MiniMAC

Installation Manual

Part Number MN/MiniMAC.IM
Revision 0

Comtech EFData is an ISO 9001 Registered Company

MiniMAC

Rack Management System
Installation Manual

Part Number MN/MiniMAC.IM
Revision 0
May 31, 1999

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MiniMAC
A Monitor & Control
Management System

CHAPTER 1. INTRODUCTION

This chapter describes an overview of the MiniMAC Rack Management System, referred to in this manual as "MiniMAC." The following subjects with section numbers are described in this chapter:

1.1 Overview

The MiniMAC (Mini Monitor and Control) Rack Management System (Figure 1-1) is a real-time, PC-based monitor and control system designed to interface with Adaptive Broadband satellite modems, Radio Frequency (RF) terminals, switches, converters, and other Adaptive Broadband equipment.

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Chapter 2. INSTALLATION

This chapter provides the equipment required and the mechanical setup for the MiniMAC system. The following subjects with section numbers are described in this chapter:

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Chapter 3.
MiniMAC PROGRAM

This chapter describes the installation of the MiniMAC program. The following subjects with section numbers are described in this section:

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Chapter 4.
REGISTRY EDITOR

This chapter describes the Registry Editor. The Registry Editor has all the system configuration parameters for the MiniMAC operation. The following subjects with section numbers are described in this section.

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Chapter 5
SERVICE PACK

This chapter provides information on the Windows NT Service Pack. The following subjects with section numbers are described in this section.

Notes:

1. Service Pack is used when the Windows NT configuration has been altered. This usually occurs when hardware or software has been added to the system. After installing new hardware or new programs, it is recommended to run the Service Pack.
2. It is not necessary to run Service Pack if the Registry File has been modified.

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Chapter 6.
SYSTEM SETUP PROGRAM

This chapter describes the System Setup program for the MiniMAC program. This program configures the COMM ports and adds Adaptive Broadband devices to each port. The following subjects with section numbers are described in this section.

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Chapter 7. OVERVIEW EDITOR PROGRAM

This chapter describes the overview editor program. This program builds the MiniMAC overview screen. The following subjects with section numbers are described in this section.

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Appendix A. DATA

This appendix describes necessary Windows NT™ functions required to operate in the MiniMAC program. The following subjects with section numbers are described in this section.

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Appendix B. TROUBLESHOOTING

This appendix describes the troubleshooting guide that may be required during the installation of the MiniMAC program.

Subject	Section No.
Troubleshooting	B.1

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Glossary

The following is a list of acronyms and abbreviations that may be found in this manual.

Acronym/ Abbreviation	Definition
ACL	Advanced Communication Link
ASYNC	Asynchronous
BOP	Breakout Panel
C	Centigrade
COM	Communication
cm	Centimeter
CPU	Central Processing Unit
DOS	Data operating System
EISA	Europe Industry Standard Architecture
exe	Execute
F	Fahrenheit
I/O	Input/Output
IBM™	International Business Machine
ILC	Industrial Logic Corporation
ILCNCS	Industrial Logic Corporation Network Control System
IP	Internet Protocol
IRQ	Interupt Request
ISA	Industry Standard Architecture
EIA	Electronic Industries Association
LED	Liquid Emitter Diode
LPT	Local Port Terminal
MiniMAC	Mini Monitor and Control
PC	Personal Computer or Printed Circuit
RAS	Remote Access Server
RC	Redundancy Controller
REGEDIT	Registry Editor
RF	Radio Frequency
RFT	Radio Frequency Terminal
RMS	Rack Management System
RS	Recommended Standard
RSU	Redundancy Switch Unit

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SCS	Satellite Converter Switch
SDC	Satellite Data Converter
SDM	Satellite Data Modem
SMS	Satellite Modem Switch
SYS	System
TCP	Transport Communication Protocol
UINETMAN	User Interface Network Manager
WIN	Windows

B.1 Troubleshooting

Refer to Table B-1 if Windows NT™ does not operate with the MiniMAC program.

Table B-1. Troubleshooting

Problem	Probable Cause	Remedy
Upon computer startup, Windows NT displays message that a Driver would not install.	Port expander card has conflicting IRQ, memory, or address setting with a plug and play device.	Verify jumper or switch setting on the port expander card. Use Windows Diagnostic (Appendix A) and check settings. Reconfigure adapter properties as outlined in Chapter 3.
ILCNET and UINETMAN services will not run.	Name of computer (assigned in Windows NT) does not equal computer name specified in the Registry Editor.	Reidentify computer name. See Figure B-1: Go to: START Click on: PROGRAM Click on: ADMINISTRATIVE TOOLS Click on: WINDOWS NT DIANOGISTICS Read: Top line (will exhibit name of computer) See Figure B-2 Go to: DOS Prompt Type: REGEDIT Path: HKEY\LOCALMACHINE\SOFTWARE\ ILC\ADAPTIVE BROADBAND\SYS Computer0 = MiniMAC
ILCNET will run but, UINETMAN will not run.	Service can not find computer name, although Registry File is correct.	Verify TCP/IP Address and list in Host File. (Refer to Appendix A, Host File.)
ILCNCS will not run.	In the Registry Editor, ILC program directory path improperly created or BITMAP and/or DATABASE file folders missing.	Return to create file folders and repeat procedure. *(see Figures B-3 and B-4)*
ILCNCS will work but no communication between COMM ports and MiniMAC.	1. Hyperterm or Commtest.exe is not disabled. 2. Port expander drivers are not installed or improperly installed. Go to: EVENT VIEWER Observe: Red logo will describe event error. 3. Sentinel hardware key is missing. 4. Sentinel Driver not installed.	1. Disable Hyperterm or Commtest.exe. 2. Reinstall port expanders. 3. Verify hardware key on LPT1. 4. Install from CD.

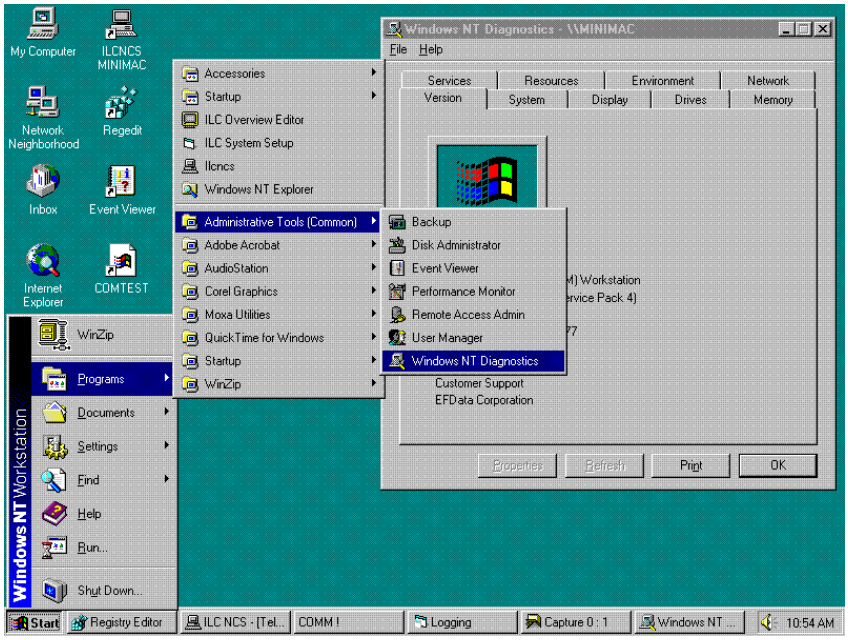


Figure B-1. Computer Name, Defined in Windows NT Setup

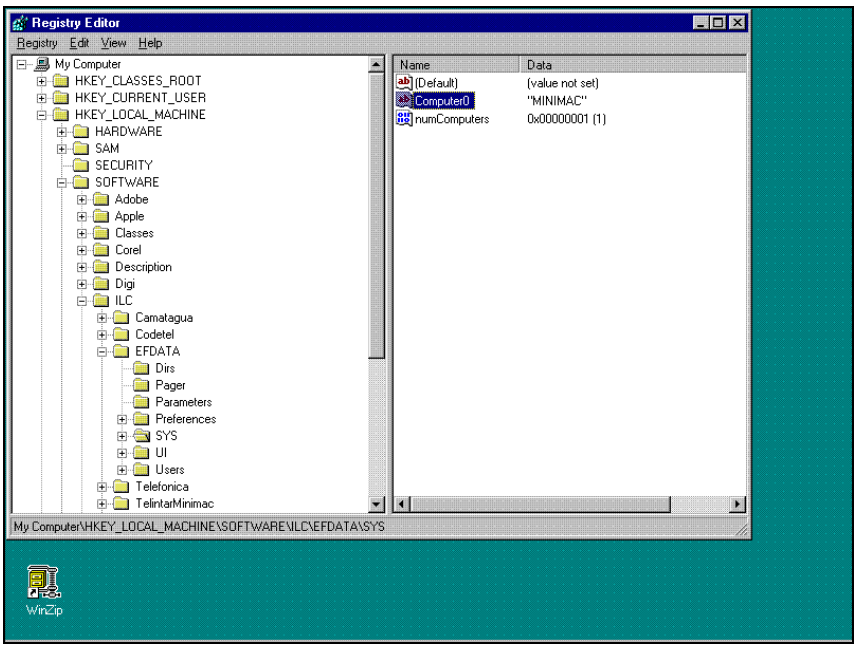


Figure B-2. Path to Computer Name in Registry Editor

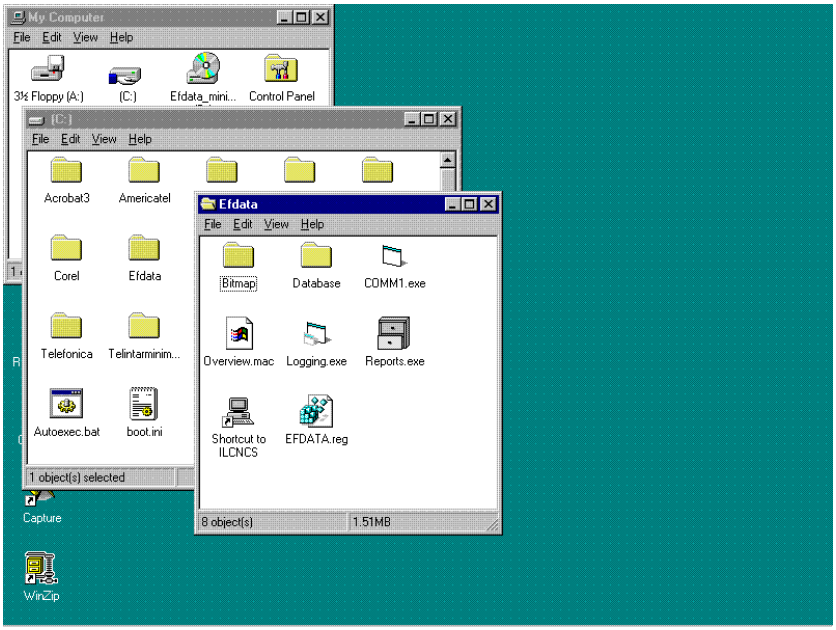


Figure B-3. Path to BITMAP and DATABASE File Folders

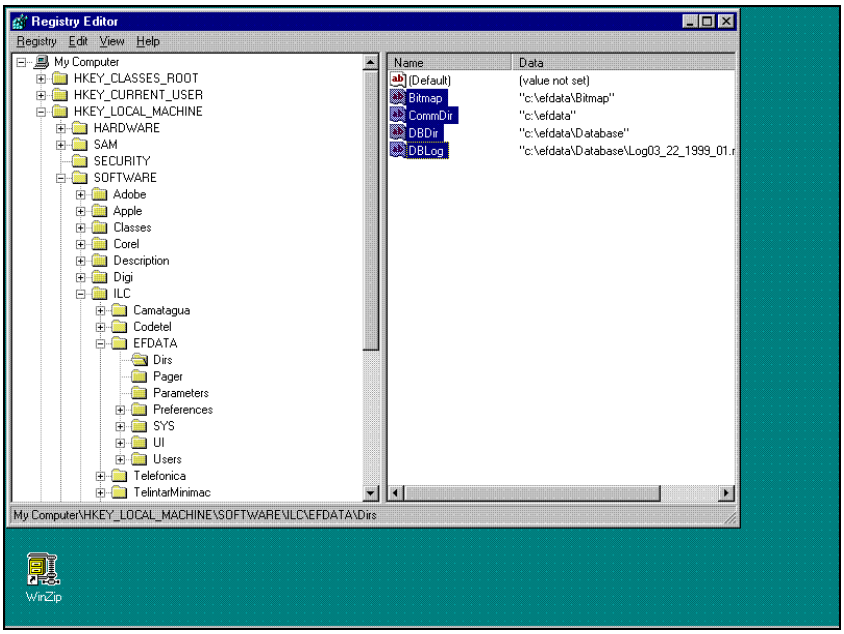


Figure B-4. Path to Registry Edit Directories

From the Registry Editor, DIRS File Folder; verify the path of the highlighted lines to the files and folders in the site file folder. If any of the files are missing or the file folders are misspelled, correct the anomaly. Refer to Chapter 3, Create New File Folder for Customer Site.

A.1 Windows NT™

The version number corresponding with this manual is: 3.4.48

A.1.1 Computer Configuration

Refer to Table A-1 for procedures applying to the operating environment for the MiniMAC.

Table A-1. Computer Configuration

Command	Response
Enter Computer Name	HPVECTRA or MiniMAC
Password	ilc (lower case)
Connect to Network (Enable)	NETWORK (using loopback adapter) REMOTE ACCESS
Select Network Adapter	MS LOOPBACK ADAPTER (s*ee Figures A-1)*
Select Protocols	TCP/IP NET BEUI *(see Figures A-2)*

When configuring Windows NT, connect to the the network using the MS Loopback Adapter.

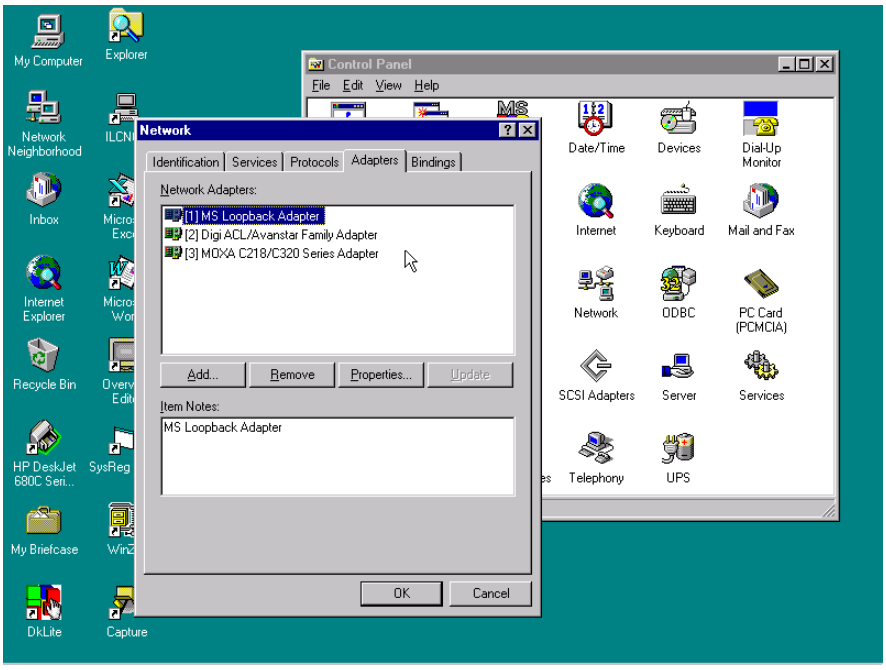


Figure A-1. Select Network Adapter

During Windows NT configuration, load the TCP/IP Protocol and configure.

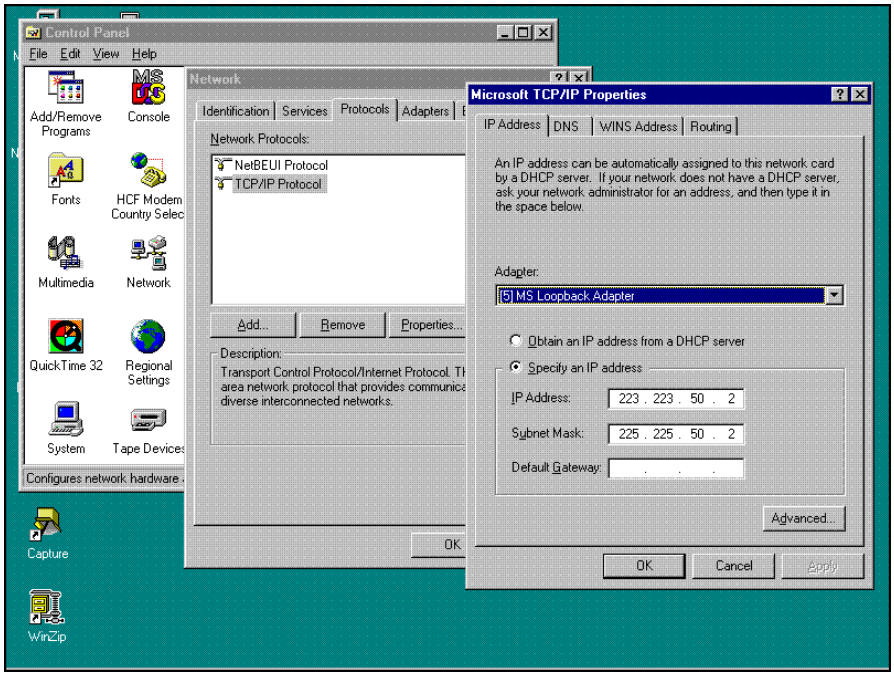
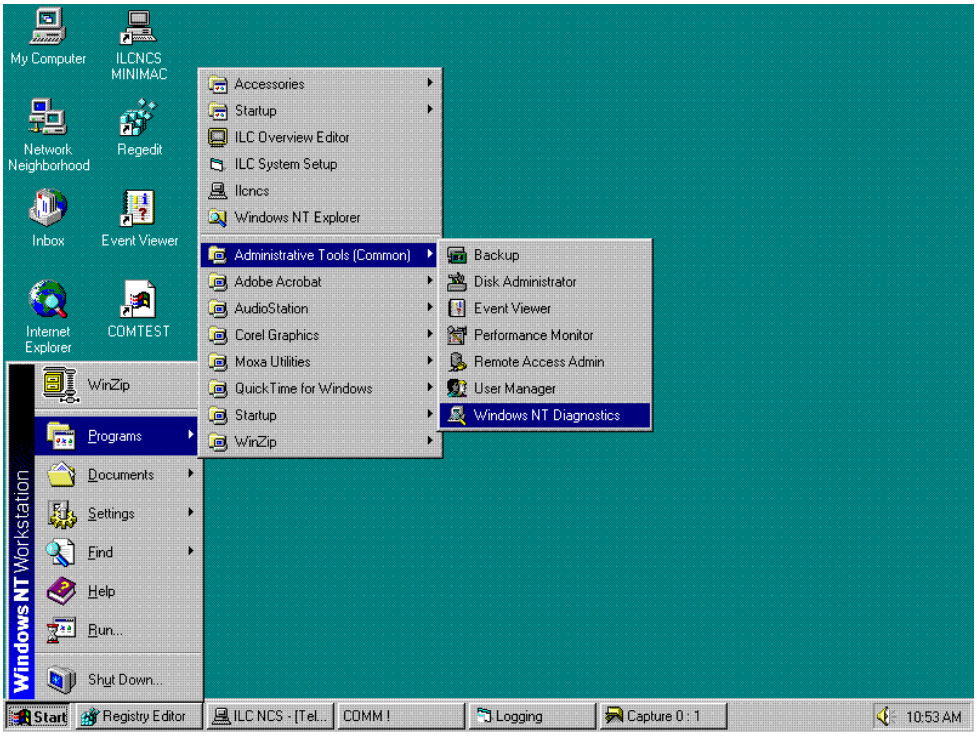


Figure A-2. TCP/IP Protocol Properties

A.2 Path to Windows NT Diagnostics

Note: Windows NT Diagnostics can be a valuable tool during computer setup.

