port (or ports) configured in [Step 2](#).

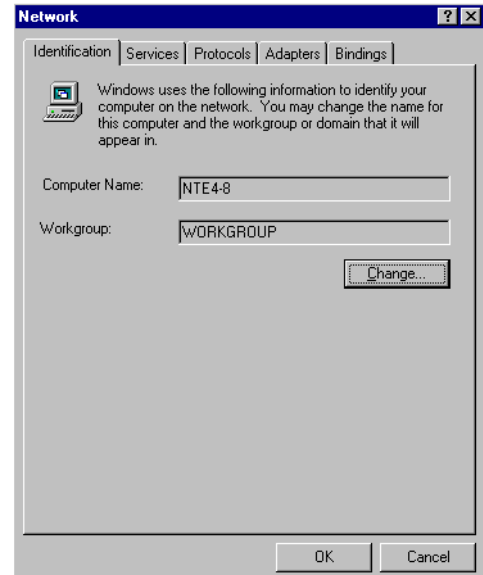
The ports are labeled **1** and **2 (10/100 ETHERNET)**. For connector information, see [Ethernet Connectors](#) on Page 54. After the ATS-NTE boots and is running, the green LED indicates receive activity and the yellow LED indicates transmit activity on the network.

Changing the Default Computer and Workgroup Names

If you plan on installing more than one ATS-NTE on your network, you must change the default computer name.

- Right-click the **Network Neighborhood** icon and select **Properties**.
- Select the **Identification** tab and the **Change** button.
- Enter a new computer name and select **Ok**.
- To change the Workgroup name, select the **Change** button, enter a new Workgroup name and select **Ok**.
- Reboot the system so that the changes take affect.

Note: *If you change the computer's name and you have installed the Xircom CreditCard Wireless Ethernet adapter, make sure that you change the name in the Network control panel ([Step 3](#) on Page 42).*



Configuring Dialin for NetMeeting

NetMeeting can be used to access the Windows NT 4.0 Embedded desktop from a remote location through a network connection (Ethernet or wireless) or a modem connection (AUX A or PCMCIA modem). The desktop can be used to configure and manage the ATS-NTE. Files can also be transferred through NetMeeting in the event that the file sharing on the ATS-NTE is not available or enabled.

Use the following procedure if you want to use NetMeeting to control the ATS-NTE.

1. From the **Start** button, select **Programs/ Administrative Tools (Common)/User Manager**.
2. Select **New User** from the **User** menu.

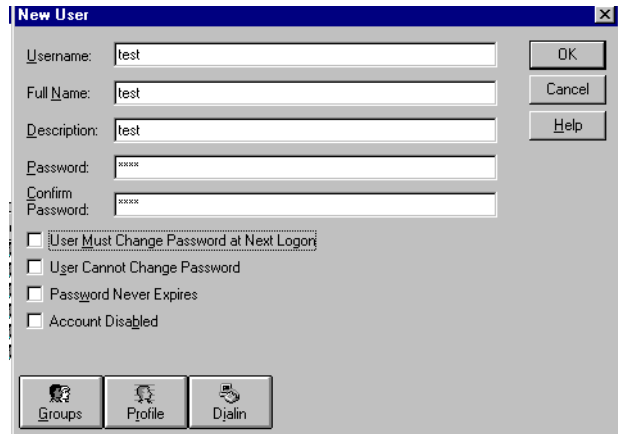
3. Enter the new user name, the user's full name, and a description.

4. Enter a password and confirm the password.

Note: NetMeeting requires a password.

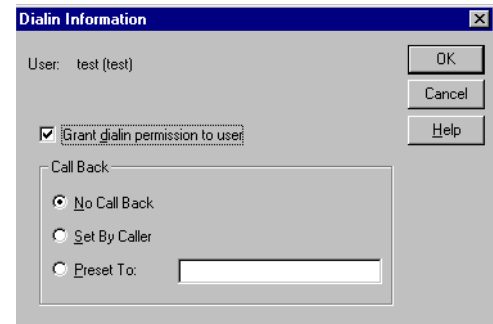
5. Uncheck **User Must Change Password at Next Login**.

Note: If you do not uncheck this option, the user must sign-on the ATS-NTE before using NetMeeting from a remote site. NetMeeting does not permit you to change the password when you log in.



6. Select the **Dialin** button.

7. Select the **Grant dialin permission to user** option and then the **Ok** button to close the Dialin Information pop-up. If necessary, select the call back type.



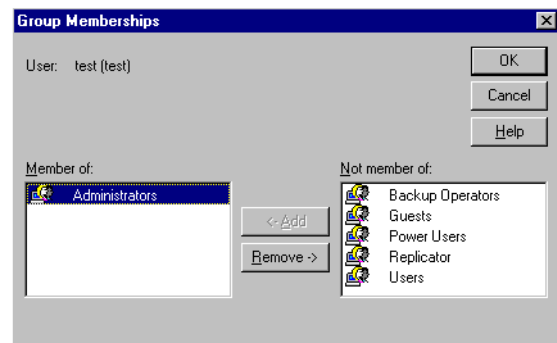
8. Select the **Groups** button.

9. Make the user a **Member of the Administrators** group and select the **Ok** button.

10. Select **Ok** to close the New User pop-up.

11. Exit the User Manager.

Note: You may be requested to provide a new password the first time you sign in with the new user name.



Setting Up Remote Management

Before setting up remote management, make sure that you have already performed the procedures in [Configuring Dialin for NetMeeting](#) on Page 10. The ATS-NTE has the following drivers installed that require additional configuration for remote management:

- A standard 28.8 Kbps modem driver for **AUX A** with Remote Access Service (RAS) enabled on COM2.
- Xircom RealPort Modem 56 GlobalACCESS adapter driver that is installed on COM3.

Review and perform the following procedures if you want to manage the ATS-NTE from a remote (client) site:

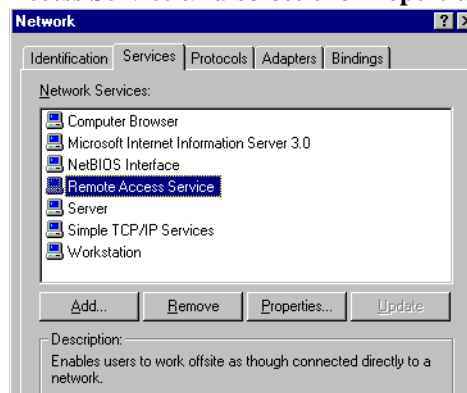
- *Configuring RAS TCP/IP for Dialin* (below)
- [Client Configuration](#) on Page 13

Configuring RAS TCP/IP for Dialin

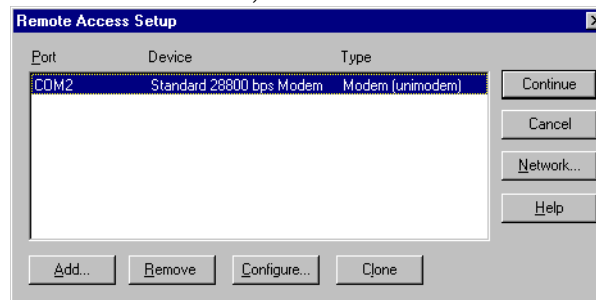
To use NetMeeting on a dialin connection with **AUX A** or the Xircom modem, you must change the RAS TCP/IP configuration.

Note: *If you plan on configuring the Xircom CreditCard Wireless adapter, you must enable the device ([Enabling the Ethernet Adapter](#) on Page 41) before any changes to the network bindings. Failure to do so before configuring RAS will “orphan” the Xircom wireless adapter from the TCP/IP stack. That is, this adapter will lose its pre-configured binding to the network protocols and services.*

1. Open the **Network** control panel and select the **Services** tab.
2. Highlight **Remote Access Service** and select the **Properties** button.

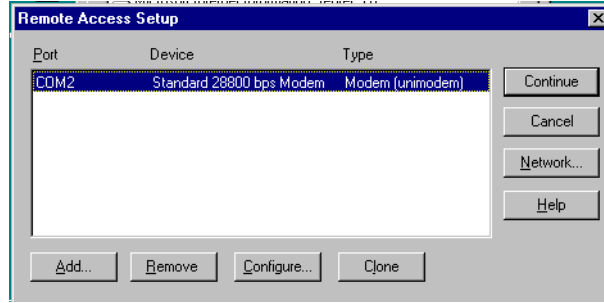


3. To configure a modem on **AUX A**, select the **Network** button and go to Step 5.

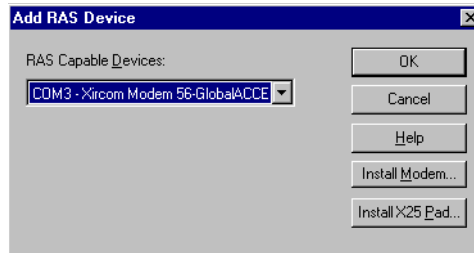


Note: *If you want to configure the Xircom Modem 56-Global modem with **Receive calls only** or **Dial Out and Receive Calls** capabilities, you must change COM2 to a dial out only configuration.*

4. To configure the Xircom Modem 56-GlobalACCESS modem:
 - a. Select the **Add** button.



- b. Select **COM3 - Xircom Modem 56-GlobalACCESS** from the RAS Capable Devices drop list and select **Ok**.



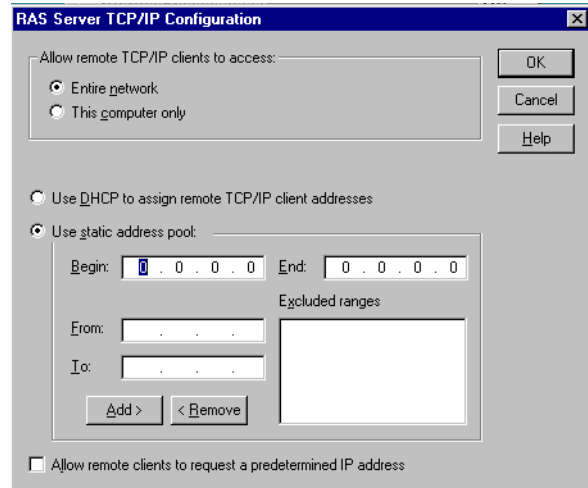
- c. Go to Step 5.
5. Select the **TCP/IP Configure** button.



6. Select **Use static address pool**, enter a range of valid IP addresses, and then select the **Ok** button to close the RAS Server TCP/IP Configuration popup.

Note: *You may want to note the Begin number assigned to the pool because you will need that IP address if dialing in through NetMeeting.*

7. Select **Ok** to close the Network Configuration popup.
8. Select the **Continue** button in the Remote Access Setup popup.
9. Select the **Close** button in the Network window.
10. Shutdown and restart the system as prompted.



Client Configuration

Before you can manage the ATS-NTE remotely, you must set up a dial up network connection on the client. To initiate a NetMeeting session, see [Accessing the ATS-NTE](#) on Page 14.

Managing Files on the ATS-NTE

You can share the ATS-NTE and use Windows Explorer to access or move files or applications to or from any remote system. In addition, you may want to use NetMeeting to control the ATS-NTE from a remote (client) system.

Note: Compact flash technology does not support an unlimited number of writes. Use the compact flash to store applications but avoid using it for file storage. If your application generates files, save the files on a remote system.

Using NetMeeting

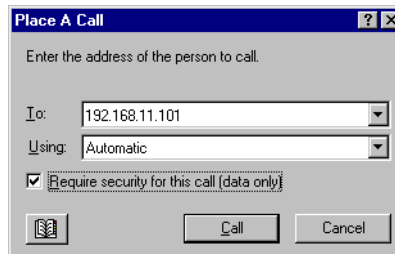
NetMeeting can be used to control the ATS-NTE from a remote location and to transfer or retrieve files through a modem or a network connection.

Accessing the ATS-NTE

Use the following procedure to access the ATS-NTE from a remote (client) system.

Note: The ATS-NTE must have been previously configured with a user name and password that has dial-in privileges, see [Configuring Dialin for NetMeeting](#) on Page 10.

1. If you are using a modem, create a dialup connection to the ATS-NTE and make the connection to the ATS-NTE.
2. Start up NetMeeting on the client. The following shows the steps for a Windows NT client:
 - a. Start NetMeeting from the **Start** button **Programs/Accessories/Communications/NetMeeting**.
 - b. Select **Call** and **New Call**.
 - c. Enter the IP address of the ATS-NTE, check security call, and select **Call**. NetMeeting requires that the call be secure.

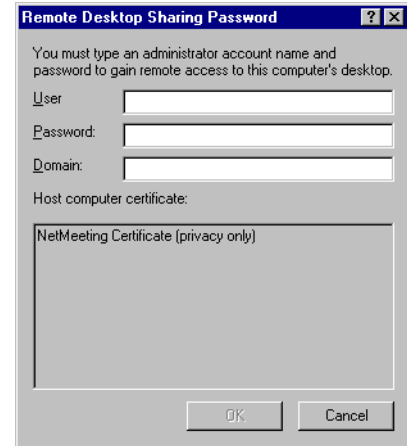


Note: If connecting through a modem, use the beginning static IP address that was assigned in [Configuring RAS TCP/IP for Dialin](#) on Page 11.

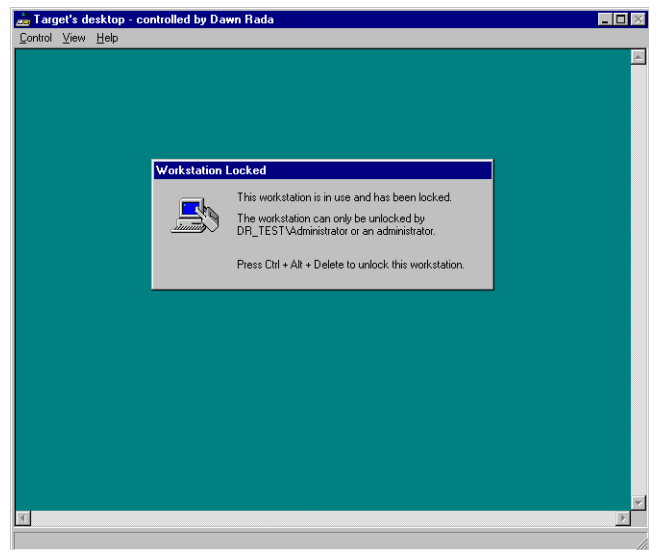
- d. Enter the user name and password you created on the ATS-NTE with dialin privileges and select **Ok**. Leave the Domain name blank.

Note: *If the Remote Desktop Sharing Password popup returns after selecting Ok, check with the Administrator to see if your user name was set up without the need to change the password during the first login. NetMeeting cannot change your password.*

The ATS-NTE will appear on your remote desktop.



3. Select the **Control** menu and then **Send Ctrl+Alt+Del** to log onto the ATS-NTE.



Retrieving Files from the ATS-NTE

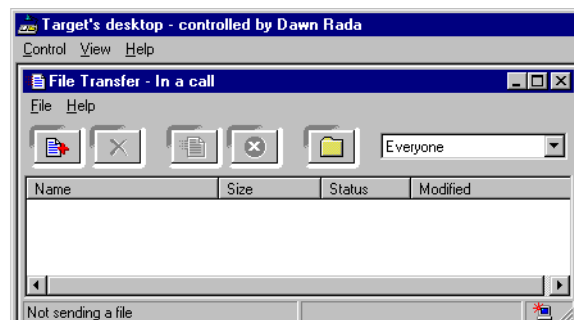
Use the following procedure if you want to retrieve a file from the ATS-NTE.

1. Start up NetMeeting on the remote system. (Use [Accessing the ATS-NTE](#) on Page 14, if necessary).
2. After accessing the ATS-NTE, right-click on the NetMeeting Remote Desktop Sharing icon in the ATS-NTE task bar and select **Send files**.



3. Select **Add Files** in the **File** menu and select the files you want to transfer.
4. Select **Send All** or **Send a File** from the **File** menu.
5. Close the Transfer Complete pop-ups.

The files are copied into the **C:\Program Files\NetMeeting\Received Files** subdirectory.

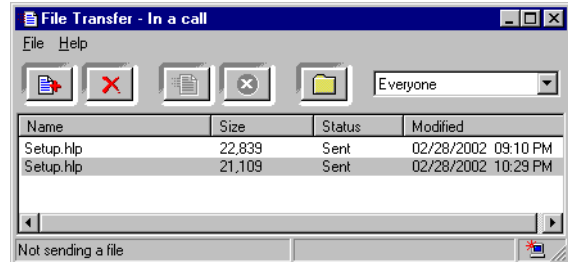


**Sending Files to the
ATS-NTE**

Use the following procedure if you want to send a file to the ATS-NTE.

Note: *Compact flash technology does not support an unlimited number of writes. Use the compact flash to store applications but avoid using it for file storage. If your application generates files, save the files on a remote system.*

1. Start up NetMeeting on the remote system. (Use [Accessing the ATS-NTE](#) on Page 14, if necessary).
2. Select **File Transfer** from the **Tools** menu.
3. Select **Add Files** from the **File** menu and select the files you want to transfer.
4. Select **Send All** or **Send a File** from the **File** menu.
5. Close the Transfer Complete popup.



The files are copied into the
C:\Winnt\rds\Received Files subdirectory.

PC104 RocketPort Option

The PC104 RocketPort serial card is optional in the DeviceMaster ATS-NTE.

Note: *This option can only be installed by Comtrol.*

This section discusses the following topics:

- PC104 RocketPort default settings.
- Configuring the serial ports for your serial devices. Review *Default PC104 Port Configuration* (below) to determine whether you need to reconfigure any of the default settings.
Note: *The driver default for the ports is RS-232.*
- Connecting your serial devices to the ATS-NTE.
- Adding modems on the serial ports:
 - Using the ATS-NTE default driver.
 - Using the modem manufacturer's driver.
- RocketPort quad- or octacable:
 - Connector pinouts
 - Building loopback plugs
 - Building cables (null-modem and straight-through).
- Troubleshooting serial ports with Comtrol tools (Test Terminal and PortMon).
- Device driver and operating system capabilities and limitations.

Default PC104 Port Configuration

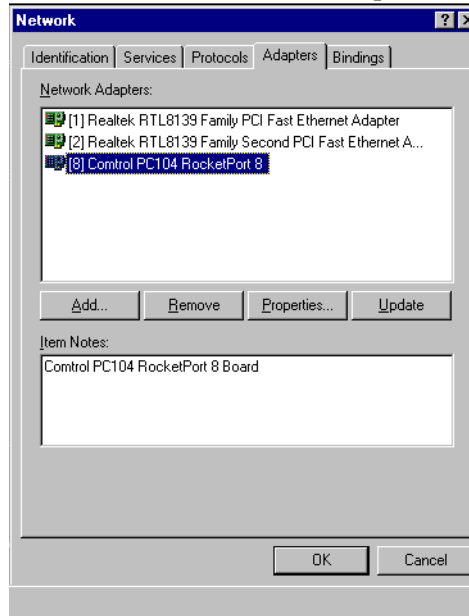
This subsection lists the default configuration values for the RocketPort PC104. If these settings are suitable for your installation, you do not need to configure the driver and can begin connecting your devices using [Configuring the Serial Ports](#) on Page 18.

Item	Default Value
Mode	RS-232
Starting COM Port	COM4 (see Page 18 for more information)
Verbose Event log	Off
Scan Rate	10 ms (see Page 21 for more information)
Override and lock baud rate to	None
Timeout on transmit data on port close	0 sec
Map 2 stop bits to 1	Disabled
Wait on physical transmission before completing write	Disabled

Configuring the Serial Ports

Use the following procedure if you need to reconfigure the driver for your serial devices.

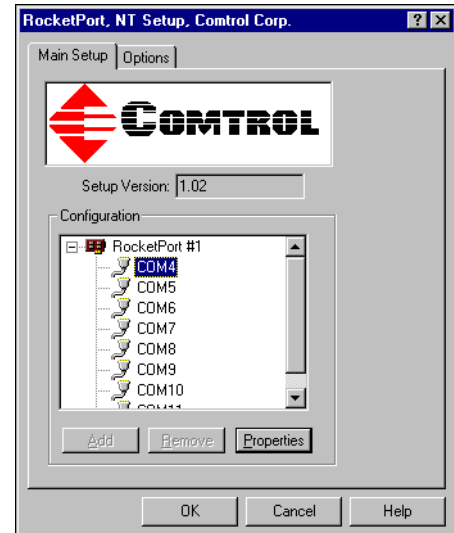
1. Right-click the **Network Neighborhood** icon and select **Properties**.
2. Select the **Adapters** tab.
3. Highlight **Control RocketPort** and select the **Properties** button.



4. Highlight the port for which you want to configure COM port characteristics and select **Properties**.

Note: *COM4 is the default starting COM port.*

- COM1 is assigned to the **CONSOLE** port.
- COM2 is assigned to the **AUX A** port.
- COM3 is assigned to the optional PCMCIA Ethernet/Modem cards.



a. Change the communications mode to match the device you plan to connect.

b. If necessary, set an **Override and lock baud rate** to value.

This option lets you lock selected ports to specific baud rates. After you do so, no matter what baud rate is selected in a host application, the *actual* rate used is the rate specified here.

c. If necessary, set the **Time on transmit data on port close** value.

Use this drop list to select the length of time to wait for data to clear the transmit buffer after a host application has closed the port. This is typically used with peripheral devices such as printers, to give the data sufficient time to flush through the system.

d. If necessary, select the **Map CD to DSR** option.

This option is used in installations where there is no connection to the port's DSR input. Check this box to cause the CD input to appear as DSR to the host application, and to perform hardware handshaking with CD rather than DSR. This is ignored if flow control is not enabled via IOCTL_SERIAL_SET_HANDFLOW.

e. If necessary, set the **Wait on physical transmission before completing write** option.

This option forces all write packets to wait until the transmit data has physically completed the transmission before returning completion to the host application. The default mode (box not checked) is to buffer the data in the transmit hardware buffer, and return completion as soon as the packet is in the buffer.

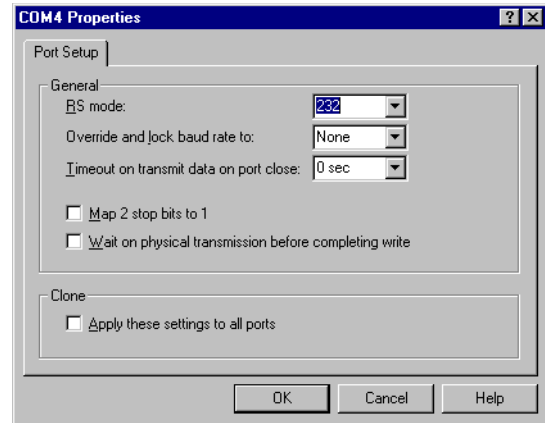
f. Select the **Clone** option if you want to clone all of the ports on the adapter with the characteristics set in this port.

Note: *If this box is not checked, changes apply to the selected port only.*

g. Select **Ok** to make the changes to the selected port.

If you select 485 as the RS Mode, this popup appears.

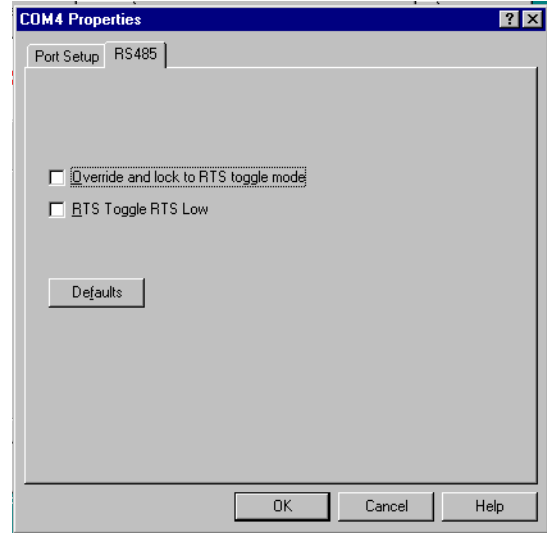
h. Repeat Step 4 for each port that requires configuration.



5. If you selected RS-485 as the communications mode, highlight the port, select **Properties** and then the RS-485 tab.

a. Check the **Check the RS-485 Port Properties - RTS Toggle RTS Low** box to toggle the RTS output signal low during data transmission. If this box is not checked, RTS is toggled high (asserted) during data transmission.

b. Check the **RS-485 Port Properties - Override and lock to RTS toggle mode** box to lock the port in RTS toggle mode, then set the mode (low or high) as desired. If this box is not checked, the RTS output signal is ignored.



c. Select **Ok** to make the changes to the selected port.

6. To change the name of the PC104 RocketPort adapter or the starting COM port number, highlight **RocketPort #1** and select **Properties**.

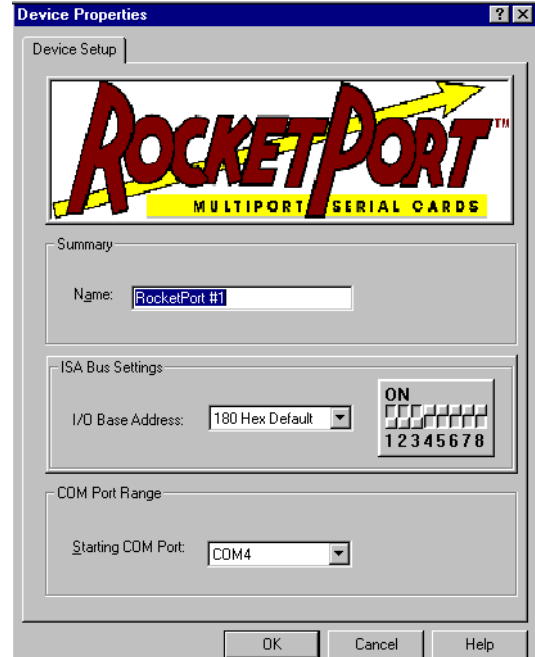


- a. Change the **Name** or the **Starting COM Port** number.

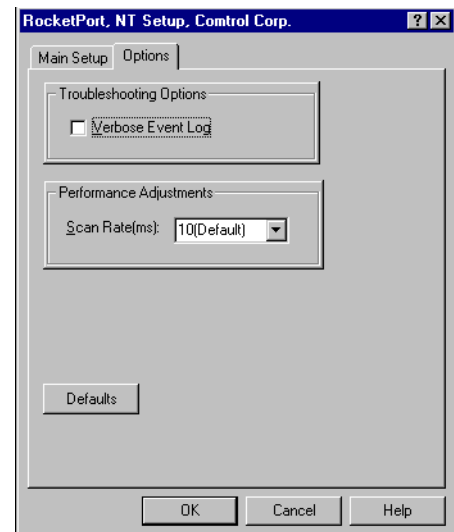
***Note:** Do not change the I/O Base Address. It is preset at the factory and it cannot be changed in the field.*

 - COM1 is assigned to the **CONSOLE** port.
 - COM2 is assigned to the **AUX A** port.
 - COM3 is assigned to the optional PCMCIA Ethernet/Modem card.

The default starting COM port number is COM4.
- b. Select **Ok** to return to the Main Setup screen.



7. If you want to set the verbose event log or change the scan rate, select the **Options** tab.
 - a. Check **Verbose Event Log** if you want more information logged in to the Event Viewer when the driver loads.
 - b. Use the **Scan Rate** drop list to select a driver servicing rate.
8. Select **Ok** to close the Setup window.
9. Select **Ok** to close the Network window.
10. Reboot if requested by the system.



Connecting Serial Devices

The COM ports provided by the **SERIAL PORTS 1-8** can support any asynchronous serial modem for use by any application that uses TAPI.

There is a remote possibility that connecting a peripheral using the wrong configuration (**RS-232 device connected to a RS-422 configured port**) could damage the peripheral. Configure each serial port specifically for the peripheral that will be connected prior to connecting the peripheral to the ATS-NTE. See [Configuring the Serial Ports](#) on Page 18 for information about configuring port characteristics.

Note: *If your serial devices require a driver that does not support the Windows NT Embedded system, contact Control before driver installation.*

Connect your serial devices to the configured ports using the appropriate cables. If you need to build cables, see [RocketPort Serial Port Connectors](#) on Page 29.

Installing Modems on the RocketPort Serial Ports

A standard 28800 bps modem driver is built into the ATS-NTE image. To add additional modems that use the standard driver, see [Using the ATS-NTE Standard Modem Driver](#) (below).

If you want to install a specific driver for your modems on the RocketPort serial ports (**SERIAL PORTS 1-8**), see [Using the Modem Manufacturer's Driver](#) on Page 26.

Using the ATS-NTE Standard Modem Driver

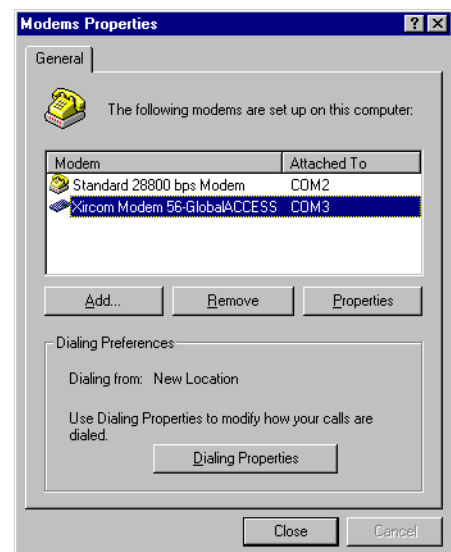
Use the following procedure if you want to use the standard modem driver configured in the ATS-NTE.

1. Connect the modem to the serial port you want to configure.

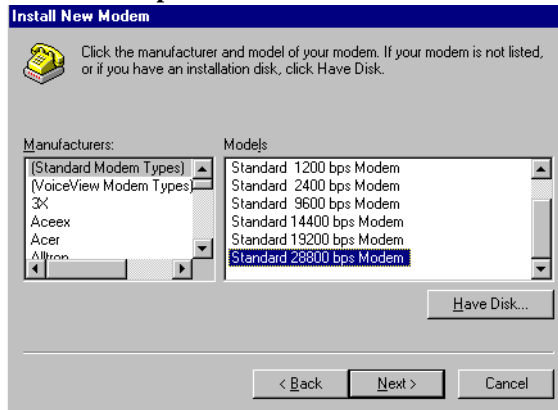
The connector labeled P0 by default corresponds to COM4 (unless you changed the starting COM port number in the driver setup to a higher number).

- COM1 is assigned to the **CONSOLE** port.
- COM2 is assigned to the **AUX A** port.
- COM3 is assigned to the optional PCMCIA Ethernet/Modem card.

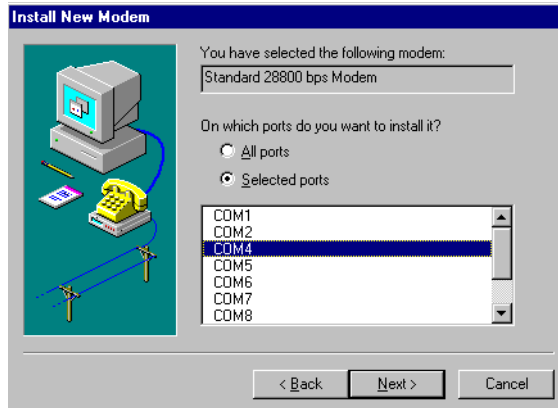
2. Open the **Modem** control panel and select the **Add** button.
3. Check the **Don't detect my modem...** box and select **Next**.



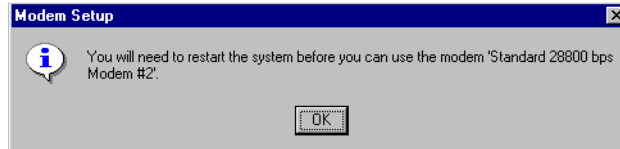
- Highlight **Standard 28800 bps Modem** and select the **Next** button.



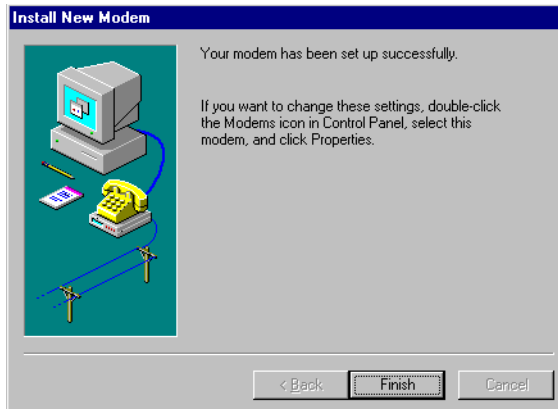
- Select the COM port that corresponds to the port number. This example shows connecting a modem to the P0 connector (with the COM4 as the starting COM port number).



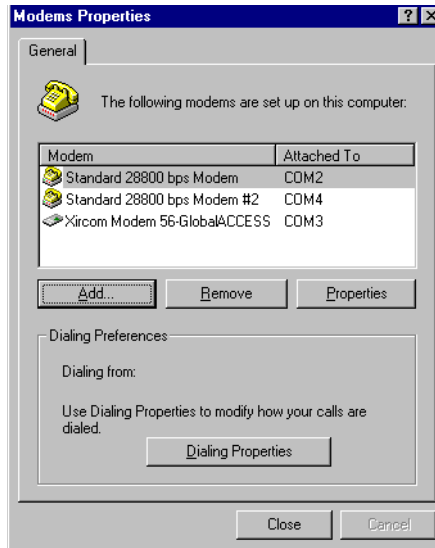
- Select **Ok** to the Modem Setup popup to restart the system.



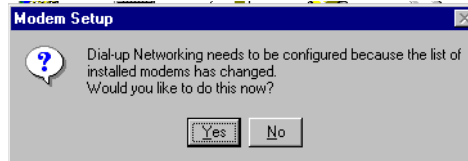
- Select **Finish**.