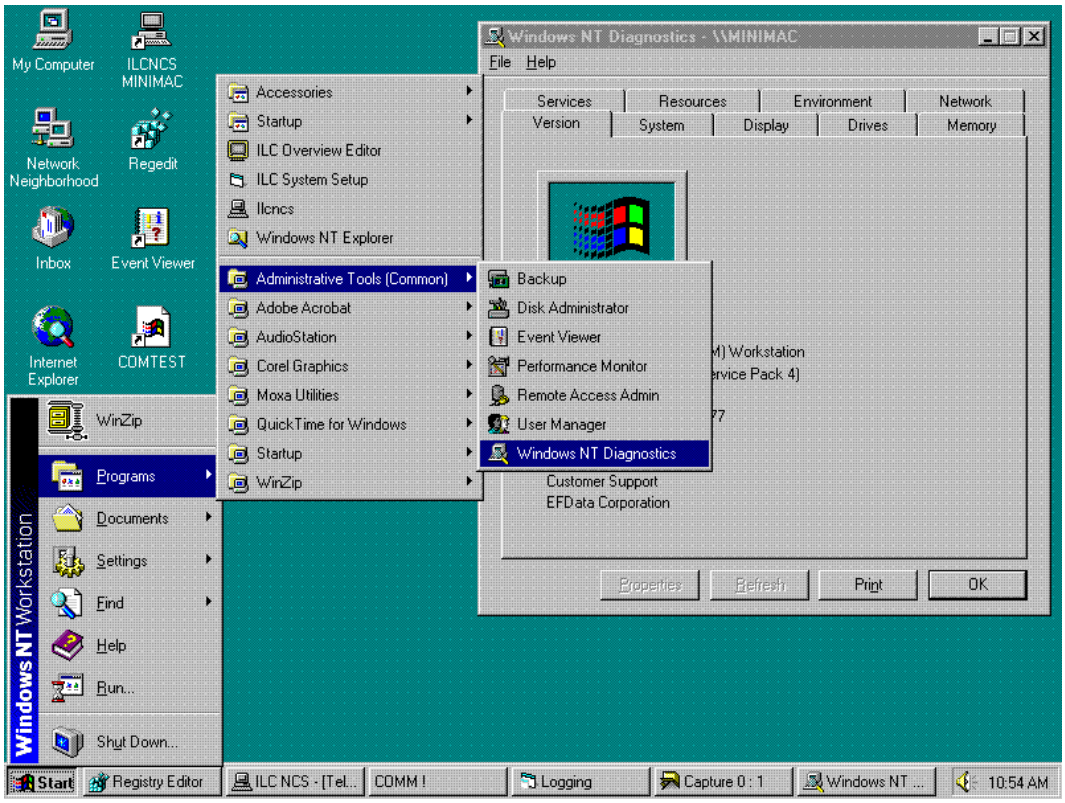
Path: Start\Programs\Administrative Tools\Windows NT Diagnostics



A.2.1 Windows NT Diagnostics

Note: The computer name is in Windows NT diagnostic header; MINIMAC

Open: Resources File Folder.

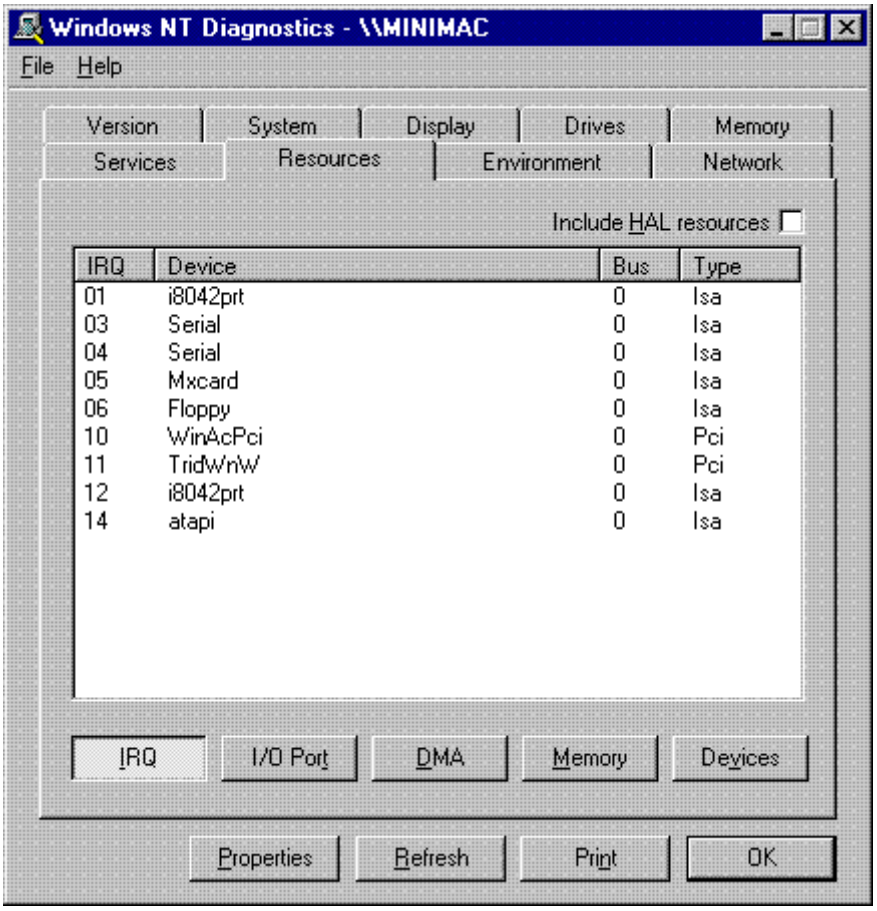


A.2.2 Windows NT Diagnostics – IRQ

Note: All devices requiring an IRQ will be displayed with the active IRQ shown in the first column. Plug and play devices will automatically be selected upon installation. Port expander cards (ACL or MOXA) must have jumpers or switches set on the card.

Select an unused IRQ for configuring the port expander card.

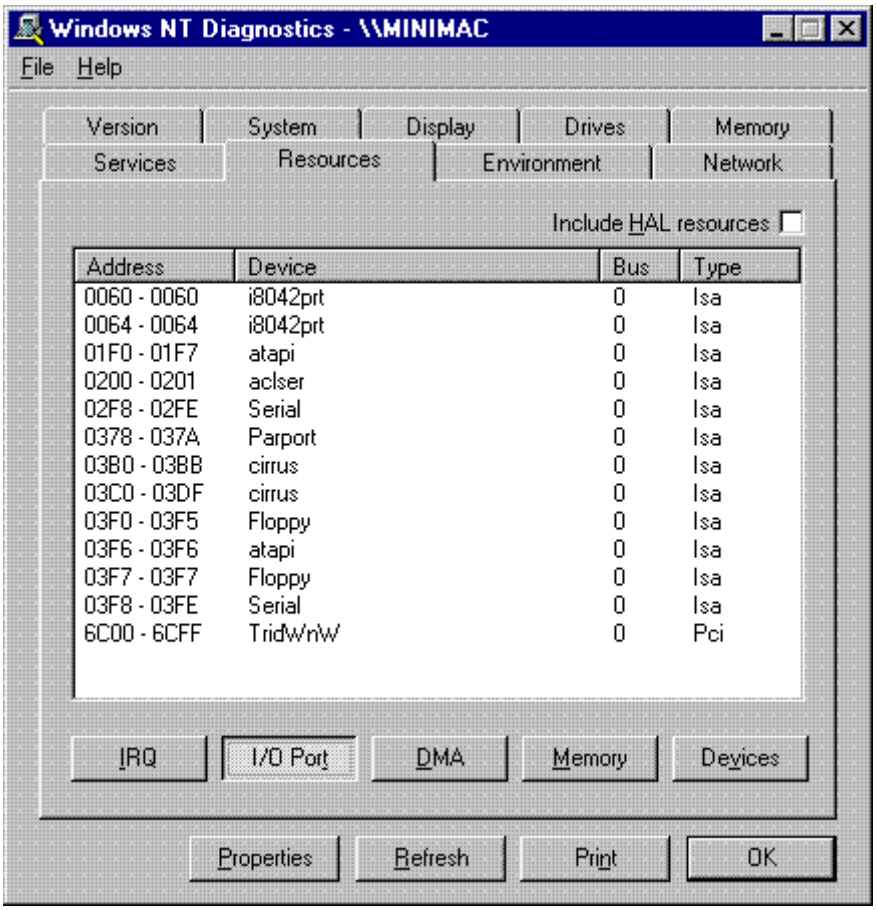
Note: All configuration information on the setup is stored in a file titled: IP CONFIGURATION.TXT.



A.2.3 Windows NT Diagnostics – I/O Ports

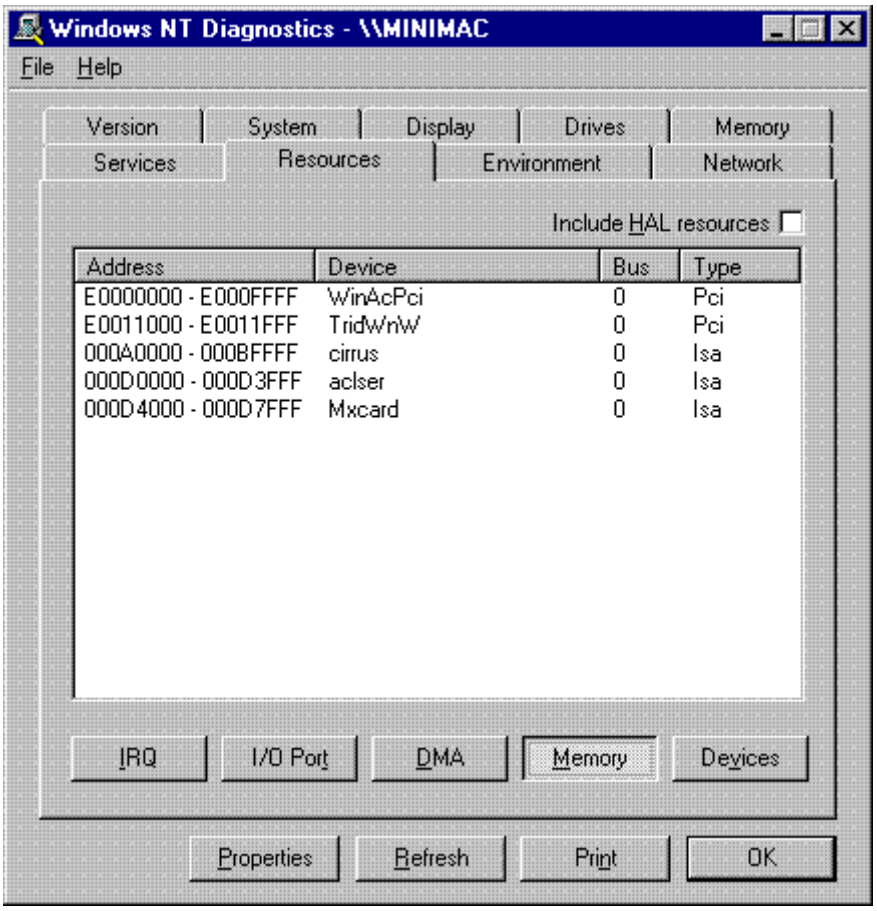
I/O port addressing will be automatic for plug and play devices. Port expander cars will have jumpers, switches, or configuration settings in the setup (refer to Section 3.3). Select an address that is not in use.

Note: These are Windows NT functions. For additional information, refer to the Windows NT manual.



A.2.4 Windows NT Diagnostics – Memory Allocation

Memory allocation also will be set automatically for plug and play devices. Memory for port expander cards must be configured in the setup process (refer to Section 3.3). Select a memory allocation that is not in use.



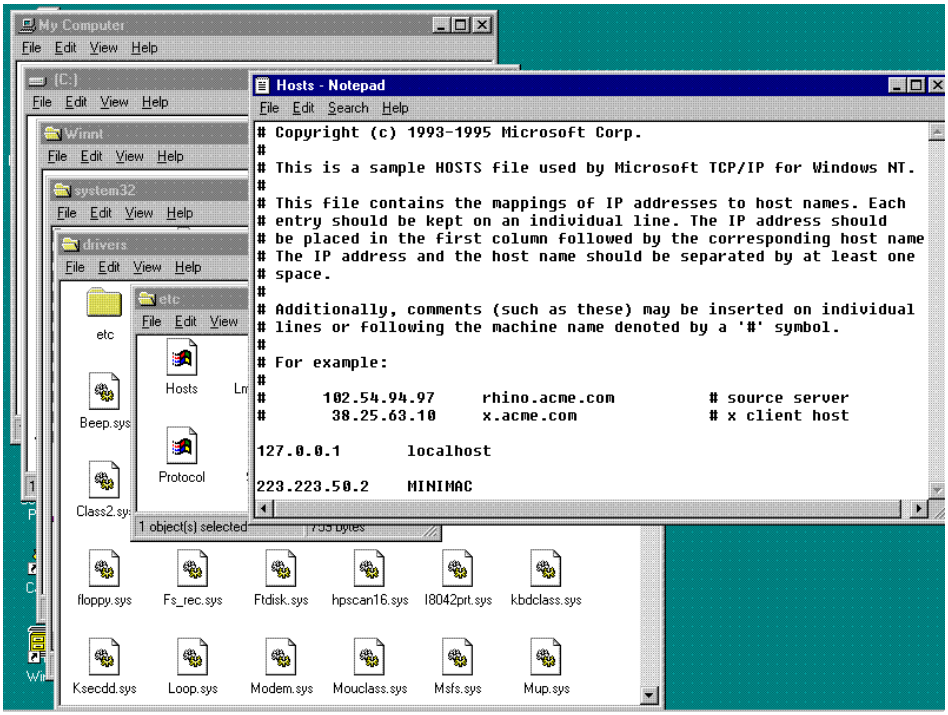
A.2.5 Host File

The HOST File is used by Microsoft™ TCP/IP for windows NT. It contains the mapping of IP addresses to host names. If UINETMAN does not run in the services, it may be necessary to add a new line to the HOST file. The path to the HOST file is:

Path: My Computer\C:\Winnt\system32\drivers\etc

Open the file labeled Hosts with the Notepad Program. Refer to Section A.1.1, Figure A-3, the TCP/IP Address for the computer is located in the IP Address window.

The IP address and computer name should be added to the end of the host file.



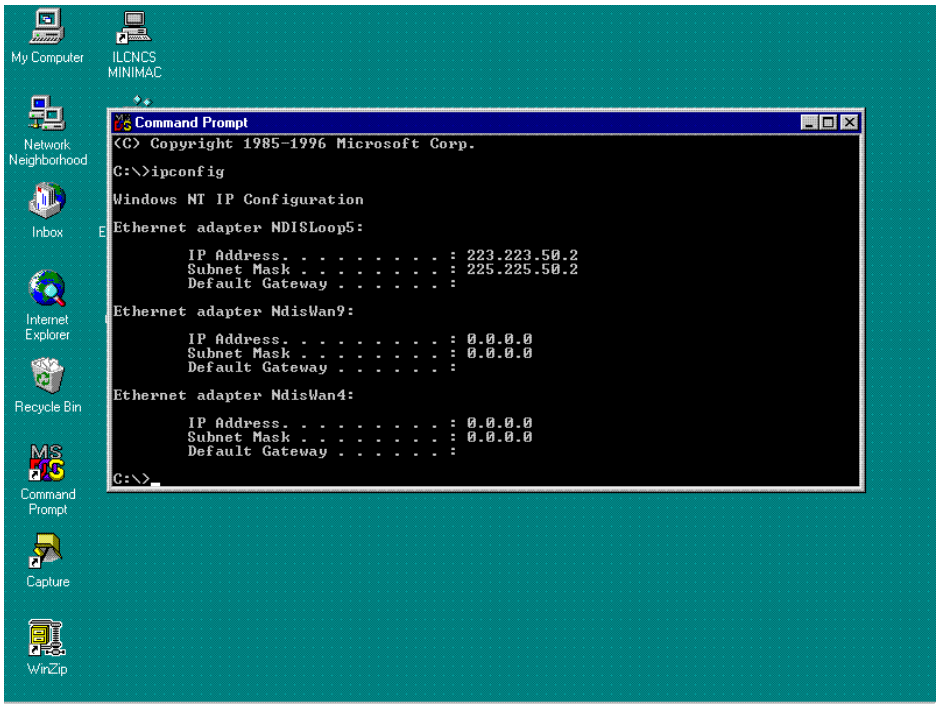
Note: After adding the new line as shown, save the Host File prior to closing.

A.2.6 IP Configuration Command

Alternate Method: To identify the IP address of the computer, use the Windows NT command:

From a DOS prompt window type: ipconfig

The response will be the Windows NT IP Configuration for all Ethernet adapters installed in the computer. The NDISLOOPS adapter is used for the TCP/IP address in our configuration. The IP address (top line) can be typed into the HOST File for mapping to the computer.