8. Select **Close**.

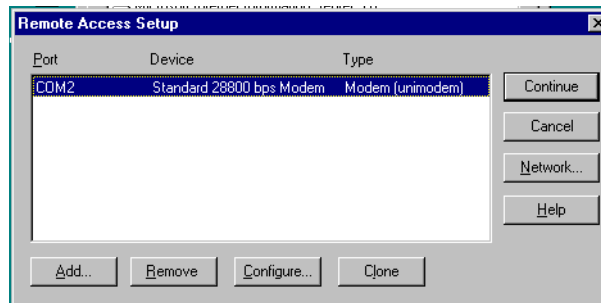


9. Select **No**, and shutdown and reboot the ATS-NTE.

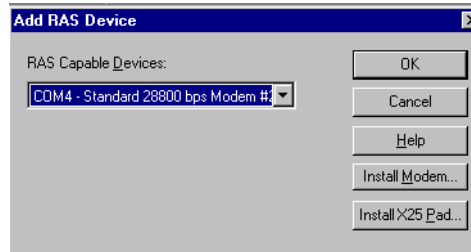


10. After rebooting the system, open the **Network** control panel, select the **Services** tab, highlight **Remote Access Service**, and select **Properties**.

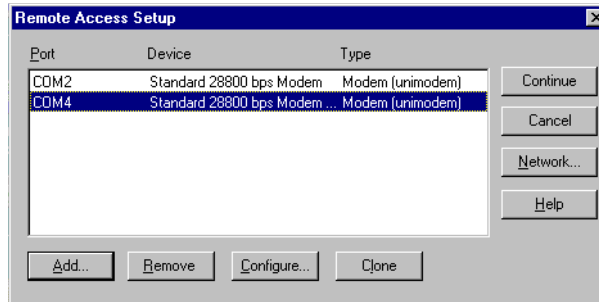
11. Select the **Add** button.



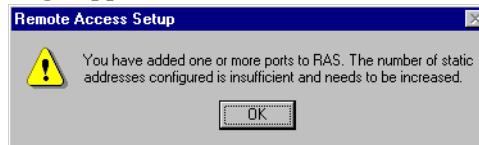
12. Select the **COM** port number that corresponds to **COM** port installed in Step 5 and select **Ok**.



13. Select the **Continue** button.



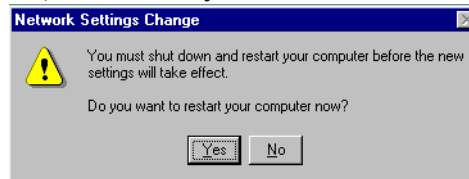
If you have previously configured a static address pool for RAS TCP/IP, select **Ok** when this message appears.



Adjust the RAS Server TCP/IP Configuration screen as necessary.

Note: *If you want to configure this modem with Receive calls only or Dial Out and Receive Calls capabilities, you must change COM2 to a dial out only configuration.*

14. Select **Yes**, shutdown, and restart your ATS-NTE.

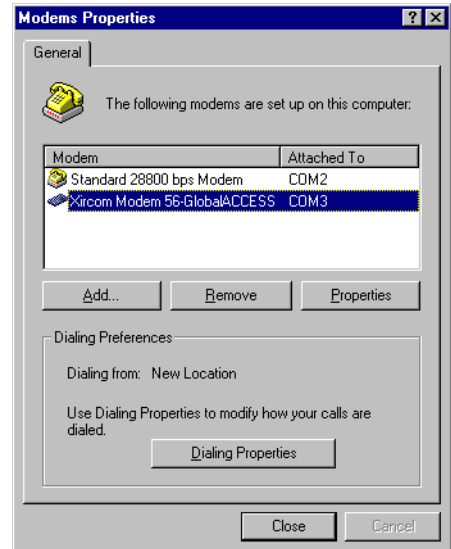
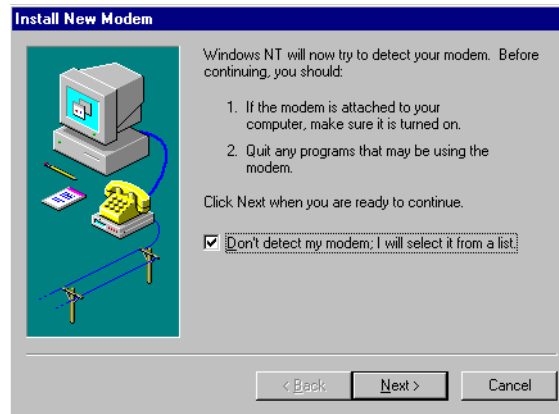


Using the Modem Manufacturer's Driver

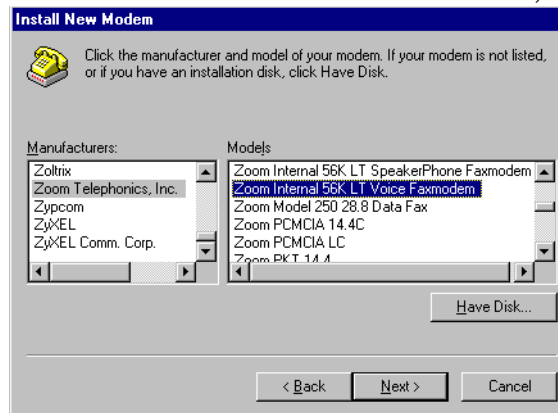
1. If you want to use a modem driver that supports more than the standard 28800 bps default driver in the ATS-NTE, install the modem driver using the manufacturer's instructions.
2. Connect the modem to the serial port you want to configure.
The connector labeled P0 by default corresponds to COM4 (unless you changed the starting COM port number in the driver setup to a higher number).

- COM1 is assigned to the **CONSOLE** port.
- COM2 is assigned to the **AUX A** port.
- COM3 is assigned to the **PCMCIA Ethernet/modem cards**.

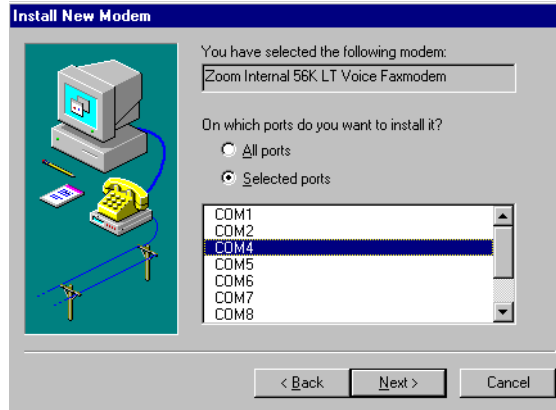
3. Open the Modem control panel and select the **Add** button.
4. Check the **Don't detect my modem...** box and select **Next**.



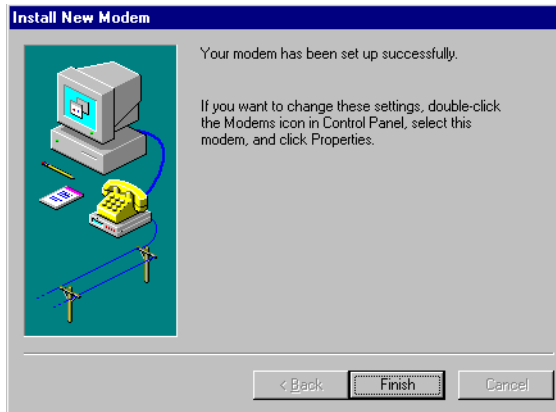
5. Select the modem manufacturer and model from the lists, and select **Next**.



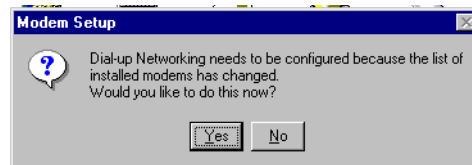
6. Select the COM port number that corresponds to the port number. This example shows connecting a modem to the P0 connector (with the COM4 as the starting COM port number).



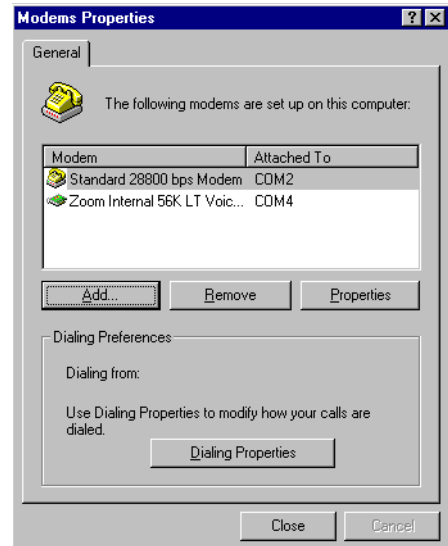
7. Select **Finish**.



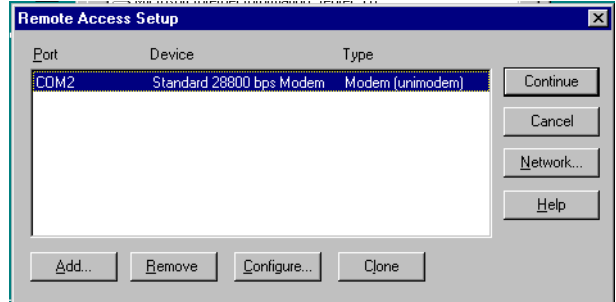
8. Select **Close**.
9. Select **No**, and shutdown and reboot the **ATS-NTE**.



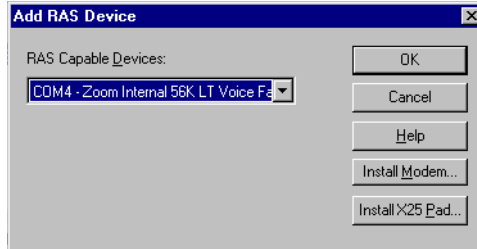
10. After rebooting the system, open the **Network** control panel, select the **Services** tab, highlight **Remote Access Service**, and select **Properties**.



- Open the Remote Access Setup window and select the **Add** button.

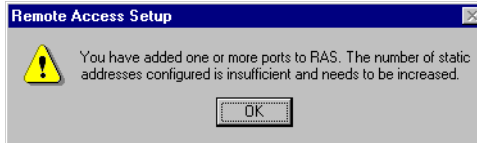


- Select the COM port number that corresponds to COM port installed in Step 6 and select **Ok**.



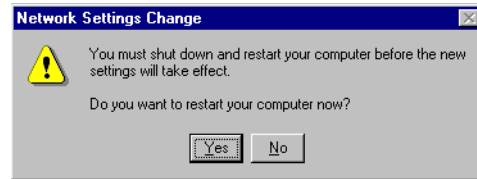
- Select the **Continue** button to close Remote Access Setup.

If you have previously configured a static address pool for RAS TCP/IP, select **Ok** when this message appears.



Adjust the RAS Server TCP/IP Configuration screen as necessary.

- Select **Yes**, shutdown, and restart your ATS-NTE.

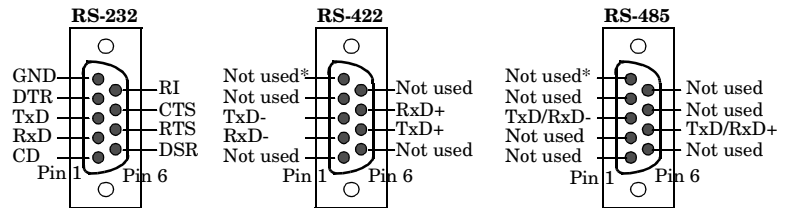


RocketPort Serial Port Connectors

The following subsections illustrate the pinouts for the quad- and octacable connector types and how to build loopback plugs for testing serial ports.

DB9 Connectors

This illustrates the pinouts for DB9 quad- or octacables.



* Pin 5 is tied to ground on the board, but is not used in the cable.

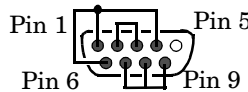
Building Additional DB9 Loopback Plugs

Loopback connectors are DB9 female serial port plugs that you can use to test serial ports. The ATS-NTE is shipped with a single loopback plug (RS-232/422) that corresponds to your quad- or octacable type.

Note: You can run loopback tests with Test Terminal.

Wire the following pins together to build additional plugs or replace a missing RS-232 loopback plug:

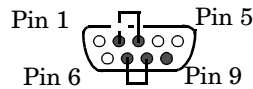
- Pins 1 to 4 to 6
- Pins 2 to 3
- Pins 7 to 8 to 9



RS-232 Only (Back View) The RS-232 loopback plug also works for RS-422.

Wire the following pins together for an RS-422 loopback plug:

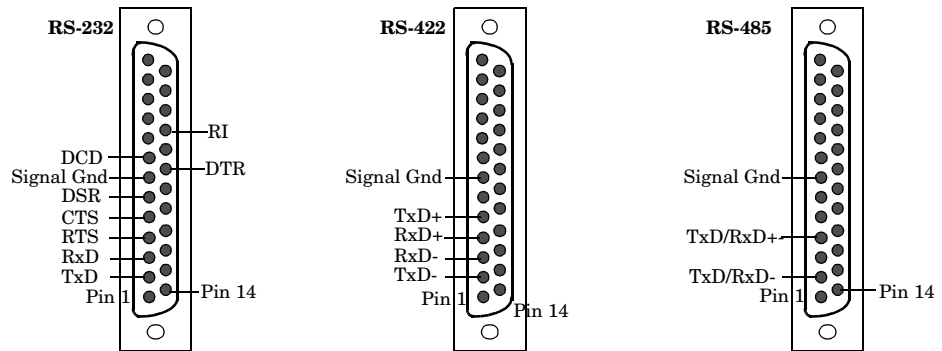
- Pins 2 to 3
- Pins 7 to 8



RS-422 Only (Back View)

DB25 Connectors

This illustrates the pinouts for DB25 quad - or octacables.



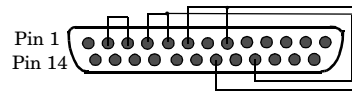
Building Additional DB25 Loopback Plugs

Loopback connectors are DB25 female serial port plugs that you can use to test serial ports. The ATS-NTE is shipped with a single loopback plug (RS-232/422) that corresponds to your quad- or octacable type.

Note: You can run loopback tests with Test Terminal.

Wire the following pins together to build additional plugs or replace a missing RS-232 loopback plug:

- Pins 2 to 3
- Pins 4 to 5 to 22
- Pins 6 to 8 to 20

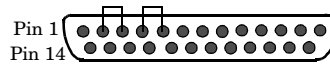


**RS-232 Only
(Back View)**

The RS-232 loopback plug also works for RS-422.

Wire the following pins together for an RS-422 loopback plug:

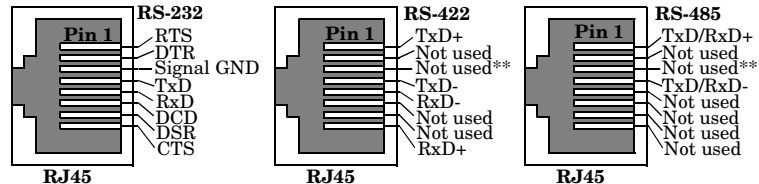
- Pins 2 to 3
- Pins 4 to 5



**RS-422 Only
(Back View)**

RJ45 Connectors

This illustrates the pinouts for RJ45 quad- or octacables.



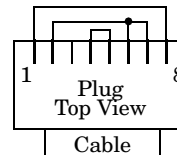
** Pin 3 is tied to ground on the board, but is not used in the cable.

Building Additional RJ45 Loopback Plugs

Loopback connectors are RJ45 serial port plugs that can be used to test serial ports. The ATS-NTE is shipped with a single loopback plug (RS-232/422) that corresponds to your quad- or octacable type.

Note: You can run loopback tests with Test Terminal.

- Pins 4 to 5
- Pins 1 to 8
- Pins 2 to 6 to 7



The RS-232 loopback plug also works for RS-422.

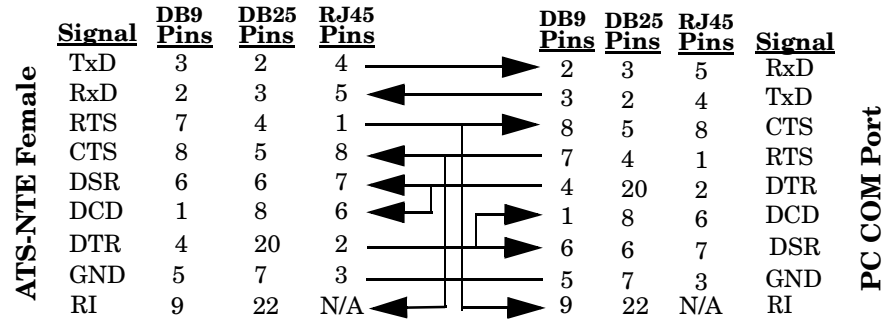
Building an RS-485 Test Cable

You can use a straight-through cable as illustrated previously, or build your own cable.

Signal	RJ45 Pins	DB9 Pins	RJ45 Pins	DB25 Pins	Signal
TxD or TRX-	4	3	4	2	TxD or TRX-
RTS or TRX+	1	7	1	4	RTS or TRX+

Building Null-Modem Cables

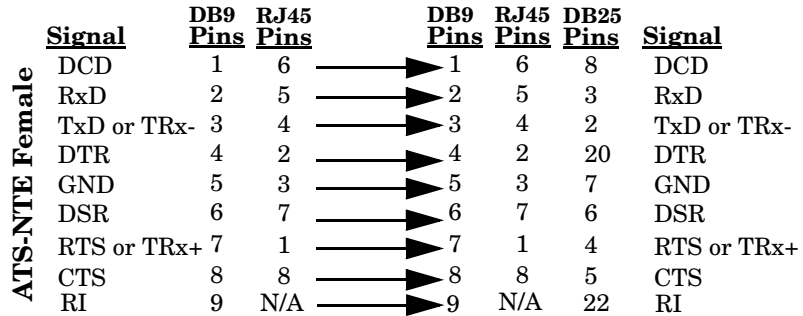
Use the following figure if you need to build a null-modem cable. A null-modem cable is required to connect the **CONSOLE** port to a PC COM port or to connect DTE devices.



Note: You may want to purchase or build a straight-through cable and purchase a null-modem adapter.

Building Straight-Through Cables

Use the following figure if you need to build a straight-through cable. Straight-through cables are used to connect DCE devices.



Troubleshooting Serial Ports

The following subsections discuss the following utilities that are installed on the ATS-NTE:

- Test Terminal program (**wcom32.exe**), which can be used to troubleshoot communications on a port-by-port basis.
- Port Monitor program (**portmon.exe**), which checks for errors, modem control, and status signals ([Using Port Monitor](#) on Page 33). In addition, it provides you with raw byte input and output counts.
- Peer Tracer program (**peer.exe**), which traces driver events ([Using Peer Tracer](#) on Page 38).

Using Test Terminal

WCOM32 is a terminal program that enables you to open a port, send characters and commands to the port, and toggle the control signals.

Note: WCOM32 will **not** work on ports used by RAS if Remote Access Service is running or any other application is using the port.

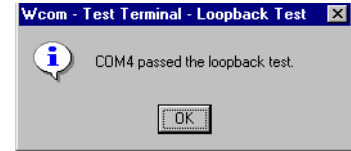
If you have started RAS service on any of the ports you want to test, you must stop RAS on those ports before starting WCOM32. To test ports that are not used by RAS, you do not need to stop RAS.

Note: If no characters appear, try putting the loopback plug on an adjacent port. It may be that you have the ports mixed up.

3. If further testing is required, select **Loopback Test** from the **Port** menu.

If the loopback plug is in place and the port is working correctly, the system should return the message *Passed*.

If the loopback plug is not in place or the port is not working correctly, the system will return the message *Failed*.



Testing an RS-485 Port

Perform the following procedure to determine if a port or ports are functioning properly.

1. Connect a straight-through cable from Port 1 to Port 2.

Note: See [Building an RS-485 Test Cable](#) on Page 30 for the cable information. If testing ports other than Ports 1 and 2, connect the cable between the two ports being tested.

2. Open a session for each port.
3. Enter data into the Port 1 session, the data should appear in the *Port 2* window.
4. Enter data into the Port 2 session, the data should appear in the *Port 1* window.

Note: If the data appears as described in Steps 3 and 4, the hardware is functioning properly.

Test Terminal Modem Control Signals

The terminal window displays the modem control signals as gray or green lights at the top of the window. The first four are inputs:

cts dsr cd ri

The lights are green if they are turned on, or gray if off. The text on the light also changes from uppercase (CTS), which is on, to lowercase (cts), which is off.

The next two lights are outputs: RTS DTR

Note: If you have a loopback plug connected and you click on one of the outputs, the corresponding signal is sent to the input and the input lights should toggle accordingly.

The right most light is the loop indicator: loop

If this is on, the COM port internal loopback feature is activated and any information or code entered in the terminal window loops back through the COM port circuitry. If this is off, the COM port internal loopback is deactivated, and any information or code entered in the terminal window is sent out of the port.

Using Port Monitor

The Port Monitor program (**portmon.exe**) offers a summary of all Control device statistics in one spreadsheet view. It also enables you to verify operation of all Control device ports from a single window.

The Port Monitor display follows the familiar spreadsheet model: each COM port is a horizontal row, and each vertical column displays a variable or value for the respective COM port. For definitions of the abbreviations used, see [Port Monitor Variables](#) on Page 37.

Port Monitor can also produce statistics and reports that can help you verify the operation of the COM ports and connected peripherals. Some immediate feedback includes:

- The state of the modem control and status signals
- Open ports
- Raw byte input and output counts obtained from NS-Link
- Port errors

The available statistics include:

- Instantaneous characters per second (CPS) calculations
- Minute, hour, and day CPS averages and peaks
- Carrier detect (CD) signal runtime and transition count

Reports can be automatically generated on an hourly and/or daily basis, and can cover all ports collectively or a separate report for each port. You can also set how often the values are recalculated, fine-tuning thoroughness against system efficiency, and automatically run external batch files to perform additional processing and analysis.

Starting Port Monitor

To run Port Monitor, select **Port Monitor** from the Control program group. The monitor window displays:

Device	Oper	CT	DS	IC	D	RT	DT	TxTotal	RxTotal	TxCPSInst	RxCPSInst
COM3	Off	Off	Off	Off	Off	Off	Off	0	0	0	0
COM4	Off	Off	Off	Off	Off	Off	Off	0	0	0	0
COM5	Off	Off	Off	Off	Off	Off	Off	0	0	0	0
COM6	Off	Off	Off	Off	Off	Off	Off	0	0	0	0
COM7	Off	Off	Off	Off	Off	Off	Off	0	0	0	0
COM8	Off	Off	Off	Off	Off	Off	Off	0	0	0	0
COM9	Off	Off	Off	Off	Off	Off	Off	0	0	0	0
COM10	Off	Off	Off	Off	Off	Off	Off	0	0	0	0

Note: To change the appearance of the screen, see the following discussion.

Once the monitor window displays, Port Monitor is active and collecting data. If any cumulative data has been saved from previous sessions, it is automatically brought in and used.

Port Monitor continues to run and collect data until you terminate it, at which point all accumulated data is automatically saved for use in the next session.

Changing Screen Appearance

While Port Monitor is running, there are a number of commands and controls that change the appearance of the screen.

Desired Change	Procedure
Change the monitor window font.	Select Font from the Edit menu.
Change width of a single column.	Left-click on the column separator (vertical) line and drag it to the desired width.
Change column placement.	Left-click in the middle of the column you want to move and drag it to the desired location.
Remove a column.	Right-click on the column you want to remove and select Remove from the pop-up menu.
Clear all fields and reset them to null values.	Right-click on the upper left cell in the table and select Reset from the pop-up menu.*
Clear any single field <i>except</i> the upper left cell.	Right-click on the field to be cleared and select Reset from the pop-up menu.*

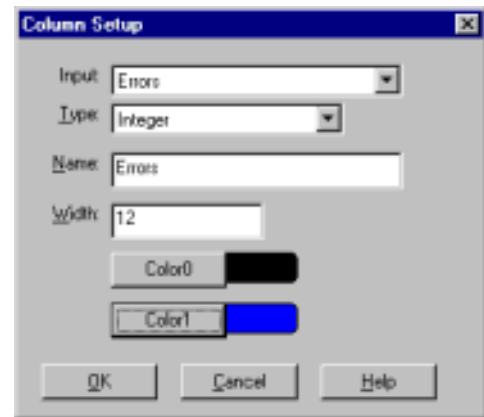
Desired Change	Procedure
Add a column.	Right-click on the column now occupying the desired location and select Add from the pop-up menu. You are prompted to name the variable you want to display, as well as other information. (See <i>Column Setup</i> , below.) After you click OK , the column is inserted in the selected location and the existing column is moved to the right.
Change other properties of a column.	Right-click on the column and select Properties from the pop-up menu. (See <i>Column Setup</i> , below.)

* The **Reset** command does not clear raw data from the *calcs.dat* file. It simply resets the selected display fields to their null values.

Column Setup

When you select **Add** or **Properties** from the column pop-up menu, the Column Setup window displays:

- Use the **Input** drop list to select the variable displayed in the column.
- Use the **Type** drop list to select the way in which the value displays: either as an integer, as an on/off state, as an integer with a kilo, mega, or giga suffix, or as an hh:mm:ss time stamp. This defaults to the appropriate type for the selected Input variable.
- Use the **Name** variable to change the column heading name.
- Use the **Width** variable to specify the column width in characters.
- Use **Color0** to set the column character color when the value is zero.
- Use **Color1** to set the column character color when the value is not zero.
- When done, click **OK** to save your changes and return to Port Monitor.



Report Configuration

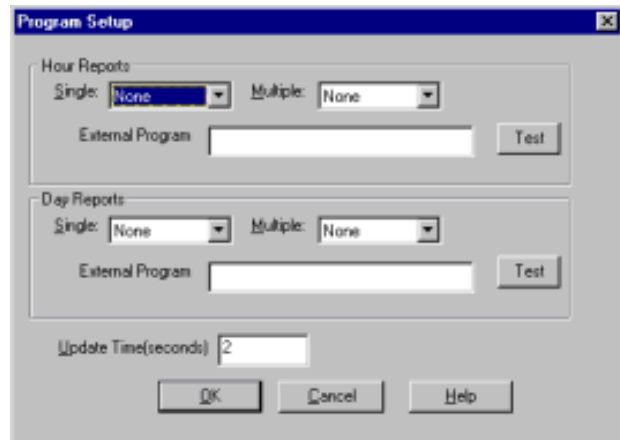
To configure reports, select **Config** from the Edit menu.

The **Single** report options cover all ports and are overwritten each time the reports are generated. The **Multiple** report options generate a separate report for each port, and each report file is appended each time the report is generated.

For **Hour** reports, use the Single and Multiple drop lists to select whether you are generating single or multiple reports, or both.

For each report type, select from the following types of data to include:

- None: no report is generated.



- Hour Data: only variables with “Hour” in the name are included.
- All Data: all variables are included.
- View Data: only variables that appear on-screen are included.

The **External Program** field is used to enter a command line to run another program after the hourly reports have been generated. For example, you can use this to run a batch file that performs custom report processing. The **Test** button causes the command line to be executed immediately.

For **Day** reports, the single and multiple drop lists behave the same, but your choices are:

- None: no report is generated.
- Day Data: only variables with the words “Day” or “Raw” in the names are included.
- All Data: all variables are included.
- View Data: only the variables that appear in the Port Monitor window are included.

Likewise, the **External Program** field is used to enter a command line to be executed after the daily reports have been generated.

The **Update Time** option allows you to set the rate at which the port information is obtained and the calculations performed. There is a trade-off between Port Monitor efficiency and response time. If you are using Port Monitor to view the port activity on the screen, you may want to set the update time to 1 or 2 seconds, so that the screen is updated frequently. If you are concerned about the monitor program using CPU resources, set this to a higher value, (6 to 20 seconds) in order to decrease the time required by the program to perform the calculations and update the screen.

If Port Monitor is left active to generate reports, minimizing or reducing the display area of the program will help reduce the CPU overhead of updating the screen.

Port Monitor Files

Port Monitor creates and uses the following files:

- **portmon.view**
- **calcs.dat**

The default column layout is saved in **portmon.view**. If you have been experimenting with the appearance of the monitor screen, you can use the File menu **Save** option to save your customized layout in another **.view** file. You can retrieve this file later by using the File menu **Open** option, or you can use the Edit menu **View Default** option to retrieve **portmon.view** and restore the default view.

All Port Monitor calculations are saved at program exit and on the hour in a binary file named **calcs.dat**. This enables you to halt Port Monitor execution without losing accumulated data.

Port Monitor also creates a **\REPORTS** directory. All hourly and daily reports are saved in this directory, under the following names:

- **hall.txt** — hourly single report
- **dall.txt** — daily single report
- **hcomx.txt** — hourly multiple reports, where *x* is the port number
- **dcomx.txt** — daily multiple reports, where *x* is the port number



Compact flash technology does not support an unlimited number of writes. Use the compact flash to store applications but avoid using it for file storage. If your application generates files, save the files on a remote system.

Some safeguards are built into the program to avoid filling up a hard disk drive due to growing report files. The monitoring program stops writing additional data to the multiple reports if they reach a size of 2 MB. Also, the program will not

write out data files to the disk drive if the spare room on the drive is less than 2 MB in size.

To view or edit an hourly or daily report, use the Edit Report option on the File menu, or use a system tool such as NOTEPAD.

For more information, see the Port Monitor **Help** file.

Port Monitor Variables

The following table lists Port Monitor variables.

Variable	Description
Open	Open status, on if open, off if closed.
Cts	Input CTS pin status.
Dsr	Input DSR pin status.
Cd	Input CD (carrier detect) pin status.
Rts	Output RTS pin status.
Dtr	Output DTR pin status.
TxTotal	Total bytes transmitted.
RxTotal	Total bytes received.
TxCPSInst	Instantaneous average of transmit characters per second.
RxCPSInst	Instantaneous average of receive characters per second.
Errors	Total hardware receive errors (parity, framing, and overruns.)
TxMinCPS	Last minute average of transmit characters per second.
RxMinCPS	Last minute average of receive characters per second.
TxCPSMinAvMax	Peak TxCPSInst for the last minute.
RxCPSMinAvMax	Peak RxCPSInst for the last minute.
TxCPSHourAvMax	Peak TxMinCPS for the last hour.
RxCPSHourAvMax	Peak RxMinCPS for the last hour.
TxCPSDayAvMax	Peak TxMinCPS for the last day.
RxCPSDayAvMax	Peak RxMinCPS for the last day.
TxTotalRaw	Total number of transmit bytes raw data from driver.
RxTotalRaw	Total number of receive bytes raw data from driver.
TxMinCnt	Count of transmit bytes sent in last minute.
TxHourCnt	Transmit bytes count sent in the last hour.
TxDayCnt	Transmit bytes count sent in the last day.
RxMinCnt	Receive bytes count sent in the last minute.
RxHourCnt	Receive bytes count sent in the last hour.
RxDayCnt	Receive bytes count sent in the last day.
TxMinCntWrk	Transmit bytes count sent in this minute.
TxHourCntWrk	Transmit bytes count sent in this hour.
TxDayCntWrk	Transmit bytes count sent in this day.
RxMinCntWrk	Receive bytes count sent in this minute.
RxHourCntWrk	Receive bytes count sent in this hour.
RxDayCntWrk	Receive bytes count sent in this day.
TxCPSMinAvMaxWrk	Peak TxCPSInst for the current minute.
TxCPSHourAvMaxWrk	Peak TxMinCPS for the current hour.
TxCPSDayAvMaxWrk	Peak TxHourCPS for the current day.

Variable	Description
RxCPSMinAvMaxWrk	Peak RxCPSInst for the current minute.
RxCPSHourAvMaxWrk	Peak RxMinCPS for the current hour.
RxCPSDayAvMaxWrk	Peak RxHourCPS for the current day.
CDRuns	Carrier detect turn-on count.
CDDayRuns	Carrier detect turn-on count in the last day.
CDDayRunsWrk	Carrier detect turn-on count in the current day.
CDRunTime	Time in seconds carrier detect has been on.
CDHourRunTime	Time in seconds carrier detect has been on in the last hour.
CDDayRunTime	Time in seconds carrier detect has been on in the last day.
CDHourRunTimeWrk	Time in seconds carrier detect has been on this hour.
CDDayRunTimeWrk	Time in seconds carrier detect has been on this day.
StatusFlags	Bit flags, Open, CTS, DSR, CD, RTS, DTR
TxPkts	Raw count of total transmit packets sent.
RxPkts	Raw count of total receive packets sent.
OverrunErrors	Total count of receive overrun errors.
FramingErrors	Total count of receive framing errors.
ParityErrors	Total count of receive parity errors.
OverrunErrorsRaw	Total count of receive overrun errors, from NS-Link.
FramingErrorsRaw	Total count of receive framing errors, from NS-Link.
ParityErrorsRaw	Total count of receive parity errors, from NS-Link.

Using Peer Tracer

The **Peer Tracer** program (**peer.exe**) is specifically designed to view the internal operations of NS-Link for the purpose of troubleshooting communications on Windows NT systems. **Peer** enables you to see:

- Receive and transmit data
- Internal driver event traces
- Advanced configuration and status information

Like Test Terminal, **Peer** acts as a simple terminal session, and is used to send and receive text information to and from NS-Link. To use **Peer**, you type in commands, and status and information are sent back.

Unlike Test Terminal, **Peer** enables you to keep a continuous log of the commands sent and the results received in a file named **peer.log**.

Control Technical Support may ask you to run **Peer** in order to help diagnose reported problems.

Starting Peer

Peer Tracer does not appear in the Control program group. To use it, you must open **Windows Explorer**, access the **C:\WINNT\system32\Rocket** directory, and double-click on **peer.exe**. The Peer Tracer window displays (at right).



Log Functions

All logging functions are found under the File menu. To start keeping a log, select **Log to Disk** from the File menu. The other options on this menu are View Disk Log, Clear Disk Log, Clear Screen, and Exit.



Compact flash technology does not support an unlimited number of writes. Use the compact flash to store applications but avoid using it for file storage. If your application generates files, save the files on a remote system.

Using Peer

To use peer, simply type in commands at the **: prompt**. (It may be necessary to press **Enter** to make the **: prompt** appear.) For example, to examine COM5, type: **PORT COM5 <Enter>**

To gather some information about the port, type: **STAT <Enter>**. This should return details about the port.