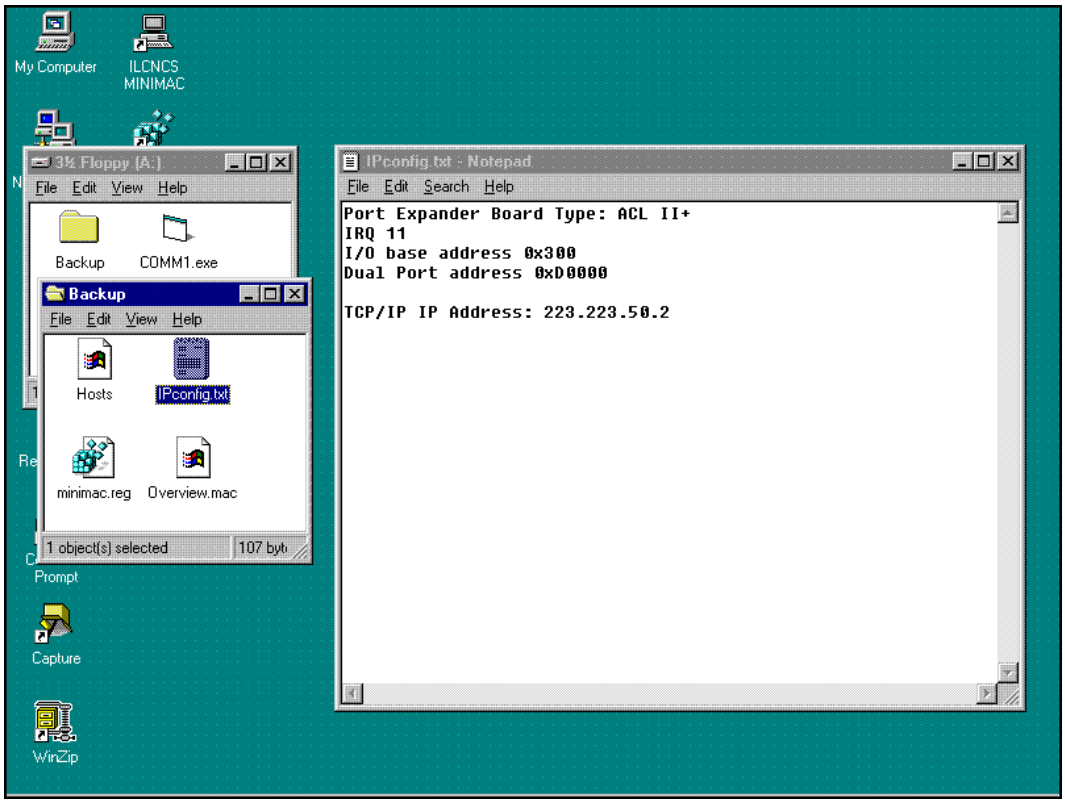


A.2.7 IP Configuration.Txt File

The IP Configuration.Txt file is a very useful tool for installation. The file is supplied on a floppy disk with backup file information. The path is:

My Computer\A\Backup\

Open the file called Ipconfig.Txt



All the configuration information concerning the installed port expander card will be displayed. The jumper and switch setup for the IRQ and base address will be listed.

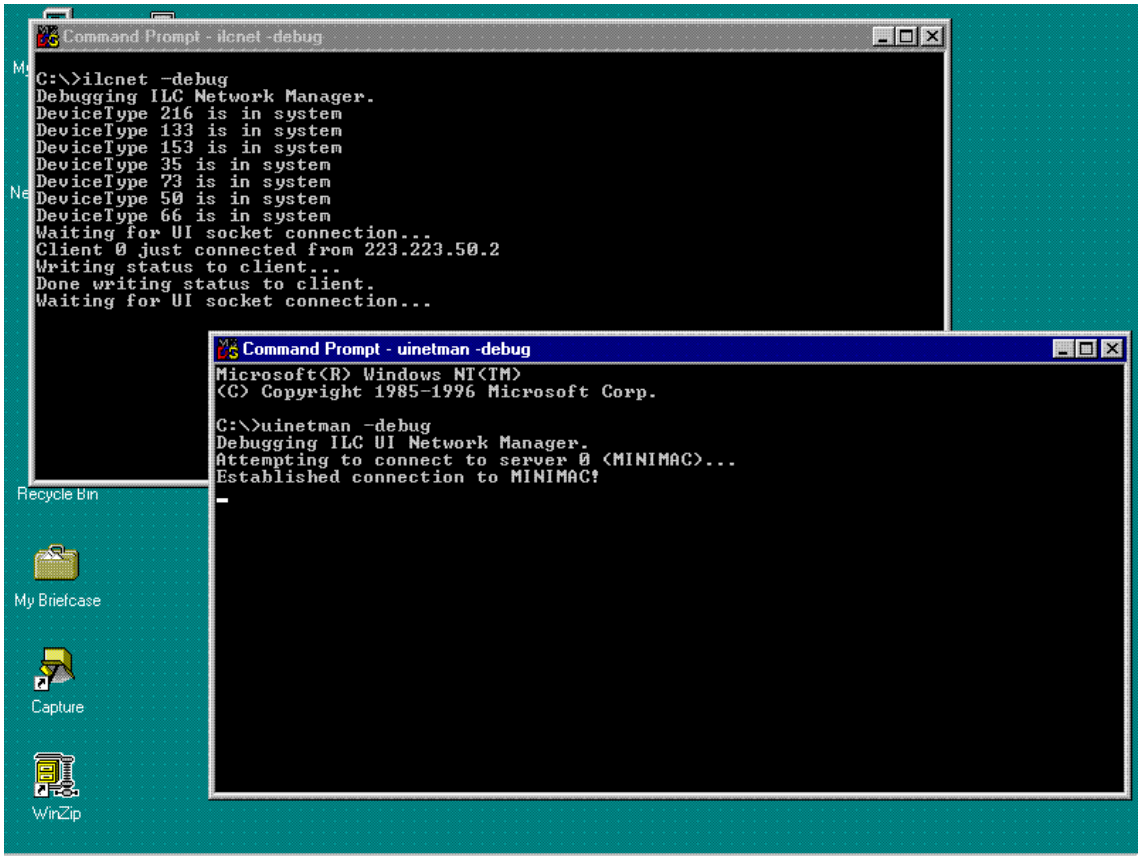
A.3 Debugging the Services

When necessary to troubleshoot the MiniMAC program, use the DEBUG command.

Perform the following:

Command	Response
Open:	CONTROL PANEL
Go to:	SERVICES
Select:	ILC NETWORK MANAGER and STOP SERVICE
Select:	UINETWORK MANAGER and STOP SERVICE
Close:	NETWORK Window
Close:	CONTROL PANEL Window
Open DOS Prompt:	Type: ilcnet -debug
Open DOS Prompt:	Type: UINETMAN -debug
Start	MiniMAC Program

When an error occurs, it will be displayed in the debug window.



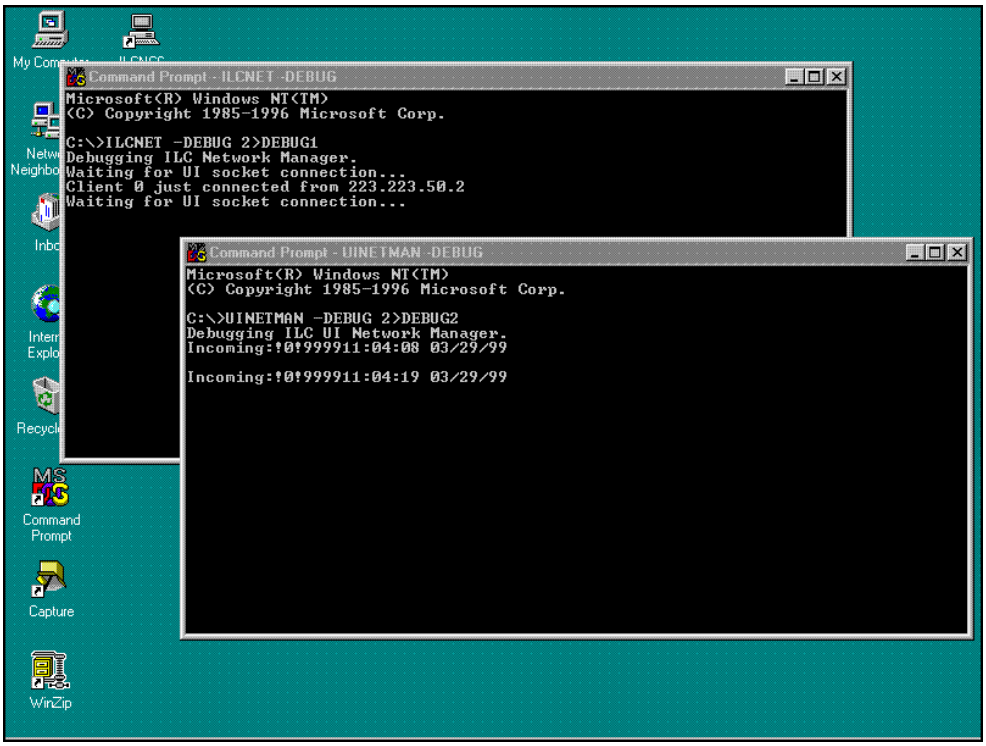
A.3.1 Saving Debug to a File

For customer support to evaluate the problem, the debug information must be written to a file. This makes it possible to e-mail the data to Adaptive Broadband.

Alternate Method: Type the following command from the Command Prompt:

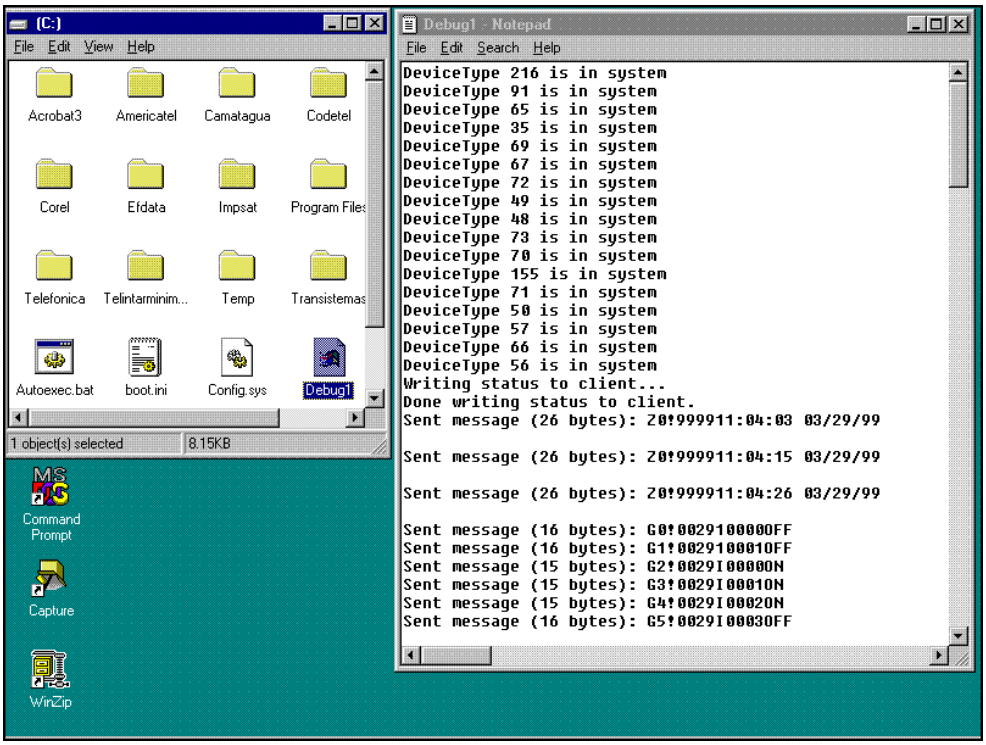
Ilcnet –Debug 2>debug1

Debug1 will be the name of the file that debug will store information.



When a failure occurs, close all tasks, including the Debug Command using the Task Manager. Open the Debug1 file with Notepad.

This information can be used for troubleshooting the system.



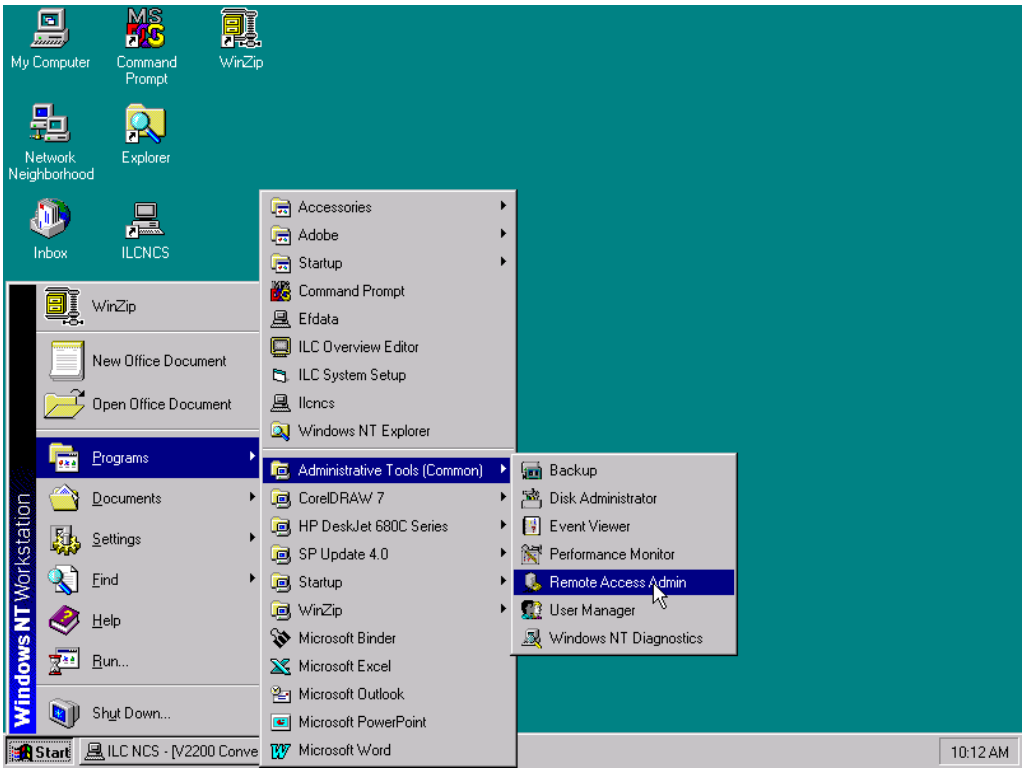
A.4 Remote Access Administrator

Note: When Adaptive Broadband Customer Support has determined that it is necessary for Remote Dial In Access for troubleshooting purposes, the Remote Access Server must be started.

This feature can only be used if a modem is installed on the MiniMAC CPU.

A.4.1 Open Remote Access Administrator

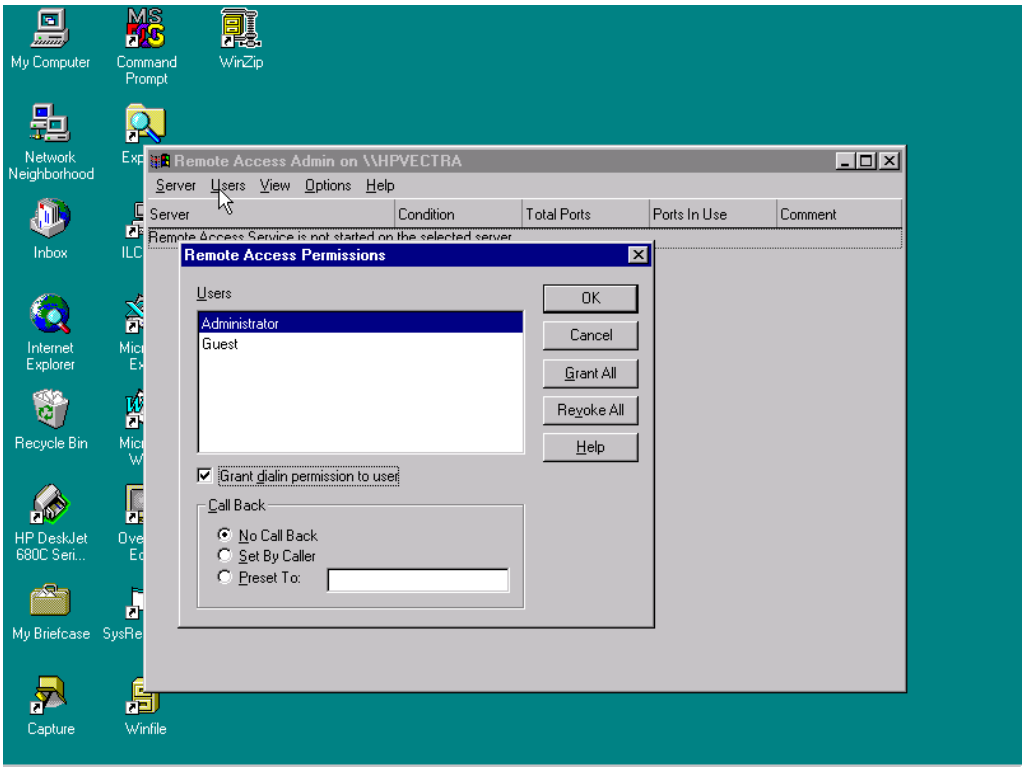
Path: Start\Programs\Administrative Tools\Remote Access Admin



A.4.2 Grant User Permission

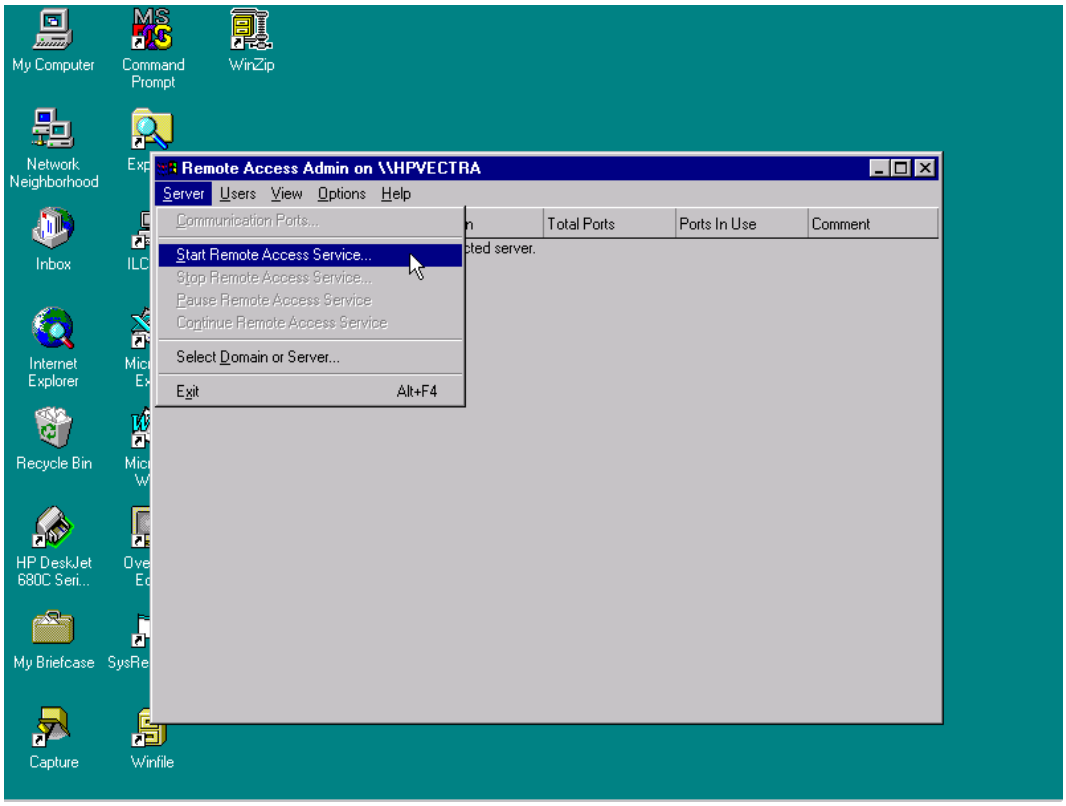
Observe path grant user permission as follows:

Command	Response
Click on	Start\Programs
Click on	ADMINISTRATIVE TOOLS
Click on	REMOTE ACCESS ADMIN
Click on	USERS
Click on	PERMISSIONS
Select	ADMINISTRATOR
Click on	GRANT DIALIN PERMISSION TO USER
Click on	GRANT ALL
Click on	YES



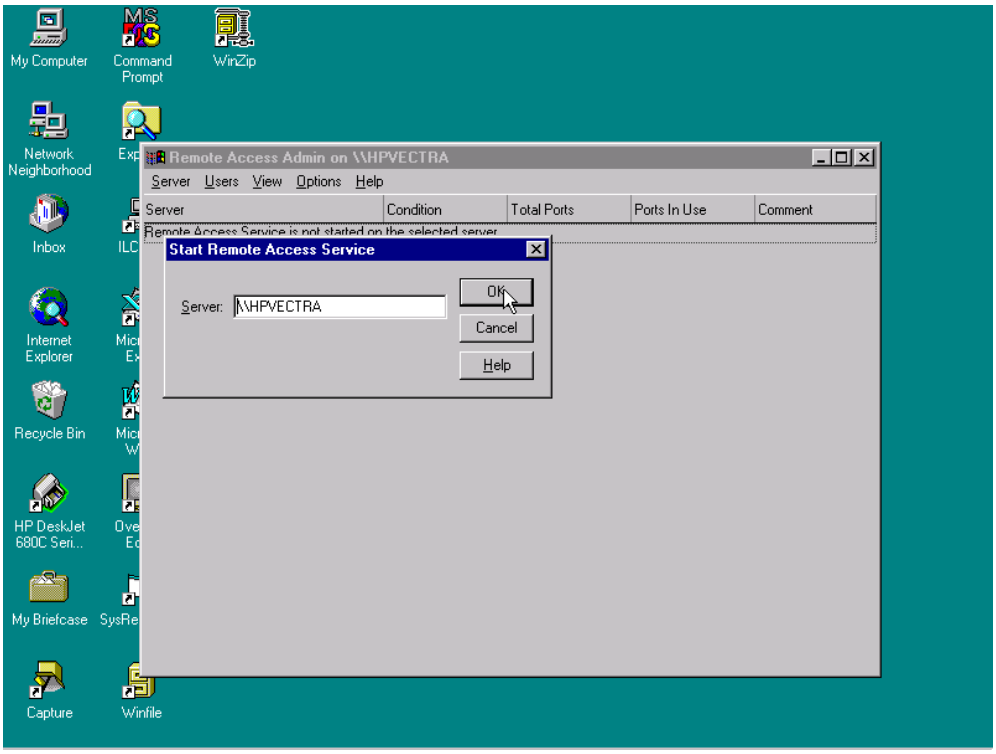
A.4.3 Starting Remote Access Service

To start the Remote Access Service, select Server and click on Start Remote Access Service.



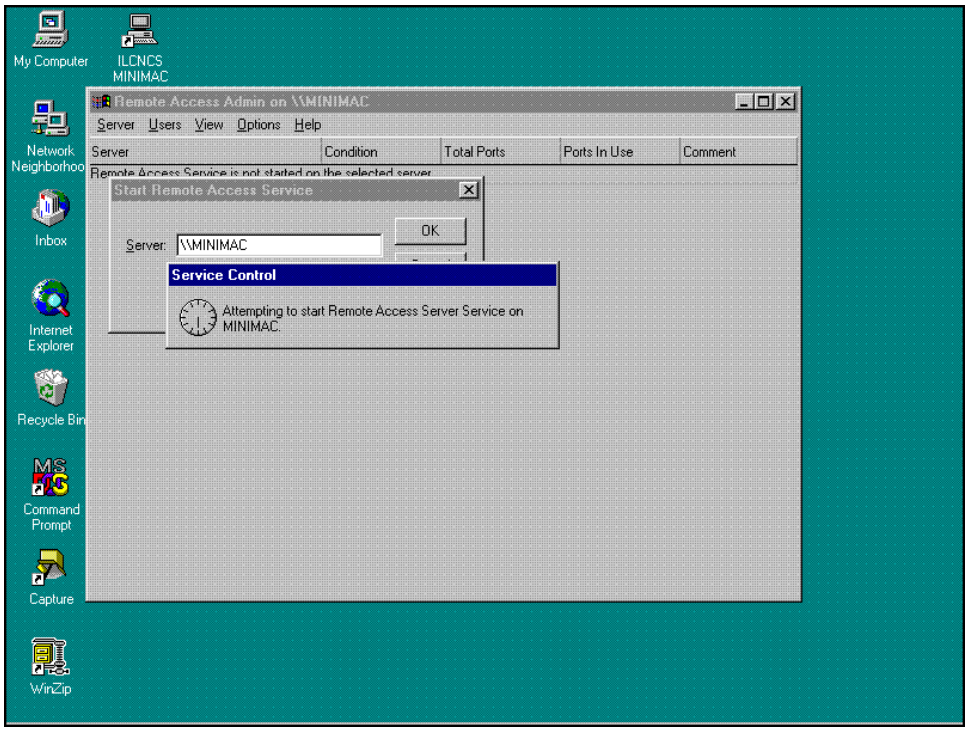
A.4.4 Verfy Computer System Name

Verify computer name, if satisfactory, click on: OK



A.4.5 Attempt to Start Remote Access Administrator

The Service Control window will be displayed after computer name has been verified.

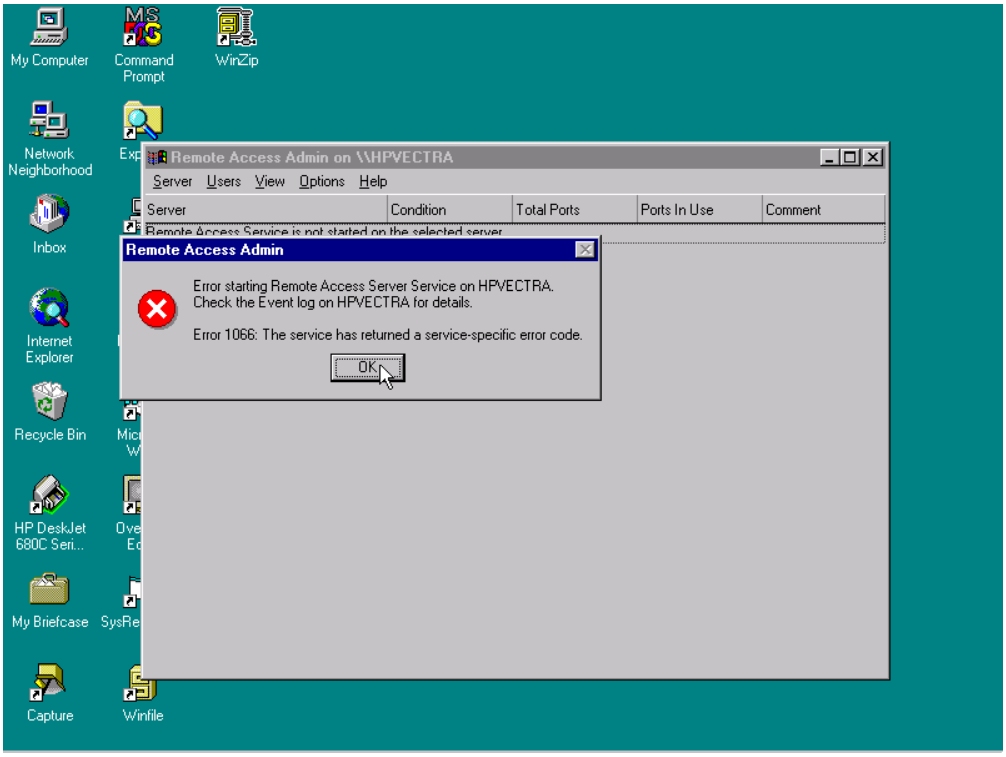


When Remote Access Server is operating properly the condition will be Running.

Server	Condition	Total Ports	Ports In Use	Comment
MINIMAC	Running	1	0	

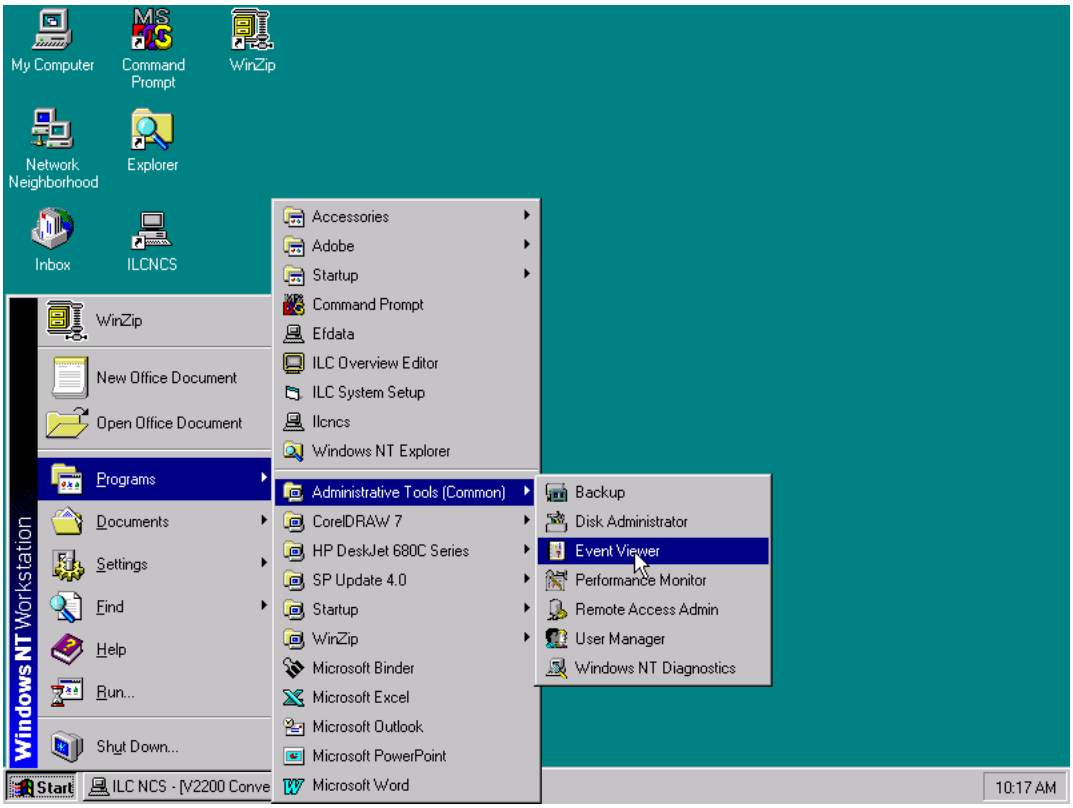
A.4.6 Dealing with Errors

If the Remote Access Services cannot start, there will be an error message displayed. To determine the cause, check the EVENT Log on the computer for details.



A.4.7 Path to Event Viewer

Path: Start\Administrative Tools\Event Viewer

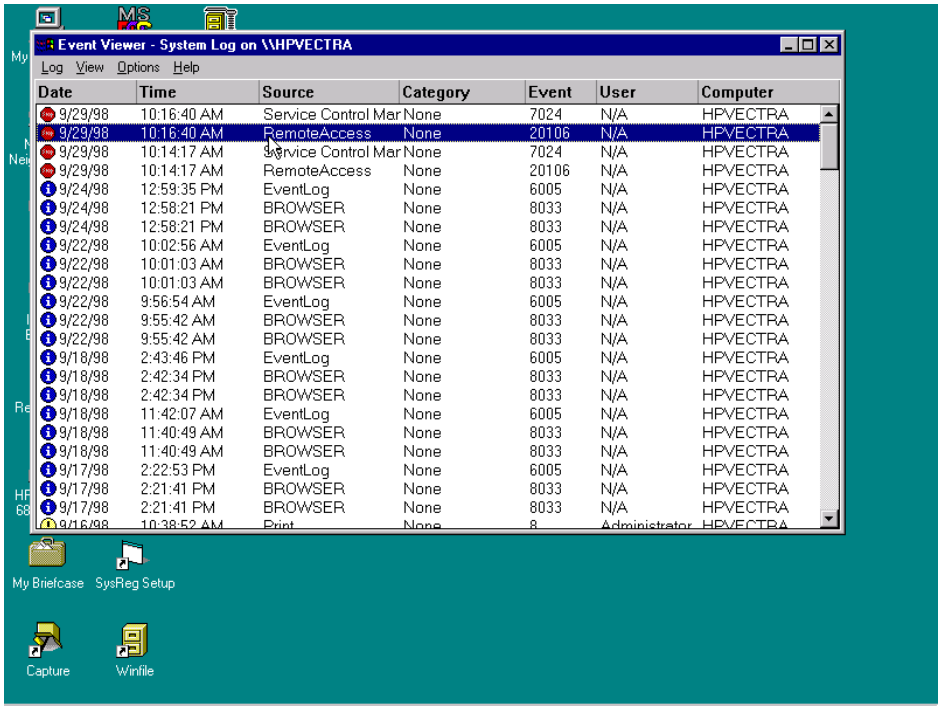


A.4.8 View the System Log

Event Viewer will display all events that occurred by date and time, source, category, event number, user, and the computer name.

Proper operation will display a BLUE ICON on the left. Errors or failures will display a RED ICON to the left of the event.

The log can display system information or application information. The currently displayed log is noted in the header of the EVENT VIEWER window.

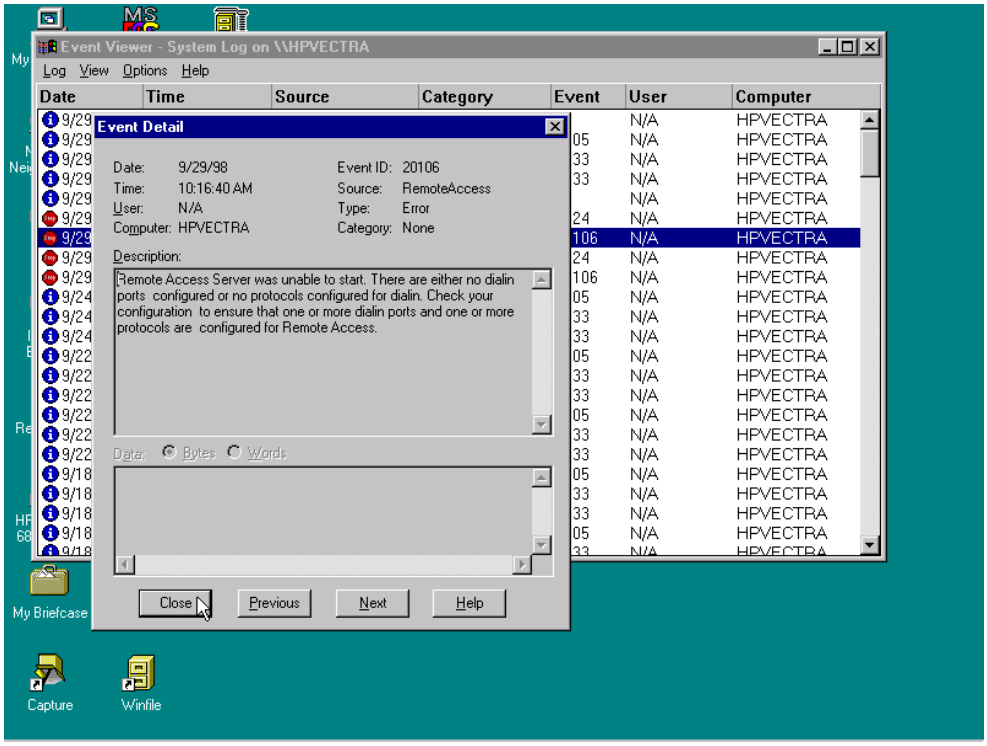


Find the most current Remote Access Source that has an error and highlight.

A.4.8.1 View Event Detail Information

Highlight the event that will be read and double-click.

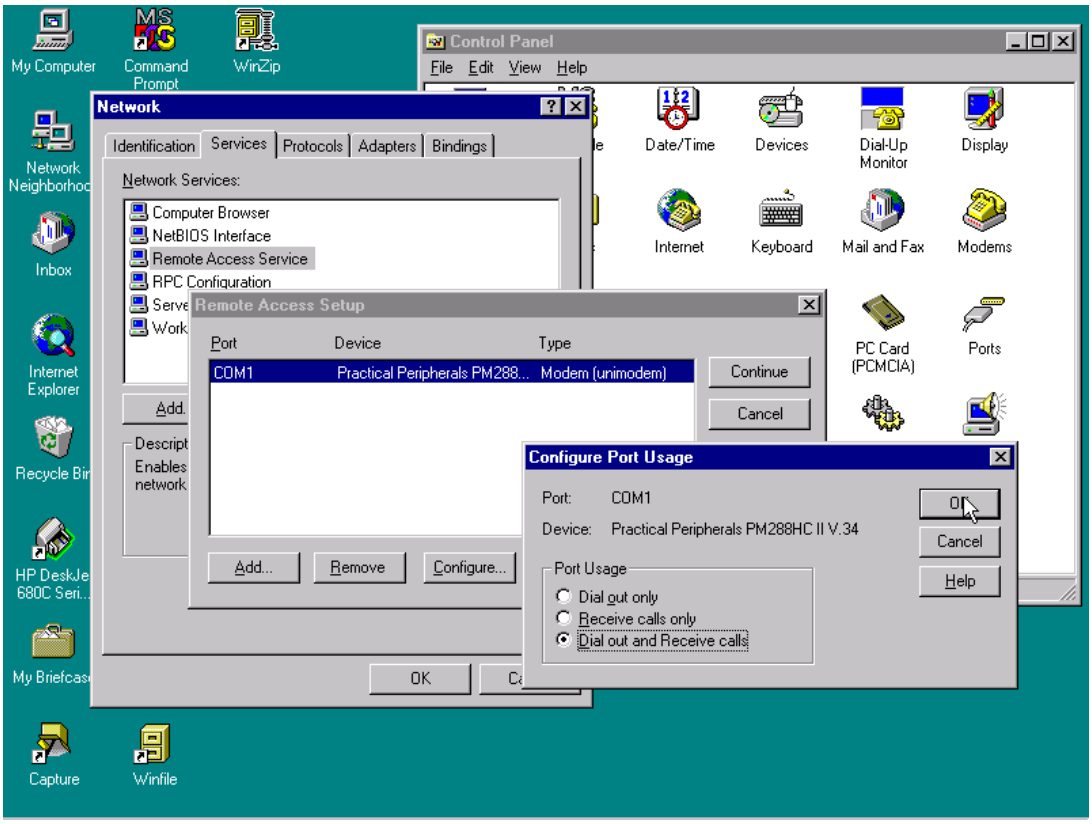
The event details will be displayed in the EVENT DETAIL window. This message displays that the RAS has not been configured.



Close the Event Detail window and Event Viewer.