To turn on monitoring of any calls into driver (events), type: **MON EV <Enter>**

To send strings and commands to attached peripherals—for example, to send “ATH0” to a modem—type: **SEND ATH0 <Enter>**. A return and linefeed are always appended to each string sent.

Other Peer Commands

Enter commands at the **: prompt** and follow each command with **Enter**.

Command	Effect
MON TX	Monitor data being transmitted through the selected port.
MON RX	Monitor data being received through the selected port.
M	Turn off all monitoring.
?	Display Peer Tracer command summary.
PORT COMxx	Change port being examined to COMxx.

Keep in mind that all commands are processed in NS-Link, and that **Peer** simply acts as a conduit for this information.

For more information, see the **Peer.hlp** help file.

Device Driver and OS Capabilities and Limitations

This device driver supports the Win32 API. The following tables list known device driver and operating system capabilities and limits. This information is not relevant to ordinary users, but is important to software developers.

Note: In Windows NT, device names above COM9 require the `\\.\` prefix in order to be recognized by the system. For example, to reference COM20, use `\\.\COM20` as the file name.

Device Control Block Settings	Status
ByteSize	7 or 8
ErrorChar	Supported
EofChar	Not supported, supports only binary
EvtChar	Supported
fAbortOnError	Supported
fBinary	Always binary mode
fDtrControl	Supported
fDsrSensitivity	Not supported
fErrorChar	Supported

Device Control Block Settings	Status
fInX, fOutX	Supported
fNull	Supported
fParity	Supported
fOutxCtsFlow	Supported
fRtsControl RTS_CONTROL_DISABLE, RTS_CONTROL_ENABLE, RTS_CONTROL_HANDSHAKE, RTS_CONTROL_TOGGLE fTXContinueOnXoff	Supported as always TRUE
Parity	EVENPARITY, NOPARITY, or ODDPARITY
StopBits	ONESTOPBIT or TWOSTOPBITS
XonChar, XoffChar	Supported

Certified PCMCIA Adapters

This section discusses configuration issues for Control certified PCMCIA options.

Control Certified PCMCIA Devices

The ATS-NTE supports the following PCMCIA devices.

- Any standard PCMCIA to CompactFlash adapter
- Xircom CreditCard Wireless Ethernet adapter
- Xircom RealPort Modem 56 GlobalACCESS adapter

Note: *The ATS-NTE PCMCIA option supports two Type II PCMCIA slots or one Type III slot, which is installed at the factory. Drivers for Control approved PCMCIA devices are installed in the system.*

Xircom CreditCard Wireless Ethernet Adapter

The device driver for the Xircom CreditCard Wireless Ethernet adapter (CWE1130-NA) is installed in the ATS-NTE. To verify the operation of the Xircom CWE1130 Wireless Ethernet Adapter, it is necessary to have a configured and operating wireless access point connected to the local network and situated within range of the wireless adapter (preferably less than 100 feet indoors with no obstructions).

For support of the CreditCard wireless Ethernet adapter, see http://www.intel.com/network/connectivity/products/xirew1120_1130.htm.

Perform the following procedures to configure the adapter.

- Enable the adapter in the Devices control panel.
- Configure the network settings ([Configuring the Network Settings on the ATS-NTE](#) on Page 8)
- Set up the Xircom Utilities.
- If necessary, enable Wired Equivalent Privacy (WEP).

There is a subsection if you need to verify the set up ([Verifying the Ethernet Adapter Set Up](#) on Page 45).

Note: *Refer to the Xircom online documentation for more information on using this product or the utilities.*

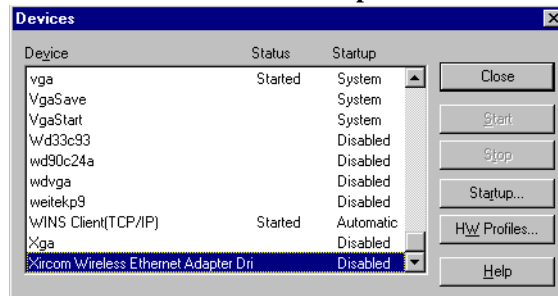
Enabling the Ethernet Adapter

You must enable the device in the operating system because the ATS-NTE system ships with the wireless adapter drivers installed but disabled.

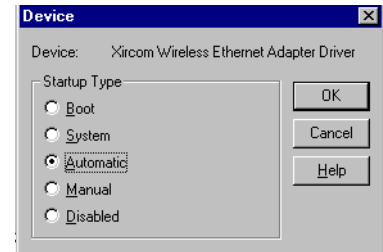
Note: *Make sure that you enable the adapter before configuring any network bindings. Failure to do so causes this device to be “orphaned” on the network.*

1. Power up the ATS-NTE and log in as Administrator.
2. Open the **Devices** control panel.

- Highlight the **Xircom Wireless Ethernet Adapter Driver** from the Devices list.



- Select the **Startup** button.
- Select **Automatic** for the Start up Type and select **Ok**.
- Select **Close** to close the Devices folder.
- Close the Devices control panel, then shut down the system.

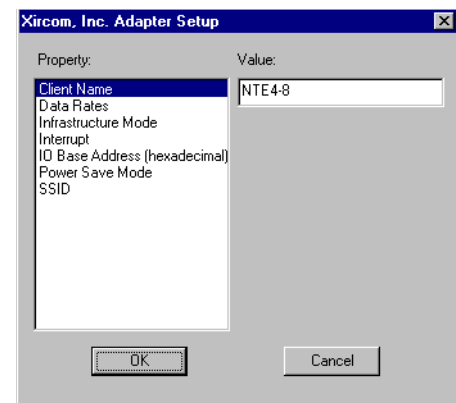


Changing the Client Name

The Client Name is not automatically imported when and if the Computer Name is changed. Use the following procedure if you need to change the computer name.

- Open the **Network** Control Panel and select the **Adapters** tab.
- Highlight the **Xircom Wireless Ethernet Adapter** and the select **Properties**.
- Edit the Client Name so that it matches the Computer Name in the Identification tab in the Network folder.
- Optionally, confirm that the following parameters have the correct preset values. These are necessary for the device to operate:

Data Rates	Auto
Infrastructure Mode	Yes
Interrupt	5
IO Base Address (hex)	300
Power Save Mode	CAM
SSID	atsnte



Note: *SSID parameter must be set to match the one programmed into the wireless access point (case-sensitive).*

- Select **Ok** when parameter values have been confirmed.
- Select the **Close** button in the Network folder.
- Select **Yes** if prompted to reboot the ATS-NTE.

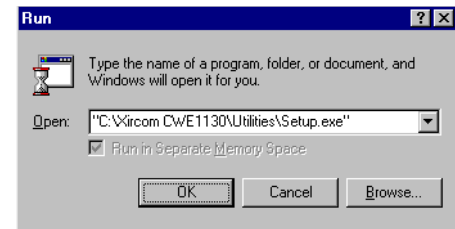
Setting Up the Utilities

Use this procedure to set up the utilities for the Xircom Wireless Ethernet adapter.

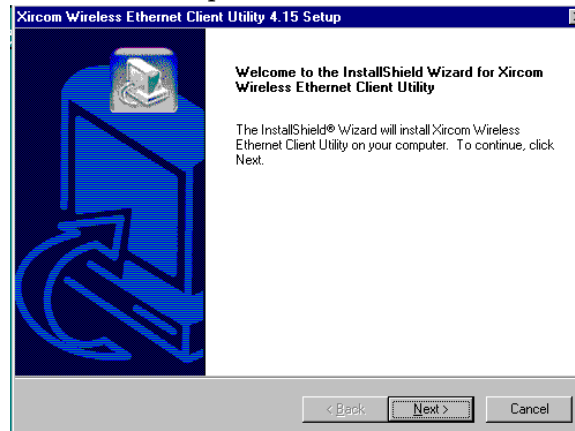
1. From the **Start** button, select **Run**.
2. Select the **Browse** button, locate the following path, and select the **Ok** button.

C:\Xircom CWE1130\Utilities\Setup.exe

Note: *If you manually enter the path, make sure that you enclose the path in quotes (as illustrated).*

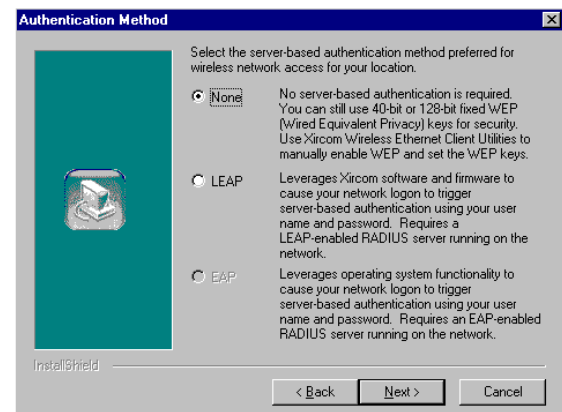


3. Select **Next** for the initial setup window.



4. Select the appropriate **Authentication Method** and the **Next** button. The default selection is **None**.

Note: *Do NOT select LEAP unless your wireless network uses a LEAP-enabled RADIUS server for wireless login authentication. The machine will hang at login time if this option is selected and the wireless adapter is unable to locate an authentication server.*



5. Select **Next** for the remaining setup options.
6. Select the **Finish** button when the setup process has completed.

Enabling Wired Equivalent Privacy (WEP)

If your particular wireless network does not use WEP (Wired Equivalent Privacy) data encryption, skip this subsection.

1. Double-click on the Xircom Client Encryption Manager (CEM) icon on your desktop.

Note: *You must have previously installed the Xircom Utilities, see [Setting Up the Utilities](#) on Page 43, if necessary.*

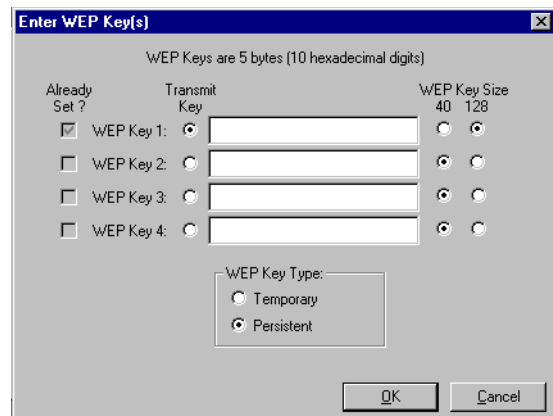
2. Enter the password. The default password is Xircom and it is case-sensitive.
3. If the Xircom wireless adapter has never been configured, the initial status screen for the Client Encryption Manager should show the following information:

```
Current Adapter is CWE1100 PCMCIA
Adapter's Firmware Does Support WEP
(Version V4.23)
Adapter is Configured
WEP is Disabled
WEP Key 1 is Not Set
WEP Key 2 is Not Set
WEP Key 3 is Not Set
WEP Key 4 is Not Set
WEP Tx Key is Key 1
```

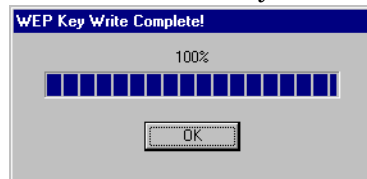


4. Under the **Commands** menu, select **Enter WEP Key...**
5. Select the appropriate WEP Key Size, set the WEP Key Type to either Temporary or Permanent, and enter the key value for Key 1 (with no spaces between the characters).

- For 128-bit encryption (recommended), the WEP value is 13 bytes (26 hexadecimal characters) in length.
- The WEP value is 5 bytes (10 hexadecimal characters) in length for 40-bit encryption.



6. Select **Ok** to save.
7. Select **Ok** when finished and exit the utility.

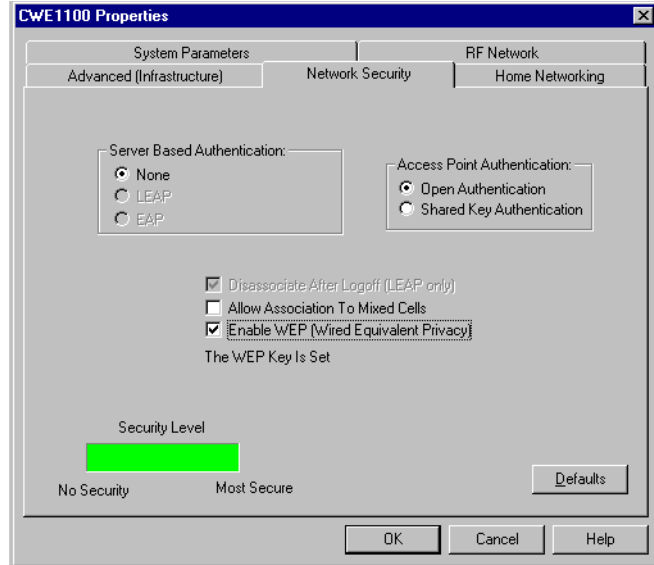


8. Double-click on the Xircom Wireless Ethernet Client Utility (WECU).
9. When the initial client utility screen comes up, this message at the bottom of the screen, *Your CWE1100 is Not Associated!*, which is expected behavior since WEP has not yet been activated.
10. Under the **Commands** menu in the top menu bar, select **Edit Properties...**
11. Select the **Network Security** tab.

12. Select **Enable WEP (Wired Equivalent Privacy)**.

***Note:** The Security Level indicator in the lower-left corner of the window should change from all black (No Security) to all green (Most Secure)*

13. Select **Ok** to close the Properties window.
When the Client Utility main screen returns, the message at the bottom should change from:



Your CWE1100 is Not Associated!

to:

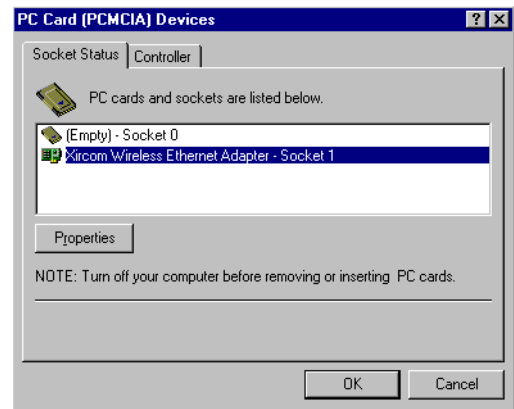
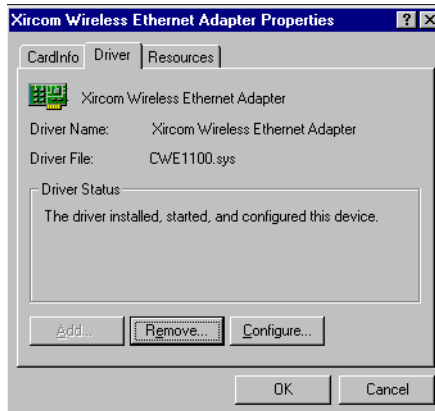
Your CWE1100 is Associated to MAC Address **xx:xx:xx:xx:xx:xx**

Where **xx:xx:xx:xx:xx:xx** is the MAC address of the wireless access point. If the message does not change within a second or two, it may be necessary to move the wireless adapter closer to the access point.

Verifying the Ethernet Adapter Set Up

Use the following procedure to set up the device.

1. Before powering up the ATS-NTE again, confirm that the Xircom Wireless Ethernet adapter is plugged into one of the two PCMCIA slots.
2. Repeat the power up and login sequence.
3. Open up the **PCMCIA Control Panel**.
4. Highlight the **Xircom Wireless Ethernet Adapter** and select the **Properties** button.
5. Select the **Drivers** tab, verify that the driver is installed and started, and then select the **Ok** button.



***Note:** If the driver has not been started, return to [Enabling the Ethernet Adapter](#) on Page 41 and enable the adapter.*

6. Select **Ok** to close the PCMCIA folder.

Xircom RealPort Modem 56 GlobalACCESS Adapter

Although, the RealPort Modem 56 GlobalACCESS driver for this adapter is pre-configured into the ATS-NTE as COM3, you must configure the modem in RAS and you may need to select a country code if you are using it outside North America.

To set up RAS, see [Configuring RAS TCP/IP for Dialin](#) on Page 11.

The following subsections discuss these topics:

- How to install the Xircom Utilities (modem documentation, diagnostic, and CountrySelect).
- How to set the country code if outside of the United States or Canada, after installing the Xircom Utilities.

For support of the RealPort modem, see <http://www.intel.com/network/connectivity/products/xirrm56g.htm>.

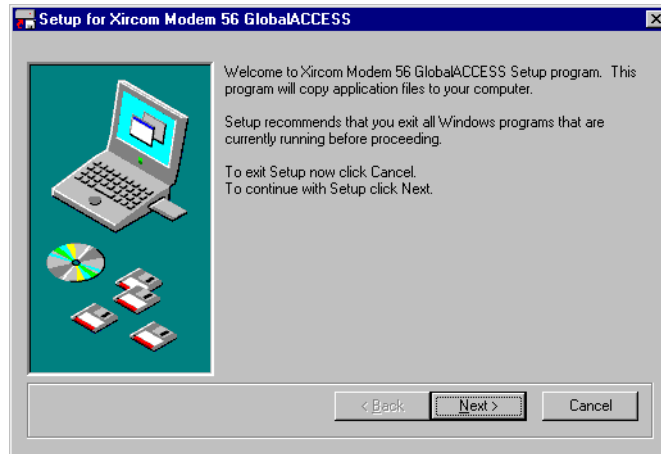
Installing Xircom Utilities

Use the following procedure to install the Xircom Utilities on the ATS-NTE.

1. Place the Xircom CD (Version 2.62) in a shared CD-ROM drive on the network.
2. Browse the CD and execute the **Setup.exe** file.
3. Select **Install Software and Tools**.



4. Select **Next**.



5. Select **Next** to install the files in a Xircom directory.
6. Select **Yes** to create the Xircom directory.
7. Select **Finish**.



Selecting a Country Code

Before using the modem, you may need to set the country code if the installation is outside United States or Canada. After installing the Xircom utilities, select **Programs/Xircom Utilities/CountrySelect** from the **Start** button.

Reconfiguring AUX A as a Standard Serial Port

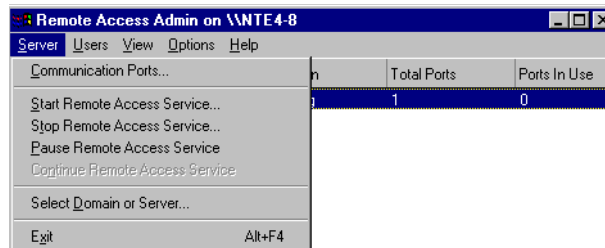
This section contains information to change the default function of the AUX A from the default configuration to standard RS-232 serial ports.

By default, AUX A (COM2) is configured for use with RAS and NetMeeting.

Using the AUX A Port as a COM Port

The AUX A port is pre-configured for a modem. You can use the AUX A port as a standard RS-232 COM port if you perform you disable the RAS service.

1. Select **Start/Administrative Tools Common/Remote Access Admin**.
2. Select **Stop Remote Access Service** from the **Server** menu.



3. Select **Yes** to stop the Remote Access Service.



AUX A is now a standard COM port on the ATS-NTE.

Using the CONSOLE Port

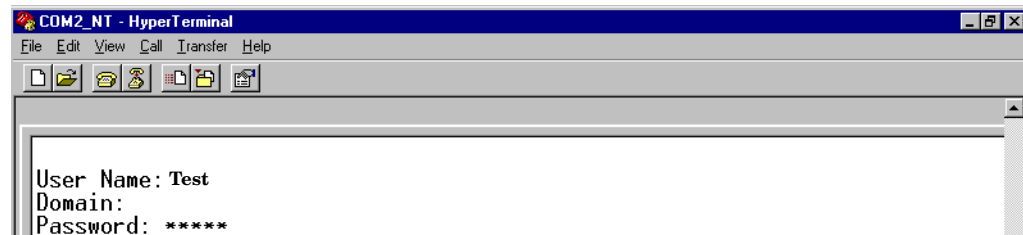
This section contains information about how to use the **CONSOLE** port to execute from the command prompt. In addition, this section discusses how to change the default configuration and use it as a standard RS-232 serial port.

By default, the **CONSOLE (COM1)** port is configured for serial console administration.

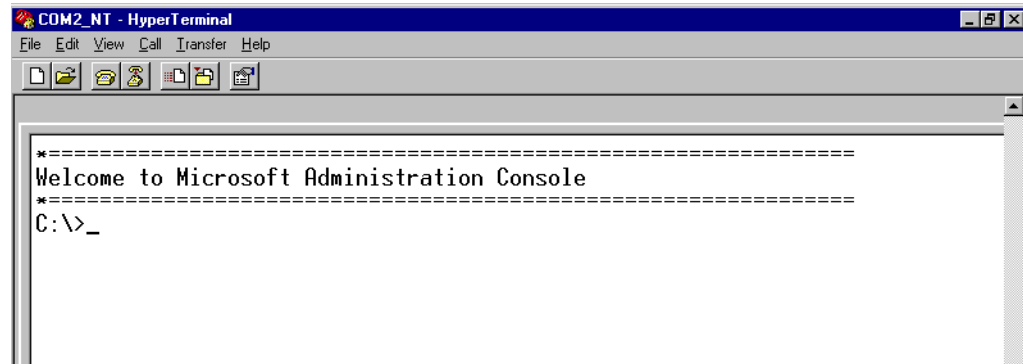
Using the CONSOLE Port

You can use the **CONSOLE** port to execute command prompt commands.

1. Connect a null-modem cable from a COM port on a PC or laptop to the port labeled **CONSOLE** on the ATS-NTE. See [AUX A and CONSOLE Port Connectors](#) on Page 55 for connector information.
2. Start a terminal program, for example, HyperTerminal and configure the following **CONSOLE** port attributes on the COM port for the PC:
 - Bits per second = 57600
 - Data bits = 8
 - Parity = None
 - Stop bits = 1
 - Flow control = None
3. Enter the user name and password of a user with a valid login.



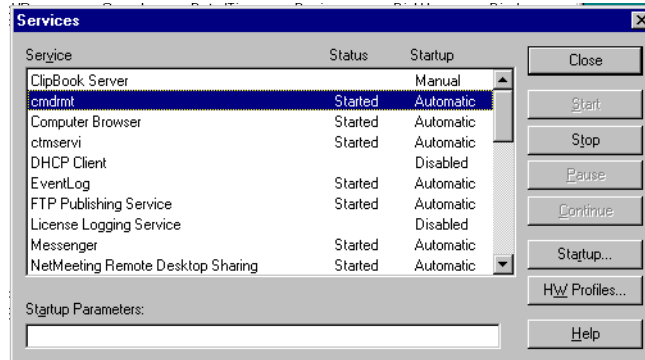
The Welcome to Microsoft Administration Console screen appears.



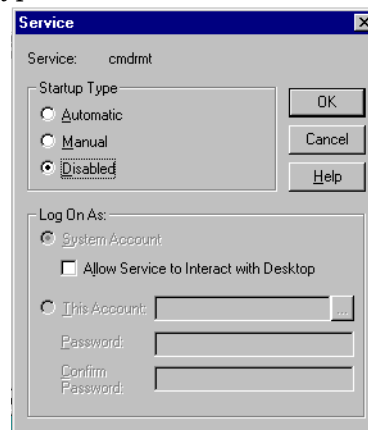
Using the CONSOLE Port as a COM Port

The CONSOLE port is pre-configured for use with the Console Management system. The following shows how to disable CONSOLE mode and use the port as a standard RS-232 COM port.

1. Open the **Services Control** panel.
2. Highlight the **cmdrmt** entry in the Services popup and select the **Startup** button.



3. Change the Startup type to **Disabled** and select **Ok**.



4. Select the **Close** button in the Services popup.

Troubleshooting and Technical Support

This section contains troubleshooting information for your Comtrol device. You should review the following subsections before calling Technical Support because they will request that you perform many of the procedures or verifications before they will be able to help you diagnose the problem.

- Troubleshooting checklist
- Using the recovery CD
- Running the diagnostics
- Customer support policy

If you cannot diagnose the problem, you can contact Technical Support using [Technical Support](#) on Page 53.

Troubleshooting Checklist

The following checklist may help you diagnose your problem:

- Verify that you are using the correct types of cables on the correct connectors and that all cables are connected securely using the hardware documentation.
Note: Most customer problems reported to Comtrol Technical Support are eventually traced to cabling or network problems. Use a standard Ethernet cable to connect from the 1 or 2 port to an Ethernet hub or a cross-over cable if connected directly to a NIC in a server.
- Verify that the Ethernet hub and any other network devices between the server and the Comtrol device are powered up and operating.
- Reset the power on the Comtrol device by disconnecting and reconnecting the power cord.
- Verify that the port polarity is correct, especially if using RS-422 or RS-485 mode.
- Verify that the network IP address is correct. If IP addressing is being used, the server should be able to ping the Comtrol device.
- Verify that the IP address programmed into the Comtrol device matches the unique reserved IP configured address assigned by the system administrator.
- Verify that you are addressing the serial port correctly. In many applications, device names above COM9 require the prefix \\.\ in order to be recognized. For example, to reference COM20, use \\.\COM20 as the file or port name.
- If using a PC104 RocketPort adapter, you can use one of the tools bundled with the drivers. See [Troubleshooting Serial Ports](#) on Page 31 for information about using these tools.
 - Test Terminal program (**wcom32.exe**), which can be used to troubleshoot communications on a port-by-port basis.
 - Port Monitor program (**portmon.exe**), which checks for errors, modem control, and status signals. In addition, it provides you with raw byte input and output counts.
 - Peer Tracer program (**peer.exe**), which traces driver events.
- Enable the **Verbose Event Log** feature under the **Setup Options** tab and then reboot the ATS-NTE.

Using the Recovery CD

Comtrol ships a Recovery CD with each system in the event that your Windows NT Embedded system becomes corrupt and you need to recover the image on the ATS-NTE compact flash or if you want to replace the existing flash with a larger flash.

To use the Recovery CD, you will require the following:

- A PC with a Windows operating system and a CD-ROM that supports bootable CDs.
- An IDE compact flash adapter.
- A compact flash.

Use the following procedure to recover the default ATS-NTE image onto a compact flash.

1. Turn off your PC to access the IDE cables.
2. Install the IDE compact flash adapter using the instructions that came with the adapter.
3. Insert the compact flash into the IDE compact flash adapter.
4. Disconnect any IDE hard drives.



If you do not disconnect the PC hard drives, run the risk of accidentally overwriting the contents of an existing IDE drive. Comtrol strongly recommends that you disconnect all IDE hard drives until the recovery process has been completed.

5. Insert the Recovery CD and power on the PC.

Note: *You may need to enter the system BIOS and have the CD-ROM boot first.*

6. Select the **2. Boot from CD-ROM** item.
7. Select the **1. Restore Hard Drive From CD-ROM** item.
8. Select the **Restore** button when the Hard Disk Recovery Menu appears.
9. During the reboot cycle:
 - a. Remove the CD from the drive.
 - b. Turn off the system power.
 - c. Remove the compact flash from the adapter and insert it into the ATS-NTE.
10. Reconnect the hard drives disconnected in Step 4.

Note: *If necessary, you may need to enter the BIOS and reset the boot sequence.*

Running the Diagnostics

If you suspect that a hardware problem exists, run the Comtrol ATS-NTE Diagnostics. The diagnostics will verify the operation of each I/O port.

The diagnostics are located at: C:\DeviceMaster\Utils\ATS-NTEdiag.exe.

Follow the online instructions to run the diagnostics. If you plan on testing the serial port tests (**SERIAL PORTS 1-8**), you will need loopback plugs. See the appropriate subsection in [RocketPort Serial Port Connectors](#) starting on Page 29.

Customer Support Policy

Control will support customers on the installation, use, and configuration of the ATS-NTE product on the supported operating system, and certified options. No charge support will include installation, configuration, and testing of “Control Certified” options.

Support beyond normal installation including installation of non-certified options, and interoperability with non-certified options will be provided on a fee for services basis. Fees will be \$100 per hour with a \$100 minimum per case. Customers wishing support on a fee for services bases must be pre-approved by Control prior to receiving support. Please contact Control Customer Service for information on fee for services.

Technical Support

If you need technical support, contact Control using one of the following methods.

Contact Method	Corporate Headquarters	Control Europe
FAQ/Online	http://support.comtrol.com/support.asp	
Downloads	http://support.comtrol.com/download.asp	
Email	support@comtrol.com	support@comtrol.co.uk
Web site	http://www.comtrol.com	http://www.comtrol.co.uk
Fax	(763) 494-4199	+44 (0) 1 869-323-211
Phone	(763) 494-4100	+44 (0) 1 869-323-220

Repair and Return Policy

The DeviceMaster ATS-NTE has a licensed operating system embedded in the compact flash installed on the unit. According to the OEM license agreement with Microsoft, the license must be traceable to the end user.

The DeviceMaster ATS-NTE returned for repair must have the COA label attached.

Note: Units returned for repair with the COA label missing will have an added charge of \$150.00 assessed for a new license in addition to the repair charges (if any).

Appendix A. Connectors

This section contains information about the standard connectors on the NTE. For connector information for the optional **SERIAL PORTS 1-8** connector, see the section that discusses the PCMCIA option.

VGA Connector

This table illustrates the 15-pin female VGA connector pinouts.

Pin	Signal	Pin	Signal	Pin	Signal
1	Red	6	Ground	11	Not connected
2	Green	7	Ground	12	DDCDAT
3	Blue	8	Ground	13	HSYNC
4	Not connected	9	Not connected	14	VSYNC
5	Ground	10	Ground	15	DDCCLK

PS/2 Keyboard and Mouse Connectors

This table illustrates the DIN 6-pin (PS/2) keyboard and mouse connector pinouts.

Pin	Signal	Pin	Signal
1	Keyboard Data	4	+5V
2	Mouse Data	5	Keyboard Clock
3	Ground	6	Mouse Clock

Ethernet Connectors

This table illustrates the RJ45 LAN connector pinouts.

Pin	Signal	Pin	Signal
1	TX+	5	Not connected
2	TX-	6	RX-
3	RX+	7	Not connected
4	Not connected	8	Not connected

Compact Flash Disk Connector

This table illustrates the compact flash connector pinouts.

Pin	Signal	Pin	Signal
1	Ground	26	VCC-IN, CHECK1
2	DATA 3	27	DATA 11
3	DATA 4	28	DATA 12
4	DATA 5	29	DATA 13
5	DATA 6	30	DATA 14
6	DATA 7	31	DATA 15
7	HDC_CS0#	32	HDC_CS1
8	Not connected	33	Not connected
9	Ground	34	IOR#
10	Not connected	35	IOW#
11	Not connected	36	Not connected
12	Not connected	37	Interrupt
13	VCC_COM	38	VCC_COM
14	Not connected	39	CSEL
15	Not connected	40	Not connected
16	Not connected	41	HDD_RESET
17	Not connected	42	IORDY
18	SA2	43	N/C
19	SA1	44	VCC_COM
20	SA0	45	HDD_ACTIVE#
21	DATA 0	46	Not connected
22	DATA 1	47	DATA 8
23	DATA 2	48	DATA 9
24	Not connected	49	DATA 10
25	VCC-IN, CHECK2	50	Ground

AUX A and CONSOLE Port Connectors

This table illustrates the DB9 pinouts for the AUX A and CONSOLE connectors.

Pin	Signal	Pin	Signal	Pin	Signal
1	CD	4	DTR	7	RTS
2	RxD	5	Ground	8	CTS
3	TxD	6	DSR	9	RI

PARALLEL Port

This table illustrates the DB25 PARALLEL pinouts.

Pin	Signal	Pin	Signal
1	Strobe#	14	Auto form feed #
2	Data 0	15	Error#
3	Data 1	16	Initialize
4	Data 2	17	Printer select line#
5	Data 3	18	Ground
6	Data 4	19	Ground
7	Data 5	20	Ground
8	Data 6	21	Ground
9	Data 7	22	Ground
10	Acknowledge	23	Ground
11	Busy	24	Ground
12	Paper empty	25	Ground
13	Printer select	26	Not connected

Note: The default printer is the Epson FX80.

Serial Ports 1-8 Connector (Optional)

This table lists the pinouts for the DB78 connector.

This option must be ordered or installed at the Control factory.

Pin	Signals			Pin	Signals		
	RS232	RS422	RS485		RS232	RS422	RS485
1	DTR 7	NC	NC	40	TXD 4	TXD- 4	TX/RX- 4
2	TXD 5	TXD- 5	TX/RX- 5	41	RTS 5	TXD+ 5	TX/RX+ 5
3	DTR 5	NC	NC	42	DSR 5	NC	NC
4	CTS 5	RXD+ 5	NC	43	CD 4	NC	NC
5	DSR 4	NC	NC	44	RI 4	NC	NC
6	CD 7	NC	NC	45	CTS 7	RXD+ 7	NC
7	RI 7	NC	NC	46	RXD 6	RXD- 6	NC
8	RXD 5	RXD- 5	NC	47	RI 6	NC	NC
9	CTS 6	NC	NC	48	CD 6	NC	NC
10	TXD 3	TXD- 3	TX/RX- 3	49	DTR 0	NC	NC
11	TXD 2	TXD- 2	TX/RX- 2	50	TXD 1	TXD- 1	TX/RX- 1
12	RTS 2	TXD+ 2	TX/RX+ 2	51	RTS 0	TXD+ 0	TX/RX+ 0
13	DTR 2	NC	NC	52	DTR 3	NC	NC
14	RTS 3	TXD+ 3	NC	53	CTS 1	RXD+ 1	NC
15	RI 1	NC	NC	54	DSR 0	NC	NC
16	CTS 0	RXD+ 0	NC	55	RXD 0	RXD- 0	NC
17	RXD 1	RXD- 1	NC	56	RXD 3	RXD- 3	NC
18	CD 3	NC	NC	57	CTS 3	RXD+ 3	NC
19	RI 3	NC	NC	58	DSR 2	NC	NC
20	RI 2	NC	NC	59	CTS 2	RXD+ 2	NC
21	RTS 4	TXD+ 4	TX/RX+ 4	60	RTS 7	TXD+ 7	TX/RX+ 7
22	DTR 4	NC	NC	61	DTR 6	NC	NC
23	CD 5	NC	NC	62	RTS 6	TXD+ 6	TX/RX+ 6
24	RI 5	NC	NC	63	TXD 6	TXD- 6	TX/RX- 6
25	CTS 4	RXD+ 4	NC	64	TXD 7	TXD- 7	TX/RX- 7
26	DSR 7	NC	NC	65	Ground	Ground	Ground
27	RXD 7	RXD- 7	NC	66	Ground	Ground	Ground
28	RXD 4	RXD- 4	NC	67	8 PORT	8 PORT	8 PORT
29	DSR 6	NC	NC	68	Ground	Ground	Ground
30	TXD 0	TXD- 0	TX/RX- 0	69	Ground	Ground	Ground
31	RTS 1	TXD+ 1	TX/RX+ 1	70	Ground	Ground	Ground
32	DTR 1	NC	NC	71	Ground	Ground	Ground
33	CD 1	NC	NC	72	Ground	Ground	Ground
34	DSR 1	NC	NC	73	Ground	Ground	Ground
35	CD 0	NC	NC	74	Ground	Ground	Ground
36	RI 0	NC	NC	75	Ground	Ground	Ground
37	RXD 2	RXD- 2	NC	76	Ground	Ground	Ground
38	DSR 3	NC	NC	77	Ground	Ground	Ground
39	CD 2	NC	NC	78	Ground	Ground	Ground

Appendix B. Specifications and Notices

This section discusses the following topics:

- Product specifications
 - Electromagnetic compliances
 - Environmental condition specifications
 - Hardware specifications
 - Technical specifications
 - Default operating system configuration
- FCC Part 15 Class A notices

Product Specifications

The following subsections provide a variety of information about the DeviceMaster ATS-NTE.