A.4.9 Setting Up the Dial in Port Usage

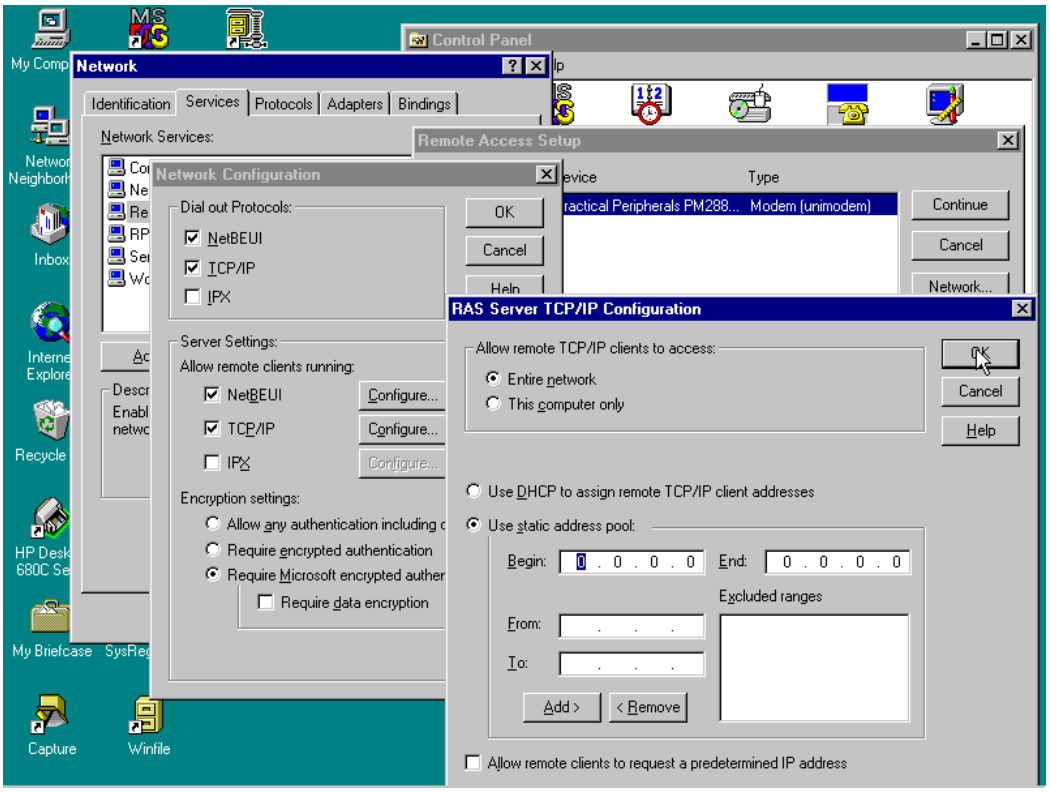
Path: Start\Settings\Control Panel\Network\Services\Remote Acccess Service\Properties\Configure.



From the Configure Port Usage window select Dial Out and Receive Calls. Click on; OK.

A.4.10 Checking the RAS Server TCP/IP Address

From the Remote Access Setup window, click on: Network. From the Network Configuration window, verify TCP/IP is checked in both locations and click on Configure TCP/IP.



Type the TCP/IP address that was determined in the protocol setup. This computer's TCP/IP address is 223:223.50.2. The end address is 225.225.50.2.

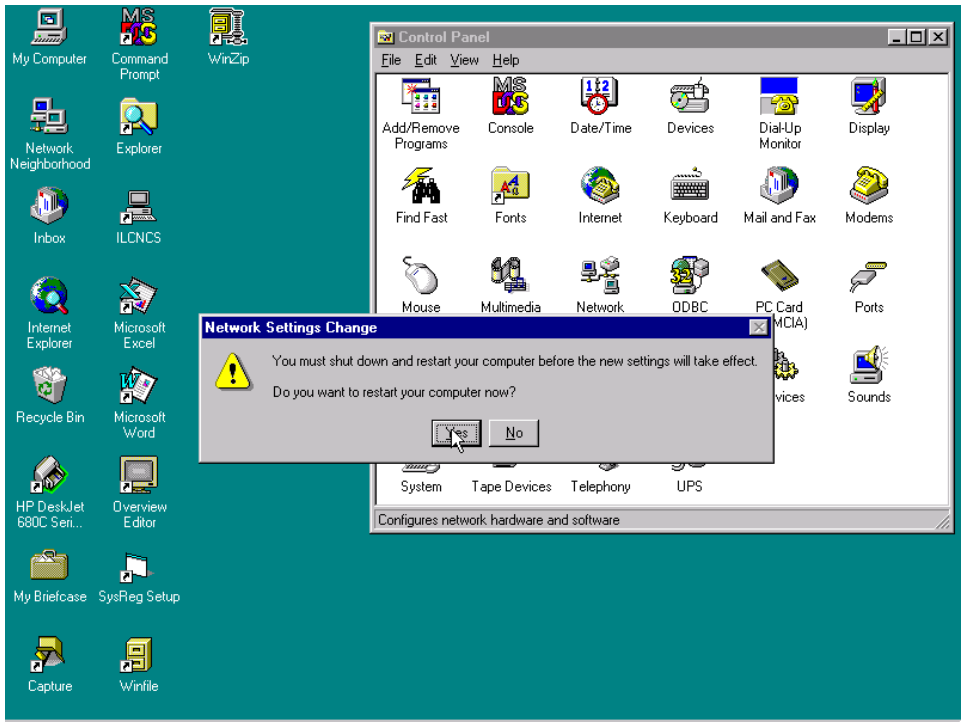
After typing in the correct address click on OK. In the Network Configuration window Click on: OK.

From the Remote Access Setup window, click on: Continue.

From the Network window, Click on: OK.

A.4.11 Restarting the Computer

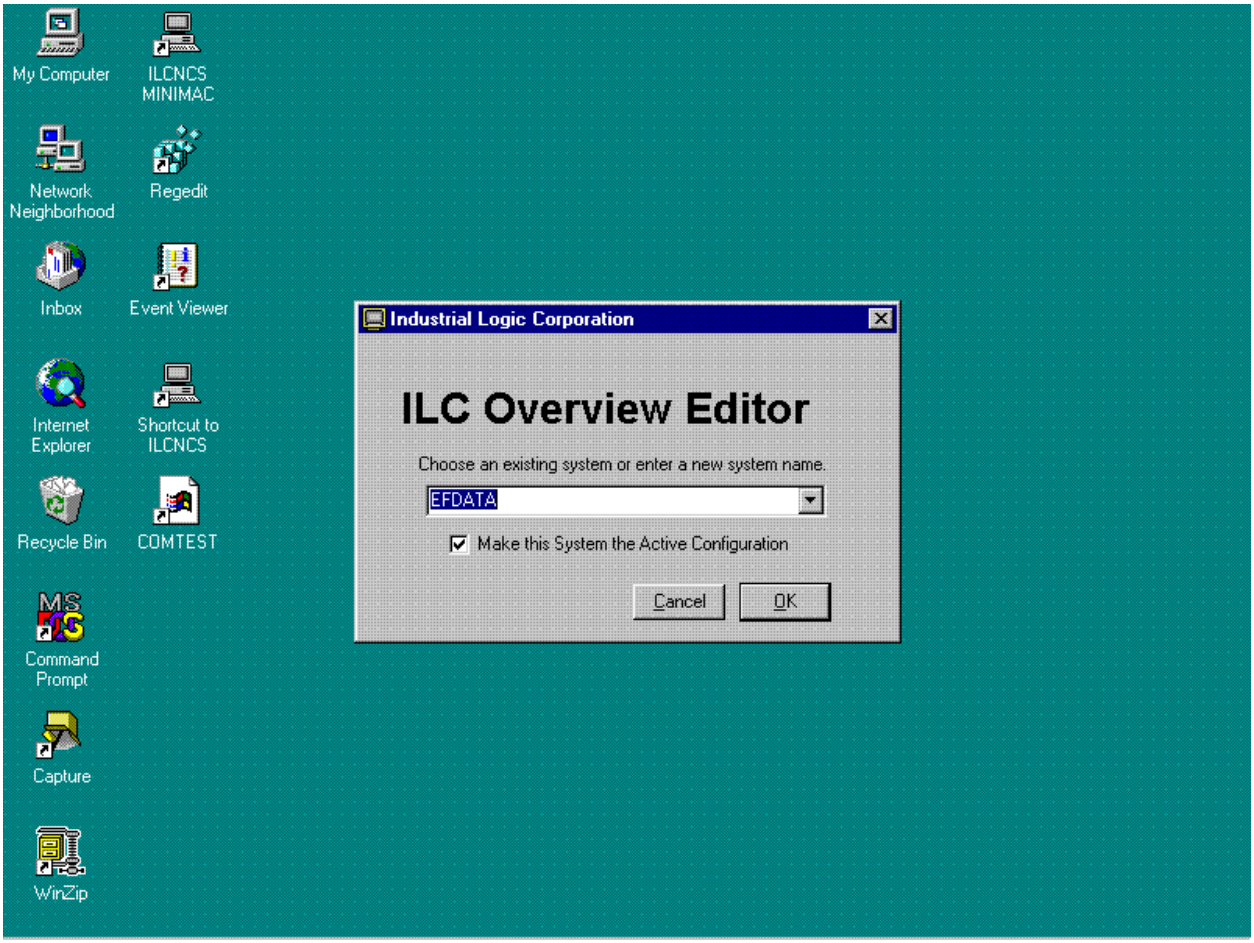
The computer will save the network settings to the Registry Editor. Shut down the computer before the settings can take effect. Click on Yes to restart the computer.



7.1 ILC Overview Editor Program

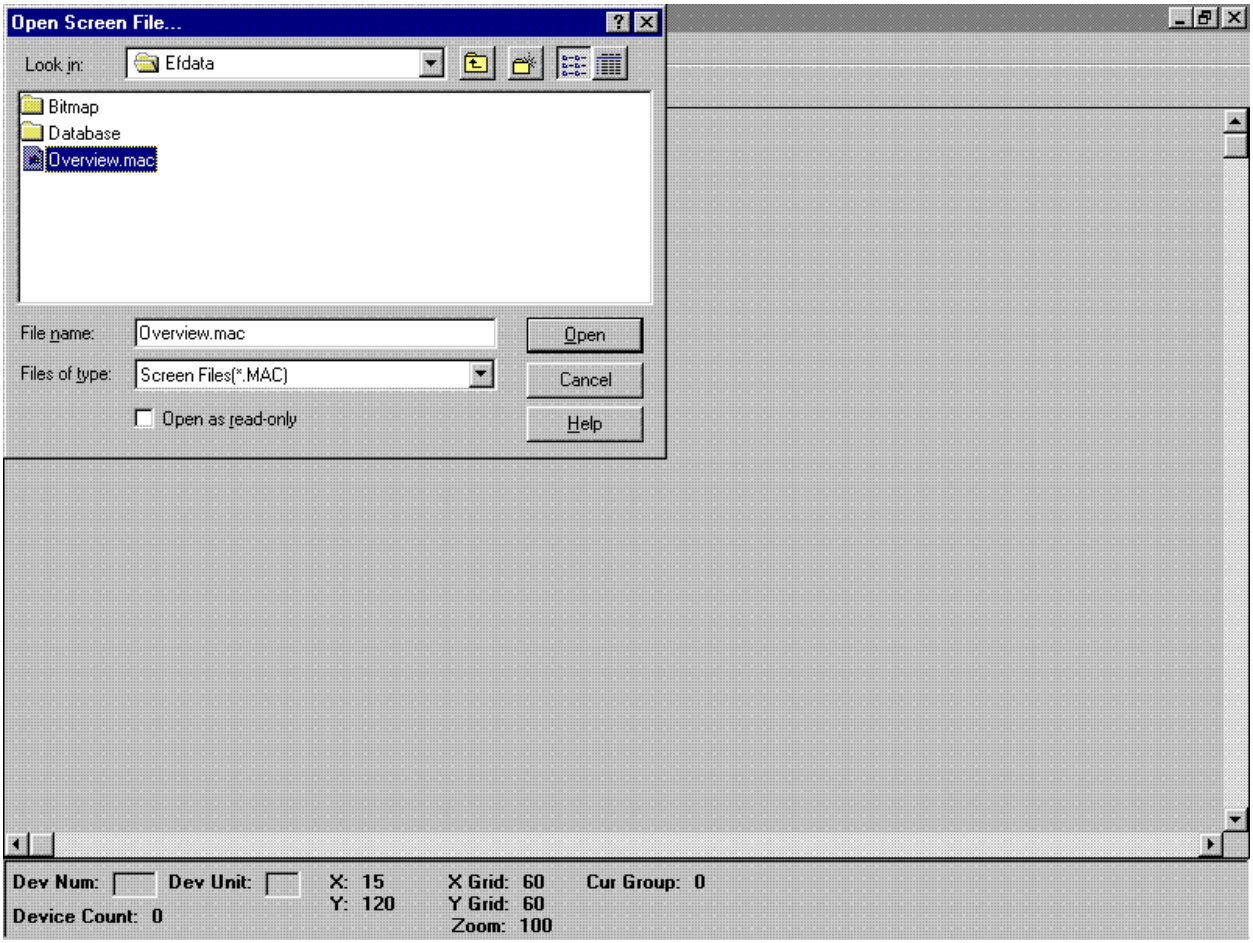
Path: Start\Programs\ILC Overview Editor
Select Adaptive Broadband or current SITE user
Click on: OK

Note: When there are more than one-configuration choices in the Drop Down Menu;
Click on: Make This the Active Configuration
This will update the Registry Editor to always RUN the selected configuration.



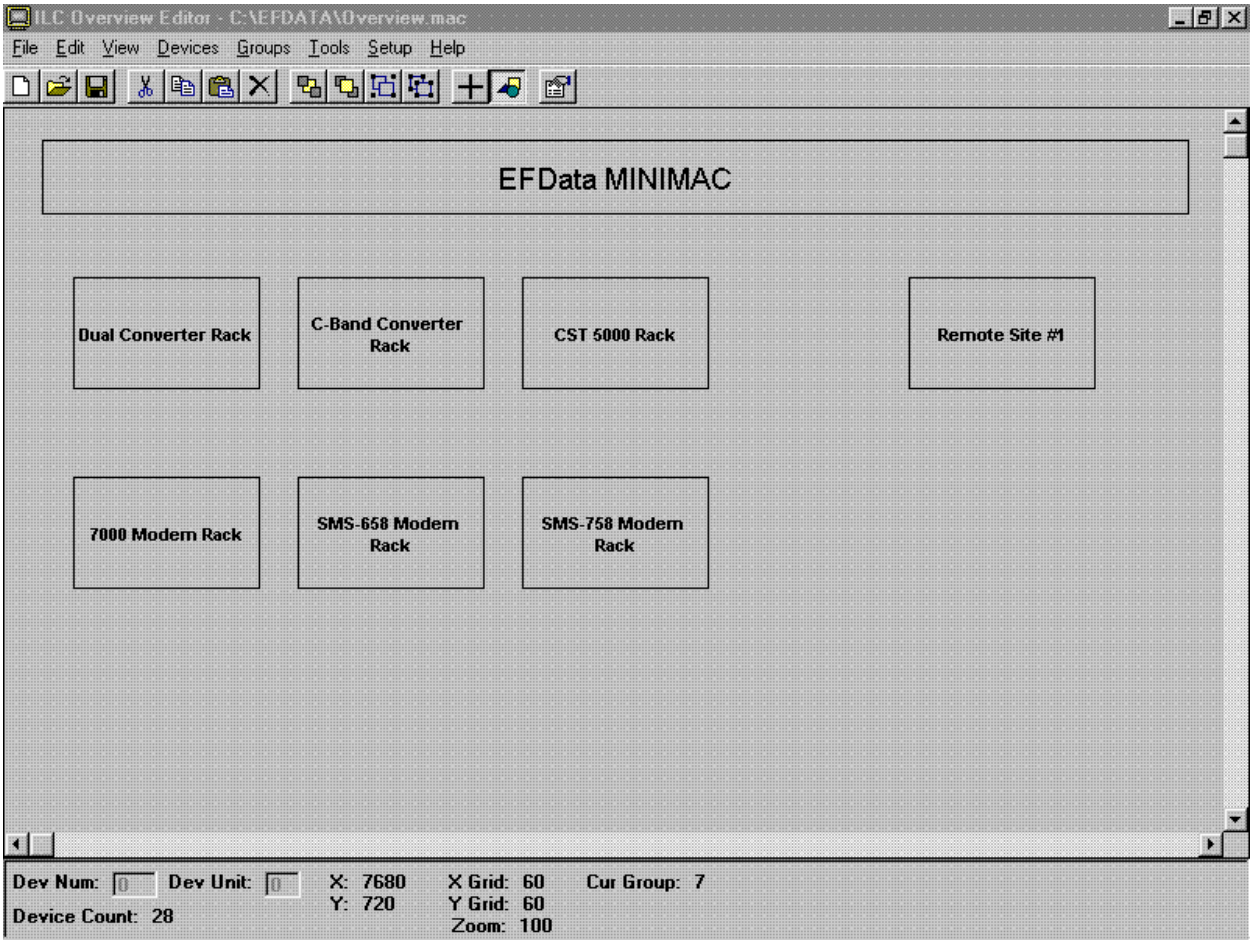
7.1.1 Opening the Overview.Mac File

Select Overview.Mac
Click on: OPEN



7.1.2 Viewing the Overview Screen

The current Overview Screen will be displayed.