Electromagnetic Compliances

The following table illustrates the status of electromagnetic compliance for the ATS-NTE.

Electromagnetic Compliances	Status
Emission: Canadian EMC requirements CISPR-22/EN55022 Class A FCC Part 15 Class A	Yes Yes Yes
Immunity (motherboard): EN55024: 1998 EN61000-4-2: 1995 ESD EN61000-4-3: 1996 RF EN61000-4-4: 1994 Fast Transient EN61000-4-5: 1995 Surge EN61000-4-6: 1996 Conducted disturbance EN61000-4-8: 1993 Magnetic field EN61000-4-11: 1994 Dips and Voltage Variations	Yes Yes Yes Yes Yes Yes Yes Yes
Safety (power supply): EN60950 UL / C-UL Listed	Yes Yes

Environmental Condition Specifications

The following table illustrates environmental condition specifications for the DeviceMaster ATS-NTE.

Environmental Condition	Value
Air temperature: System on (operational) System off (storage)	0 to 60°C -20 to 85°C
Altitude	0 to 10,000 feet
Heat output	47 BTU/Hr
Humidity (non-condensing): System on (operational) System off (storage)	8% to 80% 20% to 80%



Hardware Specifications

This table lists hardware specifications for the ATS-NTE.

Specification	Description
Baud rates (default): COM1 - AUX A COM2 - CONSOLE COM3 - PCMCIA modem (optional)* COM4 to COM11 - SERIAL PORTS 1-8 (optional)	57.6 Kbps 28.8 Kbps 57.6 Kbps 300 bps to 230.4 Kbps
Optional PC104 driver control	Data bits: 7 or 8 Parity: Odd, even, none Stop bits: 1 or 2
Power input: Frequency Voltage	50/60 Hz 5 VDC
Power consumption	13.75 W
Current consumption	2.75 A
Dimensions	11" x 5.69" x 2.75" (W x L x H)
Weight: Fully-configured system with RocketPort PC104 and PCMCIA options installed Power supply Octacable	3.52 lbs 0.62 lbs 1.12 lbs

* See [Certified PCMCIA Adapters](#) on Page 41 for the list of Control approved adapters.

Technical Specifications

This subsection lists the DeviceMaster ATS-NTE technical specifications.

- Compact flash (256 MB or 512 MB) with pre-configured Windows NT Embedded operating system. See [Default Operating System Configuration](#) on Page 60 for detailed information.
- NS GXLV/GX1-300 MMX 32-Bit x86 Processor that supports the Intel[®] MMX instruction set extension for the acceleration of multi media applications. It has 16 KB unified L1 cache, five-stage pipe lined integer unit, and an integrated Floating Point Unit (FPU).
- 128 MB SDRAM system memory

- AWARD 256 Kb flash memory BIOS
- Display controller that has a MediaGx processor with 4 MB memory that supports non-interlaced CRT monitors resolutions up to 1280 x 1024 @ 256 colors or 1024 x 768 @ 16 bpp.
- 10/100M bps Ethernet Controller, with two Realtek™ RTL8139 IEEE802.u 100 BASE-TX standard dual auto-sensing interface to 10 Mbps or 100 Mbps networks. On board RJ45 connectors provide for easy connection.
- Serial ports on the motherboard.
 - AUX A (COM2) is pre-configured RAS and NetMeeting for remote management through a modem. See [Setting Up Remote Management](#) on Page 11 for the default set up. See [Using the AUX A Port as a COM Port](#) on Page 48, if you want to disable the default configuration.
 - CONSOLE (COM1) is for serial console administration. See [Using the CONSOLE Port](#) on Page 49, for information.
- Parallel port (DB25), which supports SPP/EPP/ECP mode.

Note: The default printer configuration supports the Epson™ FX80. If you require a special driver for your printer contact Control.
- PS/2 mouse connector (6-pin mini DIN) connector.
- PS/2 keyboard connector (6-pin mini DIN) connector.
- Optional PC104 serial ports with a quadcable or octacable interface that is software configurable with speeds up to 230.4 Kbps.
- Optional PCMCIA slot for Control approved devices that are pre-configured in the ATS-NTE system.

Note: The ATS-NTE PCMCIA option supports two Type II PCMCIA slots or one Type III slot, which is installed at the factory. Drivers for Control approved PCMCIA devices are installed in the system.

 - [Xircom CreditCard Wireless Ethernet Adapter](#) on Page 41
 - [Xircom RealPort Modem 56 GlobalACCESS Adapter](#) on Page 46

The hardware supports the following items, but they are not supported by the Windows NT Embedded operating system:

- USB interface
- Power management
- Watch-Dog Timer

Default Operating System Configuration

The following list is a baseline operating system configuration for the ATS-NTE. For information about the operating system, see Windows NT Embedded on the Microsoft web site at: <http://www.microsoft.com/windows/embedded/nt/default.asp>.

System

Platform

System Role: Workstation System
 Core OS: Standard OS
 HAL: Standard HAL
 Virtual Memory: No Page File
 Error Recovery: System Message Interception

Devices

Storage
 Floppy Disk: Standard Floppy Disk
 Fixed Disk
 CompactFlash IDE disk
 EIDE Disk
 SCSI Disk

CD-ROM
EIDE CD-ROM
SCSI CD-ROM

File Systems
CDFS
FAT
NTFS

Display Drivers
Media GX video chip driver
VGA

Keyboard
Keyboard Layout: US Keyboard Layout
Keyboard Drivers: PC/AT Keyboard Driver
Keyboard Input Locale: English (US) Input Locale
Mouse: Microsoft PS/2 Mouse

Bus Devices
EIDE SCSI Adapter
EIDE SCSI Driver
PCMCIA Controller

Serial Ports
COM1 (native)
COM2 (native)
COM3 (optional PCMCIA modem)
COM4 (optional starting COM port number RocketPort PC104)

Parallel Ports: LPT1

Modems: Standard 28.8Kbps Modem

Printers: FX80

Modems (Second Instance): Xircom 56K PCMCIA Modem)

Network

Membership: Workgroup Participation

Adapters:

RealTek RTL8139 Fast PCI Adapter
RealTek RTL8139 Fast PCI Adapter (Second Instance)
CWE1130 Xircom Wireless Ethernet adapter (Third Instance)

Drivers:

CWE1100 Xircom Wireless Ethernet driver
RTL8139

Protocols

NetBEUI
PPTP
TCP/IP

Services

Computer Browser
DHCP Client
LAN Manager Server
LAN Manager Workstation
Messenger
NetBIOS
NT LM Security Support Provide
RAS Client
RPC
Simple TCP Services
SNMP
WinSock

- Network Applications
 - Net Command (NET.EXE)
 - TCP/IP Utilities

Windows Services

- OLE/COM
 - DCOM
 - Cryptography Core
 - TAPI 2.1
 - Telephony Service Providers
 - Kernel TSP
 - Unimodem

Database Access

- Database Client Support: ODBC
 - ODBC Access Driver
 - ODBC Core
 - ODBC Jet Support
 - ODBC Sql Server Driver

Management

- Management Applications
 - Remote Administration
 - Graphical Remote Administration
 - Serial Console Administration
 - Telnet Server
 - System Configuration Management
 - Registry Management: Registry Editor
 - Storage Administration
 - Windows Disk Management: Disk Administrator
 - User Administration
 - User Manager
 - User Manager for Domains
 - Microsoft Management Console: MMC
 - Performance Management and Troubleshooting
 - System Events: Event Viewer (disabled)
 - Performance Monitoring
 - Performance Monitor
 - Task Manager
 - Windows NT Diagnostics
 - Management Services
 - Event Logging
 - Performance Counters

Desktop Settings

- Font: MS Sans Serif Font
- Accessibility: Standard Accessibility
- Application Links: Explorer Links

Global System Settings

- Device Settings
- Service Settings
- Time Zone Settings

Shared System Components

- Console Administration Common
- Display Common
- Keyboard Drivers Common
- Keyboard Locale Common
- Logon Screen Saver

Mouse Common
 Network Common
 Parallel Ports Common
 SCSI Common
 Serial Ports Common
 Virtual Memory Common

Application**Shell:** Explorer Shell**Utilities**

DeviceMaster Components
 DeviceMaster Diagnostic Tests
 DeviceMaster SocketServer
 DeviceMaster SystemManager
 DeviceMaster WebServer
 Explorer
 File Attribute Command
 Shutdown Utility
 System Cloning
 Windows NT Command Prompt
 Windows NT Help Engine

Accessories

Calculator
 Character Map
 Clock
 Hyper Terminal
 Notepad
 PC104 RocketPort

Notices**Radio Frequency Interference (RFI) (FCC 15.105)**

This equipment has been tested and found to comply with the limits for Class A digital devices pursuant to Part 15 of the FCC Rules.

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. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try and correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Labeling Requirements (FCC 15.19)

This equipment complies with part 15 of FCC rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operation.

Modifications (FCC 15.21)

Changes or modifications to this equipment not expressly approved by Comtrol Corporation may void the user's authority to operate this equipment.

Serial Cables (FCC 15.27)

This equipment is certified for Class A operation when used with unshielded cables.

Underwriters Laboratory

This equipment is Underwriters Laboratory "UL" listed.

Important Safety Information

To avoid contact with electrical current:

- Never install electrical wiring during an electrical storm.
- Never install the power plug in wet locations.
- Use a screwdriver and other tools with insulated handles.



Appendix C. Default System Values

This subsection contains the following information:

- System I/O address map
- First MB memory map

System I/O Address Map

This table illustrates the system I/O address map for the ATS-NTE.

I/O Address	Map Description
000-01F	DMA Controller #1
020-021	Interrupt Controller # 1, Master
022-023	Chipset address
040-05F	System Timer
060-06F	Standard 101/102 keyboard Controller
070-07F	Real time Clock, NMI Controller
080-0BF	DMA Page Register
0A0-0BF	Interrupt Controller # 2
0C0-0DF	DMA Controller # 2
0F0-0F0	Clear Math Coprocessor Busy
0F1-0F1	Reset Math Coprocessor
0F8-0FF	Math Coprocessor
1F0-1F8	VIR BUS Master PCI IDE Controller
200-207	Game I/O
278-27F	Reserved
2F8-2FF	Serial Port 2
378-37F	Parallel Printer Port 1
3B0-3DF	Cyrix Graphic Adapter
3F0-3F7	Available
3F8-3FF	Serial Port 1
443	Watch-Dog timer enable
843	Watch-Dog timer disable

First MB Memory Map

This table illustrates the first MB memory map.

Address	Description
F000h-FFFFh	System ROM
D800h-EFFFh	Unused
C800h-D7FFh	Ethernet ROM
C000h-C7FFh	Expansion ROM
B800h-BFFFh	CGA/EGA/VGA text
B000h-B7FFh	Unused
A000h-AFFFh	EGA/VGA graphics
0000h-9FFFh	Base memory

Appendix D. Changing BIOS Configuration

This section discusses using the BIOS to change the system defaults. The DeviceMaster ATS-NTE uses the AWARD PCI/ISA BIOS for system configuration. The AWARD BIOS setup program is designed to provide maximum flexibility in configuring the system by offering various options which may be selected to meet your requirements.

Note: *The information in this appendix is for reference only. The DeviceMaster ATS-NTE is pre-configured before shipment.*

Getting Started

When you apply power on the DeviceMaster ATS-NTE, the BIOS enters Power-on-Self Test (POST) routines. These routines are executed for system test, initialization, and system configuration verification. After the POST routines are completed, the following message appears:

" Hit DEL if you want to run SETUP"

To access the AWARD BIOS SETUP UTILITY, press the key. This screen displays.

ROM PCI/ISA BIOS (2A43419F)
CMOS SETUP UTILITY
AWARD SOFTWARE, INC.

STANDARD CMOS SETUP	INTEGRATED PERIPHERALS
BIOS FEATURES SETUP	SUPERVISOR PASSWORD
CHIPSET FEATURES SETUP	USER PASSWORD
POWER MANAGEMENT SETUP	IDE HDD AUTO DETECTION
PNP/PCI CONFIGURATION	SAVE & EXIT SETUP
LOAD BIOS DEFAULTS	EXIT WITHOUT SAVING
LOAD SETUP DEFAULTS	
Esc : Quit	↑ ↓ + - : Select Item
F10 : Save & Exit Setup	(Shift)F2 : Change Color

Standard CMOS Setup

The **Standard CMOS Setup** screen is used for basic hardware system configuration, such the Date and Time settings.

```

ROM PCI/ISA BIOS (2A43419F)
STANDARD CMOS SETUP
AWARD SOFTWARE, INC.

```

Date (mm:dd:yy) : Thu, Apr 26 2001								
Time (hh:mm:ss) : 11 : 25 : 55								
HARD DISKS	TYPE	SIZE	CYLS	HEAD	PRECOMP	LANDZ	SECTOR	MODE
Primary Master	: None	0M	0	0	0	0	0	----
Primary Slave	: None	0M	0	0	0	0	0	----
Secondary Master	: None	0M	0	0	0	0	0	----
Secondary Slave	: Auto	0M	0	0	0	0	0	AUTO
Drive A : None								
Drive B : None								
Video : EGA/VGA								
Halt On : No Errors								
ESC : Quit		↑ ↓ → ← : Select Item			PU/PD/+/- : Modify			
F1 : Help		(Shift)F2 : Change Color						

This figure illustrates the DeviceMaster ATS-NTE factory defaults.

Use the following procedure to change the system date.

1. Press either the Arrow or <Enter> key on your keyboard to select one of the fields (Month, Date or Year).
2. Press either <PgUp> or <PgDn> to increase or decrease the value of that field.
3. Use the same key sequence to change the time setting.

BIOS Features Setup

The **BIOS Features Setup** screen is designed for fine-tuning your system and improving its performance. Typically, you do not have to change the default settings, which are pre-set for the most reliable operation.

```

ROM PCI/ISA BIOS (2A43419F)
BIOS FEATURES SETUP
AWARD SOFTWARE, INC.

```

Virus Warning	: Disabled	Video BIOS Shadow	: Enabled
CPU Internal Cache	: Enabled	C8000-CBFFF Shadow	: Disabled
Quick Power On Self Test	: Enabled	CC000-CFFFF Shadow	: Disabled
Boot From LAN First	: Disabled	D0000-D3FFF Shadow	: Disabled
Boot Sequence	: C only	D4000-D7FFF Shadow	: Disabled
Swap Floppy Drive	: Disabled	D8000-DBFFF Shadow	: Disabled
Boot Up Floppy Seek	: Disabled	DC000-DFFFF Shadow	: Disabled
Boot Up NumLock Status	: On	Cyrix 6x86/MII CPUID	: Enabled
Boot Up System Speed	: High		
Gate A20 Option	: Fast		
Memory Parity Check	: Enabled		
Typeomatic Rate Setting	: Disabled		
Typeomatic Rate (Chars/Sec)	: 6		
Typeomatic Delay (Msec)	: 250		
Security Option	: Setup	ESC : Quit	↑↓←→ : Select Item
PCI/VGA Palette Snoop	: Disabled	F1 : Help	PU/PD/+/- : Modify
OS Select For DRAM > 64MB	: Non-OS2	F5 : Old Values (Shift)F2 : Color	
Report No FDD For WIN 95	: Yes	F6 : Load BIOS Defaults	
		F7 : Load Setup Defaults	

This figure illustrates the DeviceMaster ATS-NTE factory defaults.

Chipset Features Setup

The **Chipset Features Setup** screen primary controls the board's chipset and is used to change the chipset configuration.