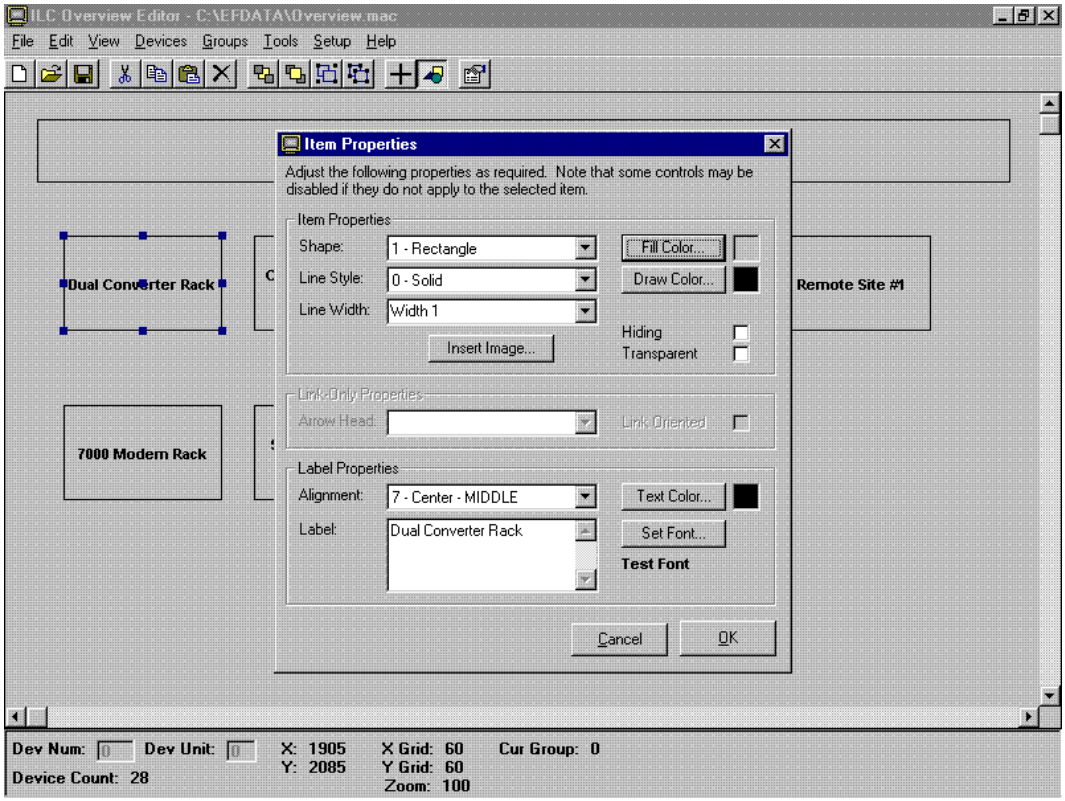


7.2 Editing Item Properties

Double-click a specific item or group to be edited. The item properties window will appear. From this window the user can change:

- Fill Color
- Draw Color
- Insert an Image into the box
- Change the Label Properties, including:
  - Color
  - Font
  - Alignment of the Label

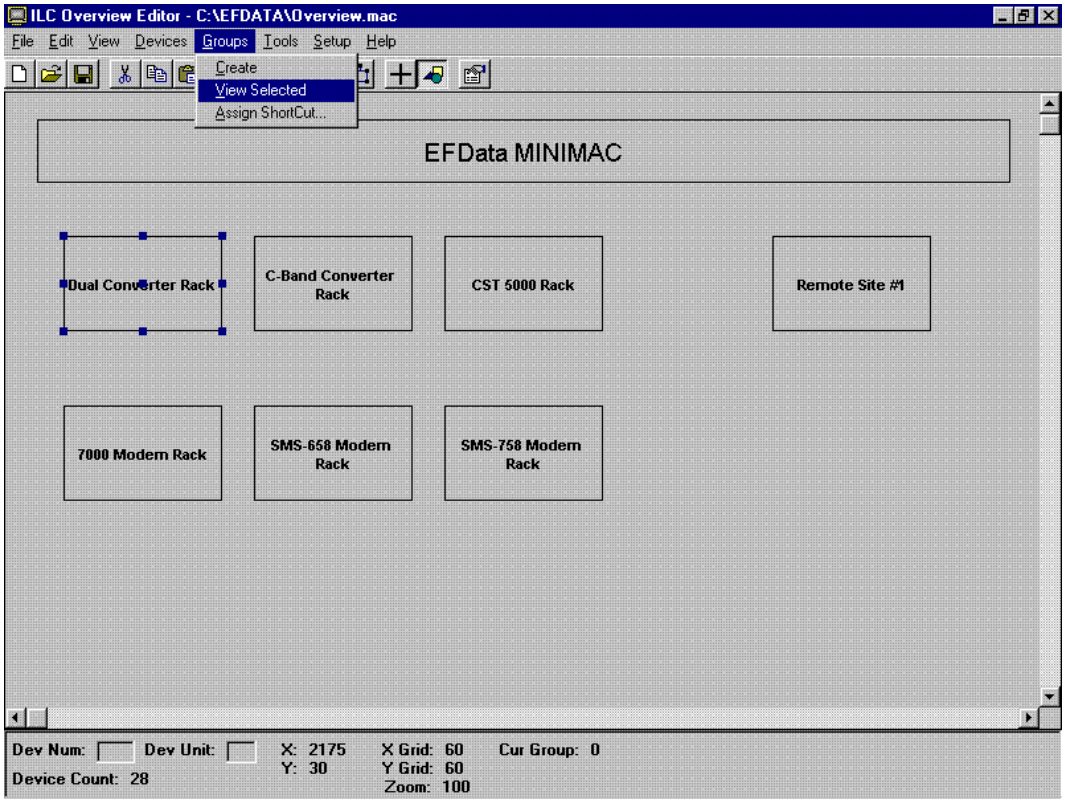
When completed, click on OK.



7.3 Viewing

7.3.1 Viewing Selected Groups

Click on: The desired group to be viewed
Go to: GROUPS (located in the pull-down menu)
Select: View Selected

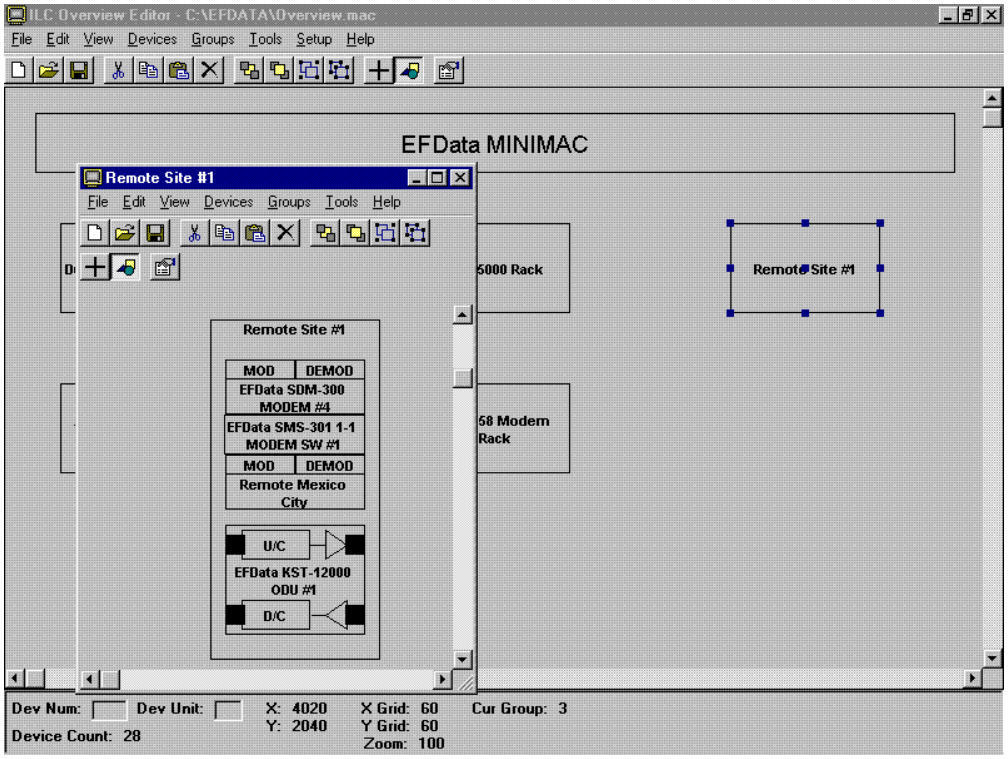


7.3.2 Viewing Remote Site

To view the equipment at the remote site, perform the following:

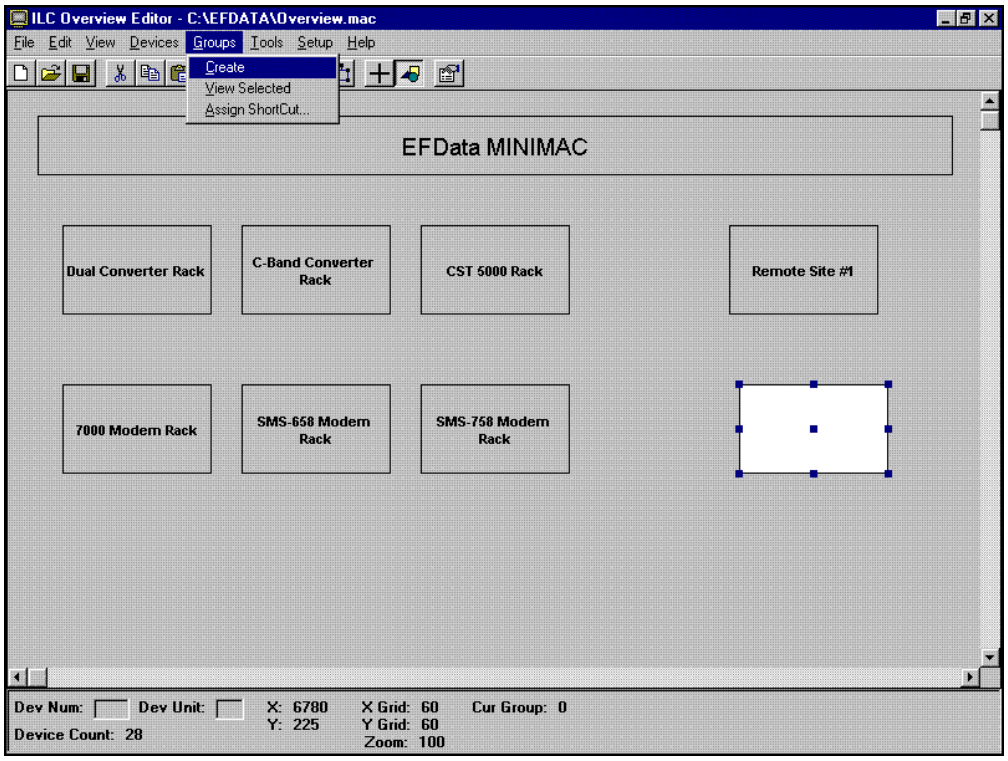
Command	Response
Click on	REMOTE SITE #1 GROUP
Go to	GROUPS
Select	VIEW SELECTED

The REMOTE SITE #1 Group Window will appear on the screen.



7.3.3 Creating a New Group

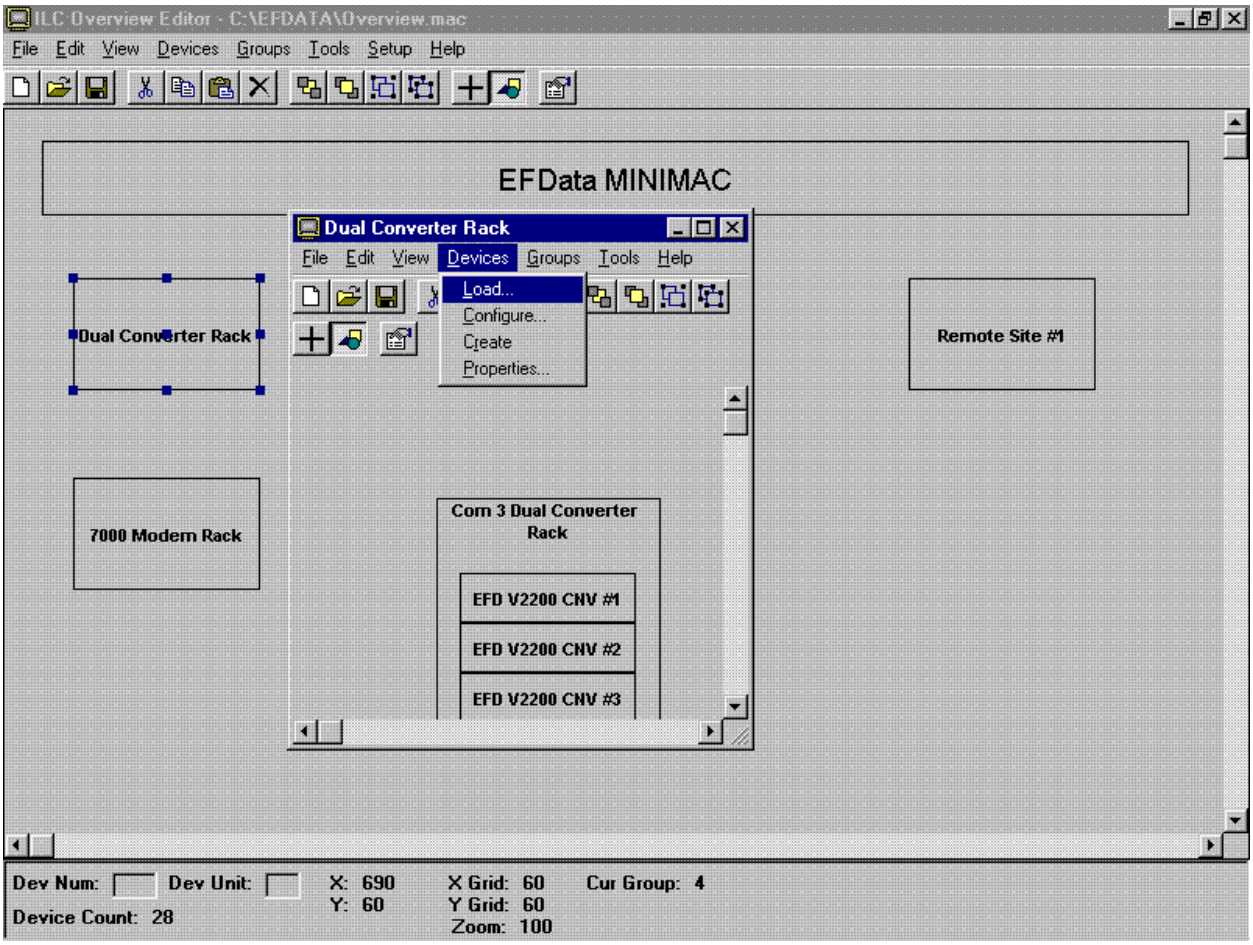
If new REMOTE SITES or NEW GROUPS need to be added to the MiniMAC System, the user has that ability. To create a NEW GROUP, use the pointing tool to draw a new box as shown in white. Ensure the object is highlighted, go to GROUPS and click on CREATE. The new group will be opened and the user can load devices.



7.4 Loading New Devices

To load new devices to a group, go to the drop-down menu in the GROUP window and perform the following:

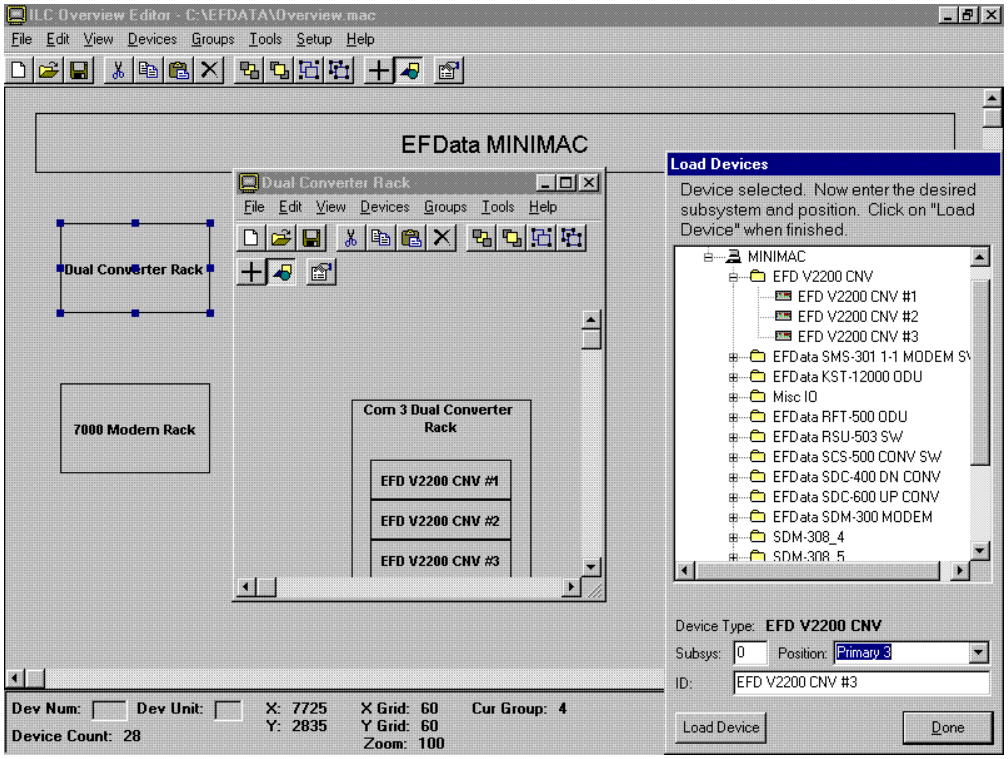
Command	Response
Select	DEVICES
Click on	LOAD



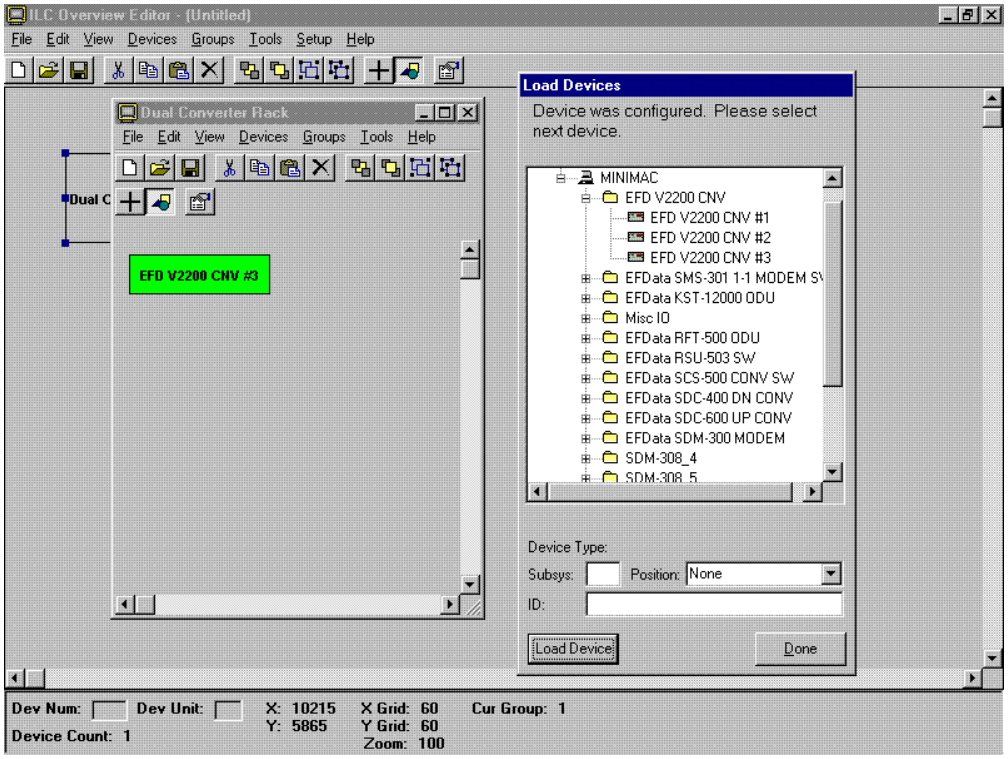
7.4.1 Selecting and Configuring New Devices

From the LOAD DEVICES window, open the MiniMAC folder to reveal the available devices. To select and configure a new device, perform the following:

Command	Response
Select	DEVICE TO BE ADDED
Select	POSITION
Click on	LOAD DEVICE

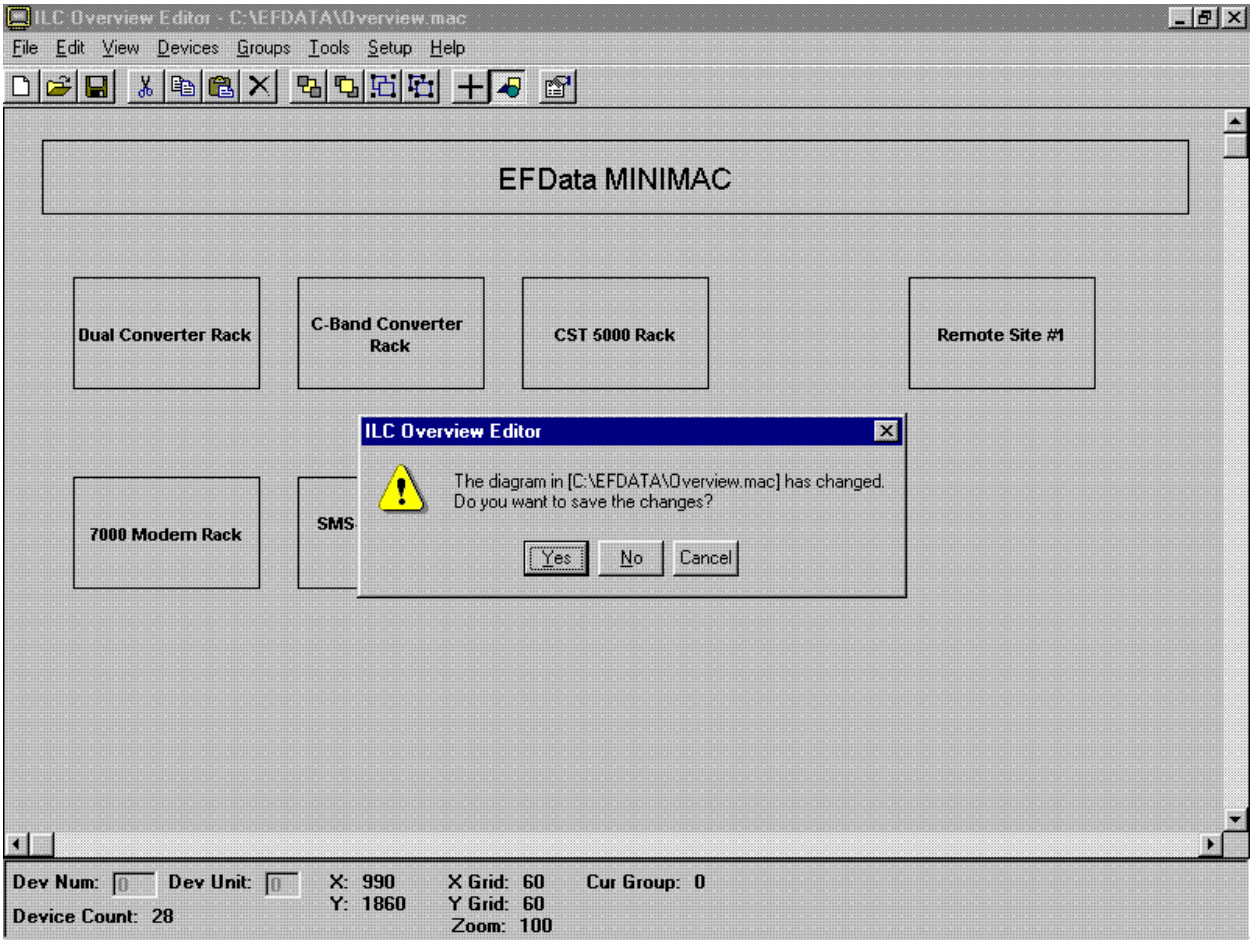


Note: The device will appear in the selected group. Place device in the proper position. When all devices have been loaded, click on: DONE in the LOAD DEVICES window.



7.5 Saving Changes to the Overview.Mac File

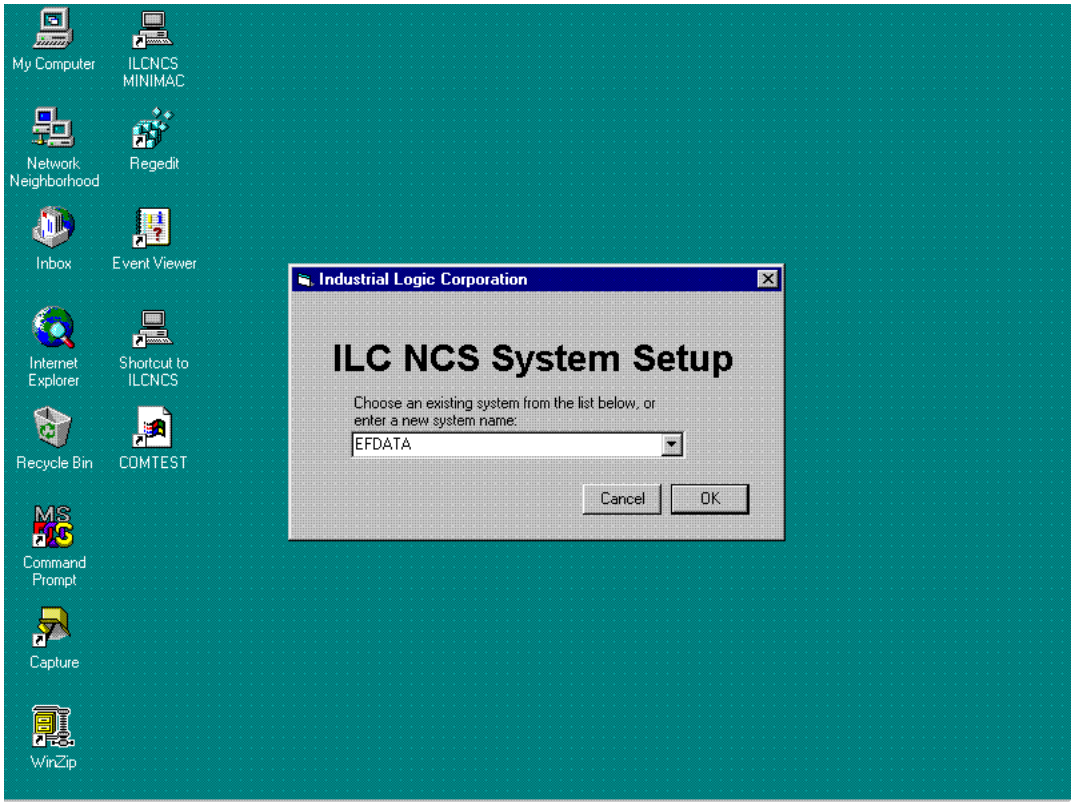
After all devices have been selected;
Save: Overview.Mac file
Restart the computer.



6.1 System Setup Program

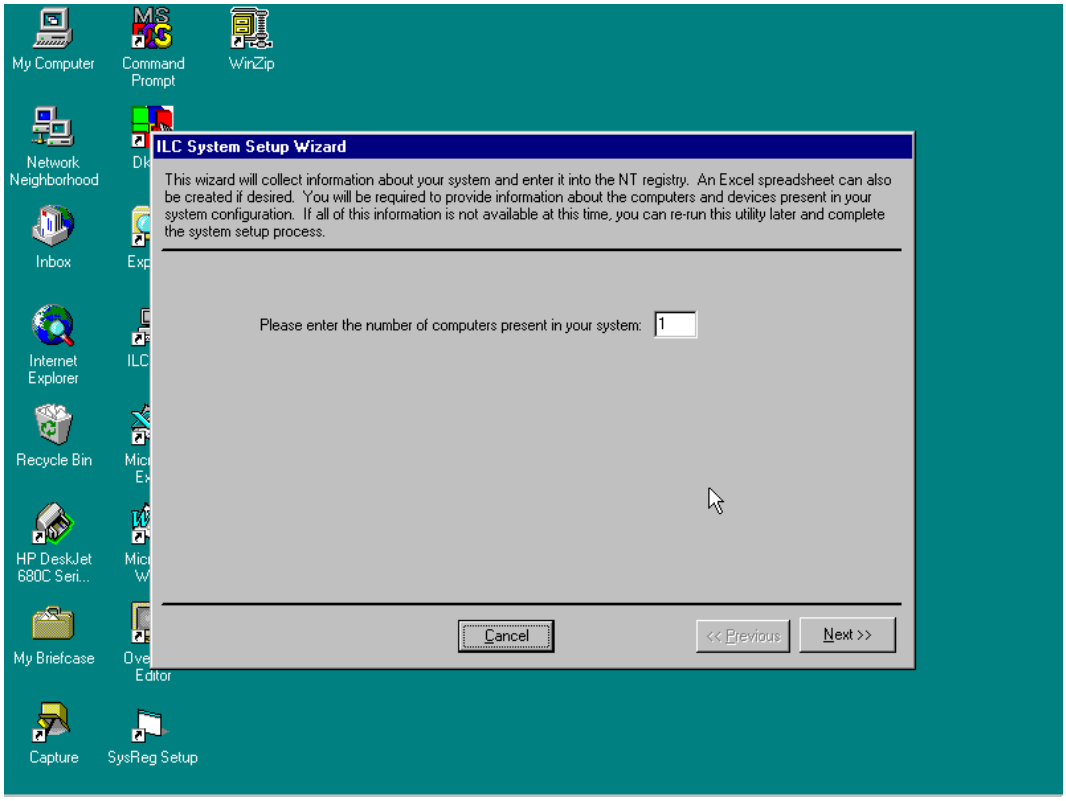
Note: Prior to running System Setup, close the MiniMAC Program.

Path: Start\Programs\ILC System Setup
Select EFData or current SITE name; Click on OK.



6.2 Selecting Number of Computers

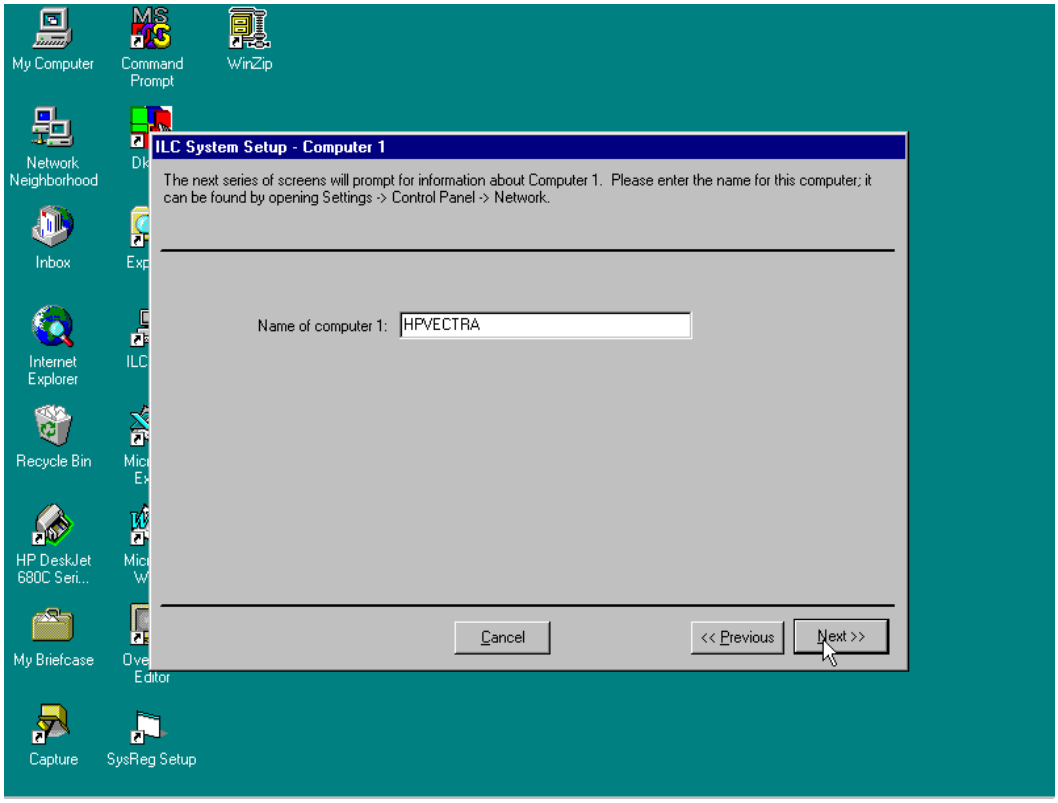
Note: Most systems only have one computer. If a system has more than one computer, then enter the number of computers and click NEXT.



6.2.1 Entering the Computer Name

Notes:

1. The name of the customer computer can be located at: Start\Programs\Administrative Tools\Windows NT Diagnostics
2. The name of the computer will be across the banner at the top.
3. Type the computer name and click NEXT.

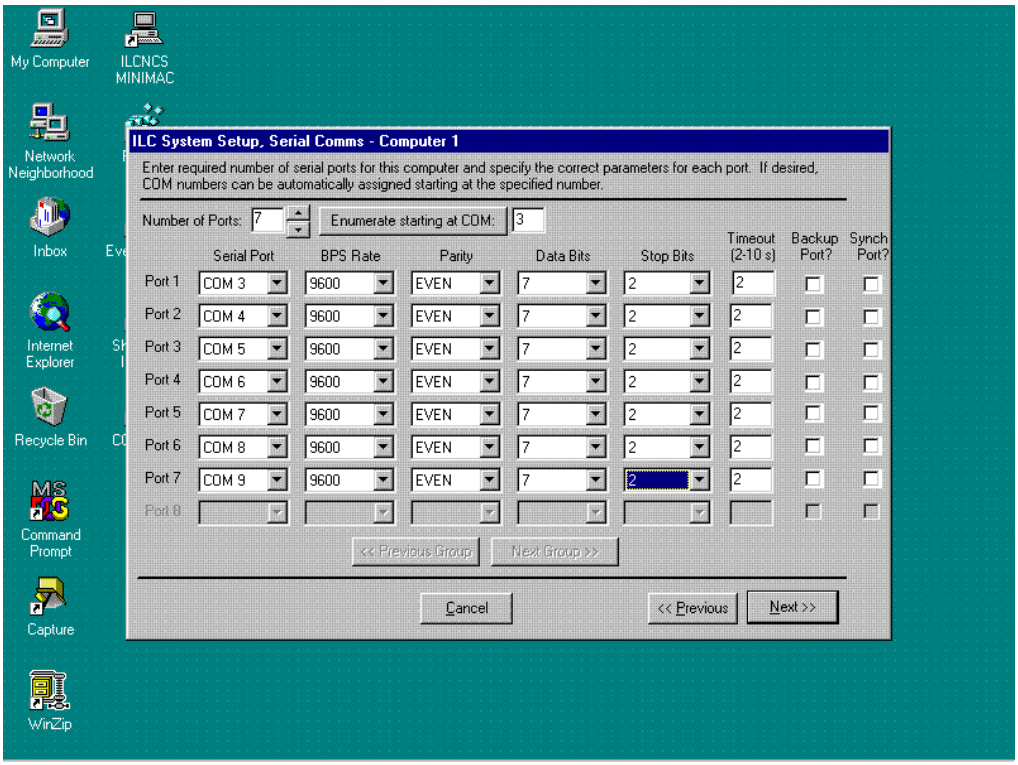


6.3 Setting Up the COMM Ports

Select number of COMM Ports, enumerate starting at COMM 3.
Select the following for each COMM port:

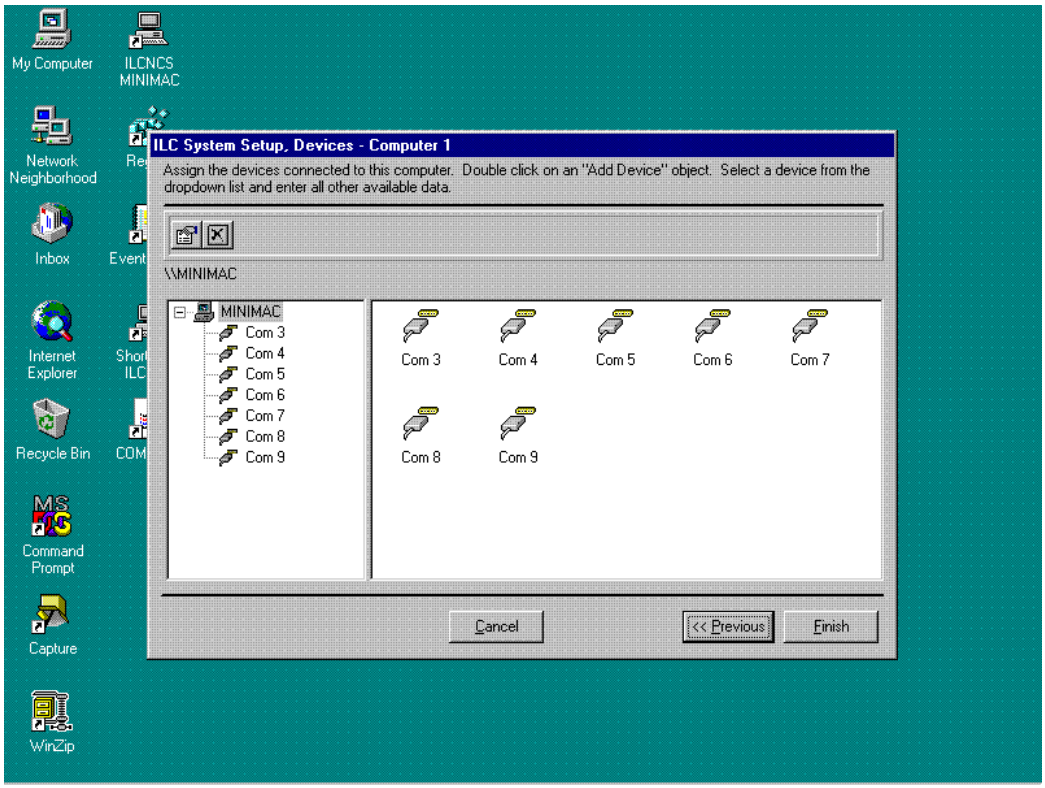
- Baud Rate
- Parity
- Data Bit/s
- Stop Bit/s

Click on: NEXT.