This figure illustrates the DeviceMaster ATS-NTE factory defaults.

```

ROM PCI/ISA BIOS (2A434I9F)
CHIPSET FEATURES SETUP
AWARD SOFTWARE, INC.

```

SDRAM CAS latency Time : 3 T	
SDRAM Clock Ratio Div By : 4	
16-bit I/O Recovery (CLK): 5	
8-bit I/O Recovery (CLK): 5	
USB Controller : Disabled	
	ESC : Quit ↑↓+* : Select Item
	F1 : Help PU/PD/+/- : Modify
	F5 : Old Values (Shift)F2 : Color
	F6 : Load BIOS Defaults
	F7 : Load Setup Defaults

Note: Changing these default setting improperly can result in an unstable system.

Power Management Setup

The **Power Management Setup** screen helps you handle the ROCKY-568SEV board's "green" function. This feature can shut down the video display and hard disk to save energy.

This figure illustrates the DeviceMaster ATS-NTE factory defaults.

```

ROM PCI/ISA BIOS (2A434I9F)
POWER MANAGEMENT SETUP
AWARD SOFTWARE, INC.

```

Power Management : Disabled	IR01 (KeyBoard) : ON
** PM Timers **	IR03 (COM 2) : OFF
Doze Mode : Disabled	IR04 (COM 1) : OFF
Standby Mode : Disabled	IR05 (LPT 2) : OFF
HDD Power Down : Disabled	IR06 (Floppy Disk): OFF
MODEM Use IRQ : NA	IR07 (LPT 1) : OFF
Throttle Duty Cycle : 33.3 %	IR09 (IRQ2 Redir) : OFF
	IRQ10 (Reserved) : OFF
	IRQ11 (Reserved) : OFF
	IRQ12 (PS/2 Mouse) : OFF
	IRQ13 (Coprocessor): OFF
	IRQ14 (Hard Disk) : OFF
	IRQ15 (Reserved) : OFF
	ESC : Quit ↑↓+* : Select Item
	F1 : Help PU/PD/+/- : Modify
	F5 : Old Values (Shift)F2 : Color
	F6 : Load BIOS Defaults
	F7 : Load Setup Defaults

PNP/PCI Configuration

This menu is used to assign IRQ numbers to your PNP/PCI devices manually. This figure illustrates the DeviceMaster ATS-NTE factory defaults.

ROM PCI/ISA BIOS (2A43419F)
PNP/PCI CONFIGURATION
AWARD SOFTWARE, INC.

PNP OS Installed : No	PCI IRQ Activated By : Level
Resources Controlled By : Auto	Used MEM base addr : N/A
Reset Configuration Data : Disabled	
IRQ-3 assigned to : PCI/ISA PnP	
IRQ-4 assigned to : PCI/ISA PnP	
IRQ-5 assigned to : Legacy ISA	
IRQ-6 assigned to : Legacy ISA	
IRQ-7 assigned to : Legacy ISA	
IRQ-9 assigned to : PCI/ISA PnP	
IRQ-10 assigned to : PCI/ISA PnP	
IRQ-11 assigned to : PCI/ISA PnP	
IRQ-12 assigned to : PCI/ISA PnP	
IRQ-14 assigned to : PCI/ISA PnP	
IRQ-15 assigned to : PCI/ISA PnP	
DMA-0 assigned to : PCI/ISA PnP	
DMA-1 assigned to : PCI/ISA PnP	ESC : Quit
DMA-3 assigned to : PCI/ISA PnP	F1 : Help
DMA-5 assigned to : PCI/ISA PnP	F5 : Old Values
DMA-6 assigned to : PCI/ISA PnP	F6 : Load BIOS Defaults
DMA-7 assigned to : PCI/ISA PnP	F7 : Load Setup Defaults
	↑↓+ : Select Item
	PU/PD/+/- : Modify
	(Shift)F2 : Color

- **PNP OS Installed:** If you install a Plug and Play operating system (OS), the OS will reassign the interrupt even if you choose **Yes** for this option. If you install a non-Plug and Play OS or if you want to prevent the OS from reassigning the board's IRQ settings, choose **No** for this option.
- **Resources Controlled By:** Select **Auto** if you want the computer to assign the IRQs.
- **Reset Configuration Data:** Enabling this field means you allow the configuration data to be reset.
- **IRQ-xx assigned to:** These fields show whether certain IRQ is used by a PCI/ISA card.

Load BIOS Defaults

If you choose to activate the **Load BIOS Defaults** menu and then answer **Y** to load the Load BIOS Defaults prompts, the AWARD defaults load with the exception of the Standard CMOS setup.

```

ROM PCI/ISA BIOS (2A434I9F)
CMOS SETUP UTILITY
AWARD SOFTWARE, INC.

```

STANDARD CMOS SETUP	INTEGRATED PERIPHERALS
BIOS FEATURES SETUP	SUPERVISOR PASSWORD
CHIPSET FEATURES SETUP	USER PASSWORD
POWER MANAGEMENT SETUP	IDE HDD AUTO DETECTION
PNP/PCI CONFIGURA	ETUP
LOAD BIOS DEFAULT	SAVING
LOAD SETUP DEFAULTS	
Esc : Quit F10 : Save & Exit Setup	
↑ ↓ → ← : Select Item (Shift)F2 : Change Color	

Note: If you load the default BIOS, you will change Control™ Corporation's default settings and may experience unreliable results and an unstable platform.

Select N to abort this screen.

Load Setup Defaults

If you select **Y** to this field, the **Setup Defaults** load except Standard CMOS SETUP.

```

ROM PCI/ISA BIOS (2A434I9F)
CMOS SETUP UTILITY
AWARD SOFTWARE, INC.

```

STANDARD CMOS SETUP	INTEGRATED PERIPHERALS
BIOS FEATURES SETUP	SUPERVISOR PASSWORD
CHIPSET FEATURES SETUP	USER PASSWORD
POWER MANAGEMENT SETUP	IDE HDD AUTO DETECTION
PNP/PCI CONFIGURA	ETUP
LOAD BIOS DEFAULT	SAVING
LOAD SETUP DEFAULTS	
Esc : Quit F10 : Save & Exit Setup	
↑ ↓ → ← : Select Item (Shift)F2 : Change Color	

Note: If you load the Setup defaults, you will change Control Corporation's default settings.

The screens in this document illustrate the Control default setting, which are optimal configuration settings for your system.

Integrated Peripherals

This option is used to assign Onboard I/O, IRQ, DMA, etc.

ROM PCI/ISA BIOS (2A434I9F)
INTEGRATED PERIPHERALS
AWARD SOFTWARE, INC.

IDE HDD Block Mode	: Enabled	Onboard Parallel Port	: 378/IRQ7
Primary IDE Channel	: Enabled	Parallel Port Mode	: SPP
Master Drive PIO Mode	: Auto		
Slave Drive PIO Mode	: Auto		
Secondary IDE Channel	: Enabled		
Master Drive PIO Mode	: Auto		
Slave Drive PIO Mode	: Auto		
IDE Primary Master UDMA	: Auto		
IDE Primary Slave UDMA	: Auto		
IDE Secondary Master UDMA	: Auto		
IDE Secondary Slave UDMA	: Auto		
KBC input clock	: 8 MHz	Multiple Monitor Support	: M/B First
Onboard FDC Controller	: Enabled	Video Memory Size	: 2.5 M
Onboard Serial Port 1	: 3F8/IRQ4	Flat Panel Status	: Both
Onboard Serial Port 2	: 2F8/IRQ3	Flat Panel Resolution	: 800x600
UART Mode Select	: Normal		

This figure illustrates the DeviceMaster ATS-NTE factory default settings.

- Multiple Monitor Support -- No Onboard, PCI first, M/B first
Use to select the primary VGA for multiple monitor support in Windows.
- Video Memory Size -- 4.0M
Use to select the size of video memory.

Supervisor Password and User Password

The **Supervisor Password** screen sets a password that is used to protect your system and Setup Utility. The Supervisor Password has higher priority than User Password. Once you setup the Supervisor password, the system will always ask you to key-in the Supervisor Password every time you enter the BIOS SETUP.

If you enter the BIOS SETUP with Supervisor Password, you can choose every setup/option on the main menu. When entering the BIOS with the User Password, however, you can only choose three setup/options (USER PASSWORD, SAVE & EXIT SETUP and EXIT WITHOUT SAVING).

Use the following procedure to disable the Supervisor and User passwords:

1. Enter the BIOS SETUP program with the Supervisor password.
2. Press the <Enter> key when prompted for a new password.

Note: If you forget the password, follow the Clear/Reset CMOS procedure, see [Clear CMOS Setup](#).

SVGA Setup Introduction

The DeviceMaster ATS-NTE is equipped with an on-board LCD/VGA interface. The following subsections discuss its specifications and features.

Chipset

The DeviceMaster ATS-NTE uses a Cyrix™ CX5530 chipset as its SVGA controller. The chipset is compatible with most traditional analog CRT monitors and also accepts most interlaced and non-interlace analog monitors (color and monochrome VGA) with high-resolution quality while maintaining complete IBM™ VGA compatibility.

Digital monitors (i.e. MDA, CGA, and EGA) cannot be supported. Multiple frequency (multisync) monitors operate as if they are analog monitors.

Display Memory

With the 4 MB UMA memory, the VGA controller can make CRT displays or color panel displays perform with resolutions up to 1024 x 768 at 64K colors.

Display Driver

This device supports a MediaGX driver.

PCI Bus Ethernet Interface

The DeviceMaster ATS-NTE provides a high performance 32-bit Ethernet chipset which is fully compliant with the IEEE 802.3 standard. The Ethernet port supports a standard RJ45 connector and is both 100Base-T and 10Base-T compatible. The major network operating system fits it. The Ethernet port supplies a standard RJ45 connector on board.

Index

Numerics

10/100M bps Ethernet [60](#)

A

accessing

ATS-NTE with NetMeeting [14](#)

adapters, supported

Xircom CreditCard Wireless Ethernet adapter
(CWE1130-NA) [41](#)

Xircom RealPort Modem 56 GlobalACCESS [46](#)

agency notices [63](#)

air temperature [59](#)

altitude [59](#)

AUX A port

default baud [59](#)

pinouts [55](#)

reconfigure as standard serial port [48](#)

required setup [11](#)

B

baud rates

default [59](#)

BIOS [60](#)

changing configuration [67-73](#)

building

DB25loopback plugs [30](#)

DB9 loopback plugs [29](#)

null-modem cable [31](#)

RJ45 loopback plugs [30](#)

RS-485 test cable [30](#)

straight-through cable [31](#)

C

cables

build null-modem [31](#)

build RS-485 test cable [30](#)

build straight-through [31](#)

changing

BIOS configuration [67-73](#)

default computer name [9](#)

network settings [8](#)

PC104 name [21](#)

Starting COM port number

PC104 [21](#)

workgroup name [9](#)

client

setup [13](#)

Xircom wireless

change name [42](#)

Clone [19](#)

COA label [53](#)

COM1-3

default baud [59](#)

COM4-11 port properties

PC104 [18](#)

COM4-COM11

baud rate range [59](#)

compact flash

size options [59](#)

usage caution [14](#)

compact flash connector [55](#)

computer name

changing default [9](#)

configuration

changing BIOS [67-73](#)

client setup [13](#)

default operating system [60](#)

Ethernet ports [8](#)

NetMeeting [14](#)

NetMeeting setup [10](#)

network settings [8](#)

PC104 COM port properties [18](#)

PC104 serial ports [18](#)

RAS TCP/IP [11](#)

Xircom wireless adapter [41](#)

connecting serial devices [22](#)

connectors [54-57](#)

CONSOLE port

default baud [59](#)

how to use [49](#)

pinouts [55](#)

reconfigure as a COM port [50](#)

current

consumption [59](#)

D

DB25 connectors

loopback plugs

PC104 [30](#)

PC104 [29](#)

DB9 connectors

loopback plugs

PC104 [29](#)

PC104 [29](#)

straight-through cables [31](#)

diagnostics [52](#)

dialin

NetMeeting configuration [10](#)

dimensions [59](#)

display controller [60](#)

documentation updates [53](#)

downloads [53](#)

drivers

installing modem [26](#)

PC104 version [18](#)

PCMCIA [6](#)

printer default [6](#)

dual-Ethernet ports [8](#)

E

electromagnetic compliances [58](#)

email

Technical Support [53](#)

emission [58](#)

environmental conditions [59](#)

Ethernetnetwork configuration [8](#)type [60](#)**Ethernet connectors** [54](#)**Ethernet LEDs** [7](#)**F****FAQs** [53](#)**fax**Technical Support [53](#)**FCC rules** [63](#)**file**management [14–16](#)**files**compact flash usage [14](#)retrieving [15](#)sending [16](#)**first MB memory map** [66](#)**H****heat output** [59](#)**humidity** [59](#)**I****I/O address map** [65](#)**immunity** [58](#)**installation**hardware [5](#)**IP addresses**default [8](#)**IP gateway**default [8](#)**K****keyboard connector** [54](#)**L****LAN connectors** [54](#)**LEDs**Ethernet [7](#)TxD/RxD [7](#)**loopback plugs**DB25 [30](#)DB9 [29](#)RJ45 [30](#)**M****managing files** [14–16](#)**Map CD to DSR** [19](#)**memory map**first MB [66](#)**modems**configuring RAS [11](#)installing manufacturer's driver [26](#)using standard modem driver [22](#)**mouse connector** [54](#)**multiple unit installation**change computer name [9](#)**N****NetMeeting**configuration [14](#)modem set up [11](#)retrieving files [15](#)sending files [16](#)**network**configuration [8](#)connectors [54](#)Ethernet [8](#)**network settings**configuration [8](#)**null-modem cables**PC104 [31](#)**O****octacable**DB25 connectors [29](#)DB9 connectors [29](#)RJ45 connectors [30](#)**online help** [53](#)**operating system**Recovery CD [52](#)**operating system configuration**default [60](#)**Options tab**PC104 driver [21](#)**Override and lock baud rate to** [19](#)**P****PARALLEL port**connector pinouts [56](#)specifications [60](#)**PC104**DB25 connectors [29](#)DB78 connector [57](#)DB9 connectors [29](#)driver capabilities [39](#)driver control [59](#)port configuration [18](#)RJ45 connectors [30](#)RocketPort daughter card [60](#)RocketPort option [17–40](#)troubleshooting ports [31–39](#)**PCMCIA port**default baud [59](#)supported adapters [41](#)Xircom CreditCard Wireless Ethernet adapter
(CWE1130-NA) [41](#)Xircom RealPort Modem 56 GlobalACCESS
(RM56G) [46](#)**Peer Tracer** [38](#)**phone**Technical Support [53](#)**Port Monitor** [33](#)**power**consumption [59](#)input [59](#)

power management
not supported by operating system [60](#)

printer
default [56](#)
default driver [6](#)

processor [59](#)
product overview [5](#)

PS/2 keyboard [60](#)
PS/2 mouse [60](#)

Q

quadcable
DB25 connectors [29](#)
DB9 connectors [29](#)
RJ45 connectors [30](#)

R

RAS TCP/IP configuration
AUX A [11](#)

Recovery CD
how to use [52](#)

remote management
modems [11](#)

repair policy [53](#)

retrieving files
NetMeeting [15](#)

return policy [53](#)

RJ45 connectors
loopback plugs [30](#)
PC104 [30](#)
straight-through cables [31](#)

RxD LED [7](#)

S

safety [58](#)
information [64](#)

Scan Rate [21](#)

sending files
NetMeeting [16](#)

serial ports
CONSOLE port [49](#)
CONSOLE port reconfiguration [50](#)
motherboard [60](#)
PC104
configuration [18](#)
connecting devices [22](#)
option [17-40](#)
reconfiguring AUX A [48](#)

SERIAL PORTS 1-8 port
baud rate range [59](#)

SSID
Xircom wireless [42](#)

Starting COM port number
PC104 [21](#)

straight-through cables [31](#)

subnet mask
default [8](#)

supervisor password
BIOS [72](#)

system I/O address map [65](#)

system memory [59](#)

T

Technical Support [53](#)

Test Terminal [31](#)

Time on transmit data on port close [19](#)

troubleshooting [51](#)
PC104 serial ports [31-39](#)

troubleshooting hardware
diagnostics [52](#)

TxD LED [7](#)

U

USB
not supported by operating system [60](#)

USB interface [60](#)

using
CONSOLE port [49](#)
recovery CD [52](#)

utilities
Xircom RealPort Modem 56 [46](#)
Xircom wireless adapter [43](#)

V

Verbose Event Log [21](#)

VGA connector [54](#)

W

**Wait on physical transmission before
completing write** [19](#)

WCOM32 [31](#)

web site [53](#)

weight
fully configured) [59](#)

**Windows NT® 4.0 Embedded operating
system** [5](#)

Wired Equivalent Privacy (WEP) [43](#)

workgroup name
changing [9](#)

X

**Xircom CreditCard Wireless Ethernet adapter
(CWE1130-NA)**
network setup [8](#)

**Xircom RealPort Modem 56 GlobalACCESS
(RM56G)**
RAS configuration [12](#)
utilities setup [46](#)

**XircomCreditCard Wireless Ethernet adapter
(CWE1130-NA)**
configuration procedures [41](#)