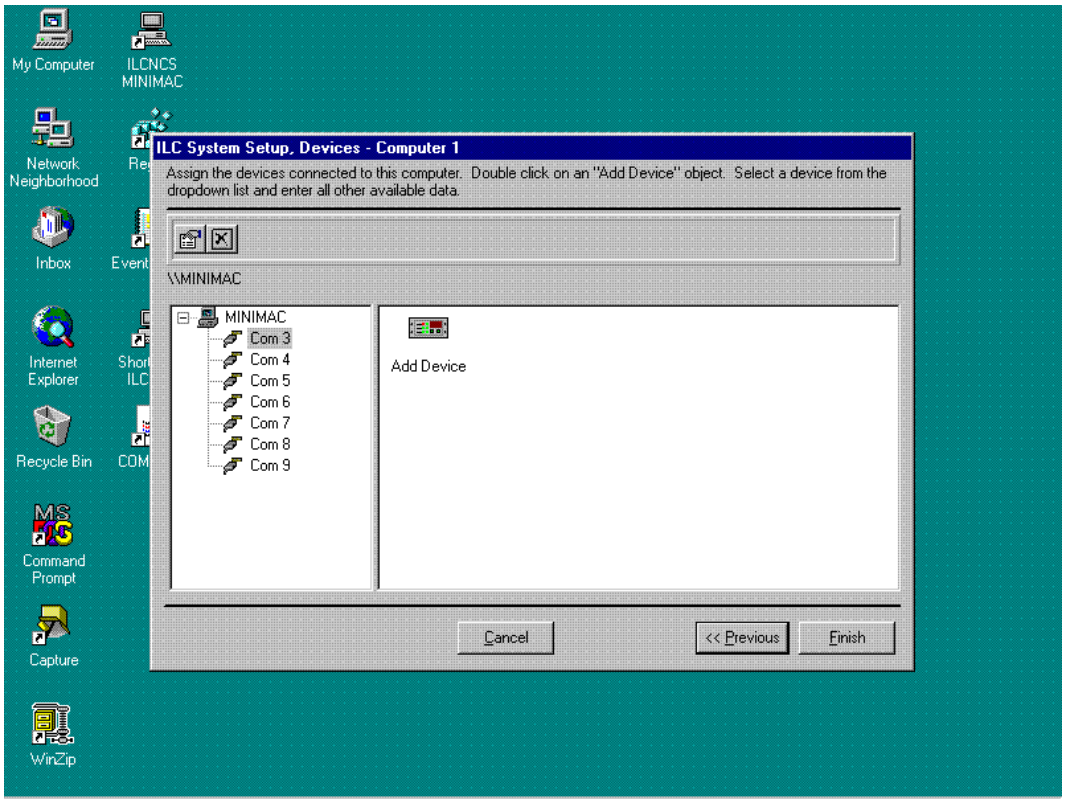
6.4 Selecting COMM Ports for Device Setup

Select a COMM port for adding devices.



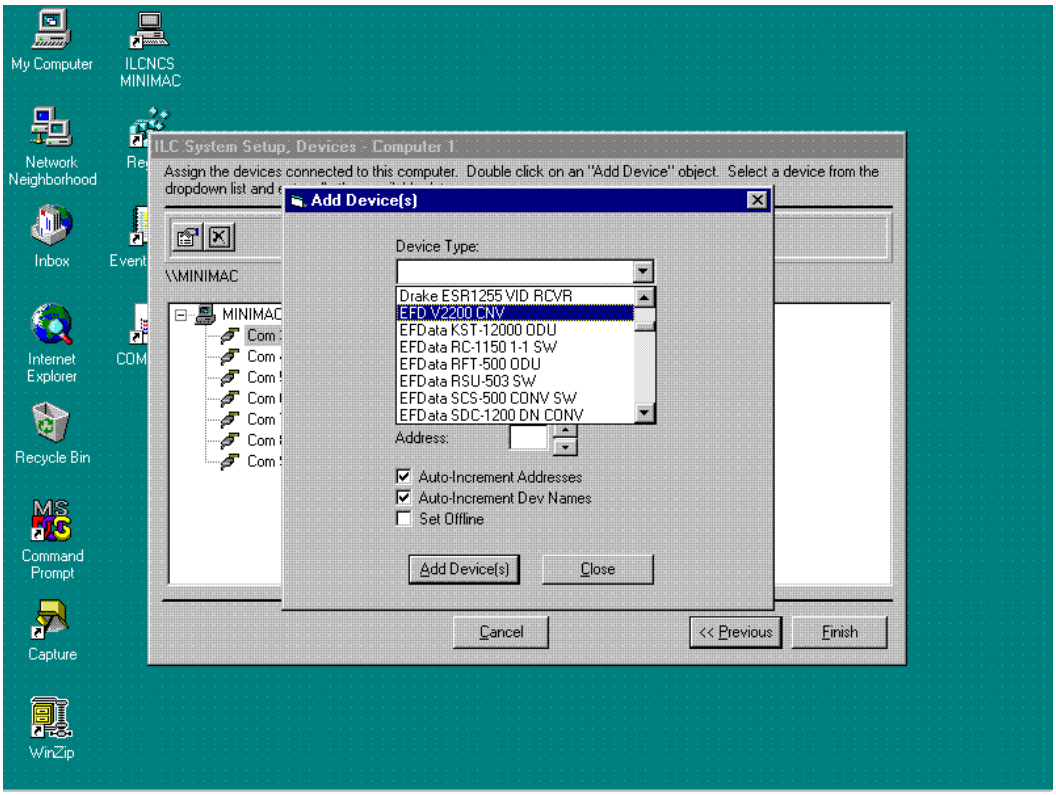
6.5 Adding a New Device

Click on: ADD DEVICE



6.6 Selecting a New Device Type from Device List

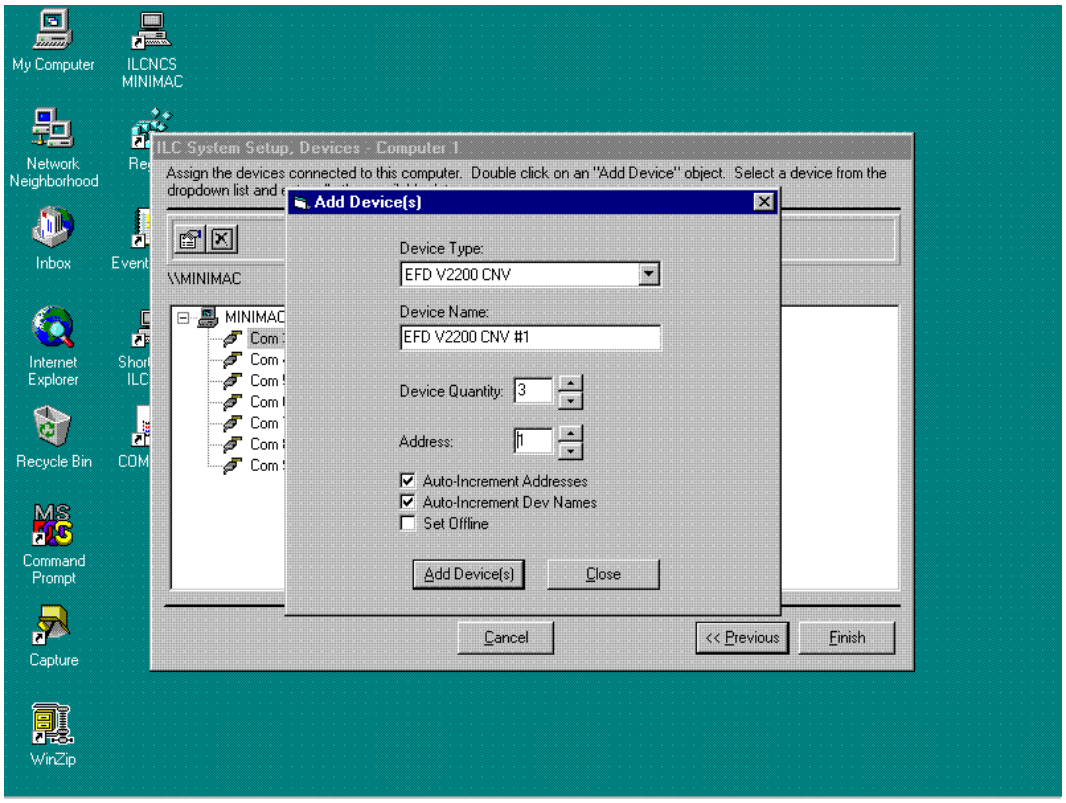
Select the required EFData device from the Device List.



6.7 Configuring and Adding the New Device Type

Select device quantity to add to COMM port. Select the Device Address.
Click on: ADD DEVICE (S)

Note: Continue to add devices until all Device Types have been added to each COMM Port.



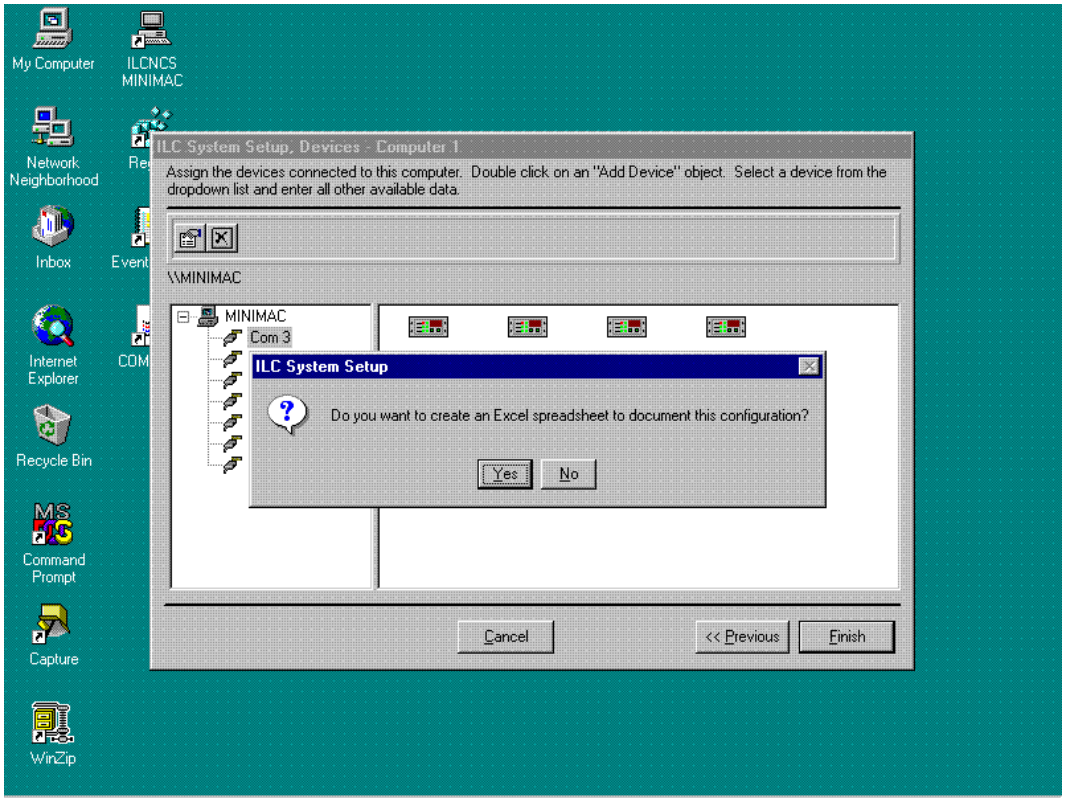
6.8 Creating an EXCEL Spreadsheet

When all device types have been added to each COMM port:

Click on: FINISH

A prompt will appear asking to create an EXCEL spreadsheet for this configuration.

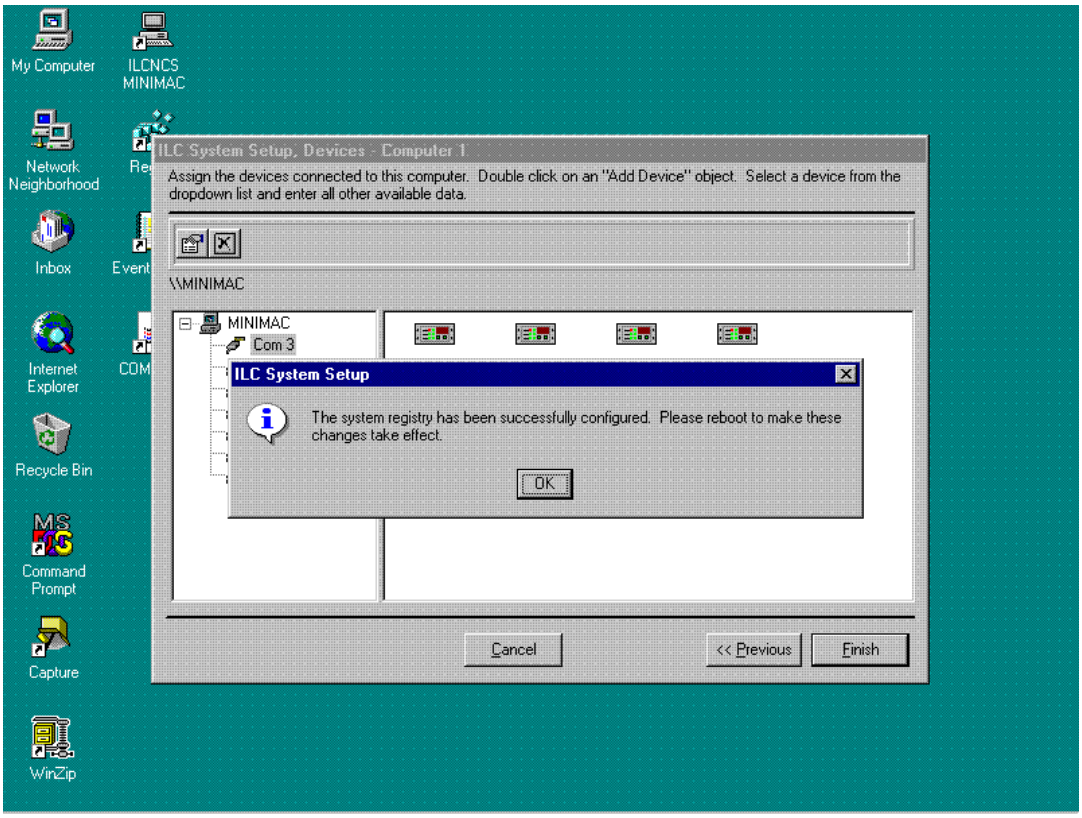
- If EXCEL is available, Click on: YES
- If EXCEL is not available, Click on: NO



6.9 Updating the System Registry

Upon completion, the system Registry Editor has been successfully configured.

Restart the computer.



Note: It is recommended to export a copy of the Registry File to a backup location after running the System Setup Program.

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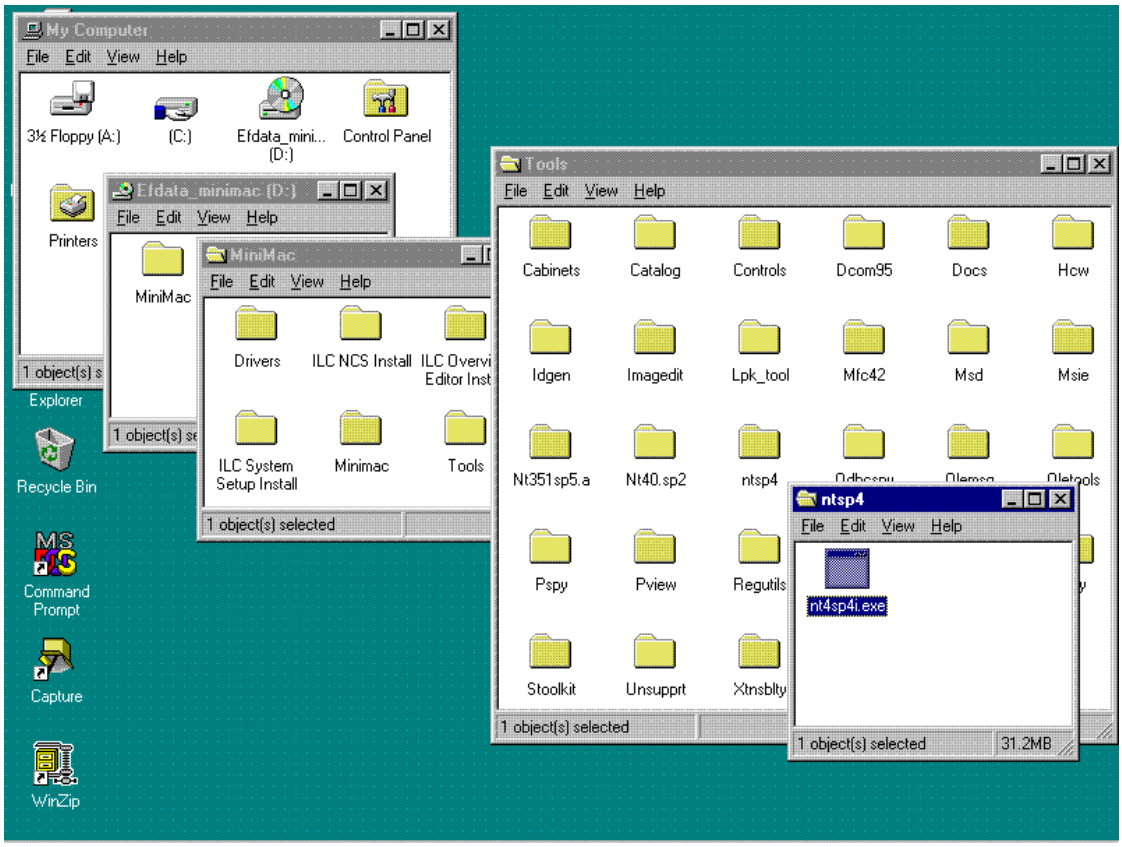
5.1 Path to Service Pack

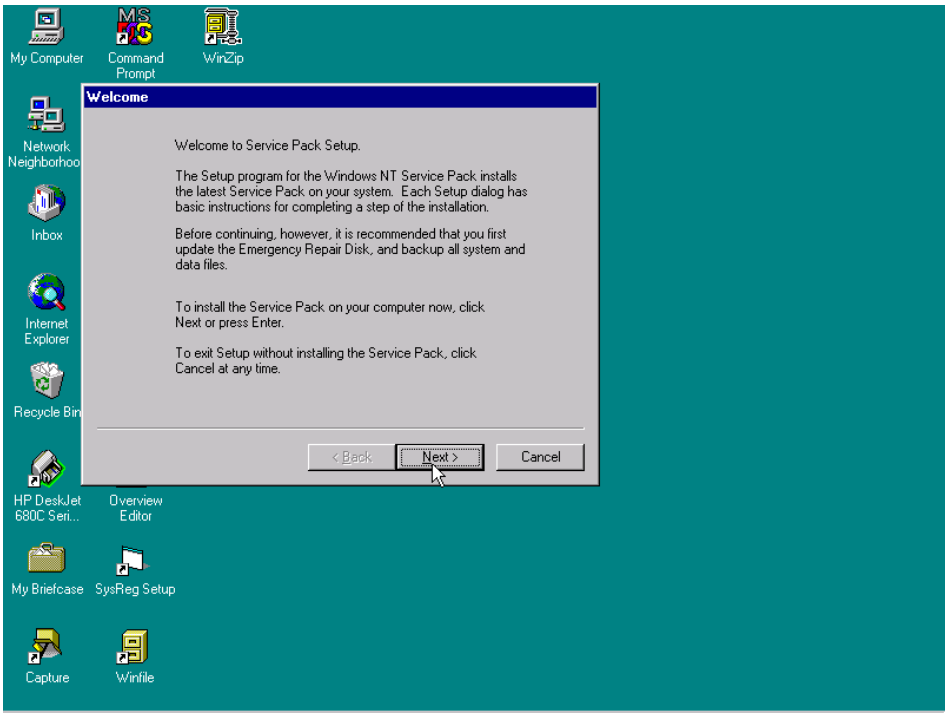
Verify path to the Service Pack:

Path: My Computer\D:Adaptive Broadband_MiniMAC\MiniMAC\Tools\ntsp4
Run: ntsp4i.exe



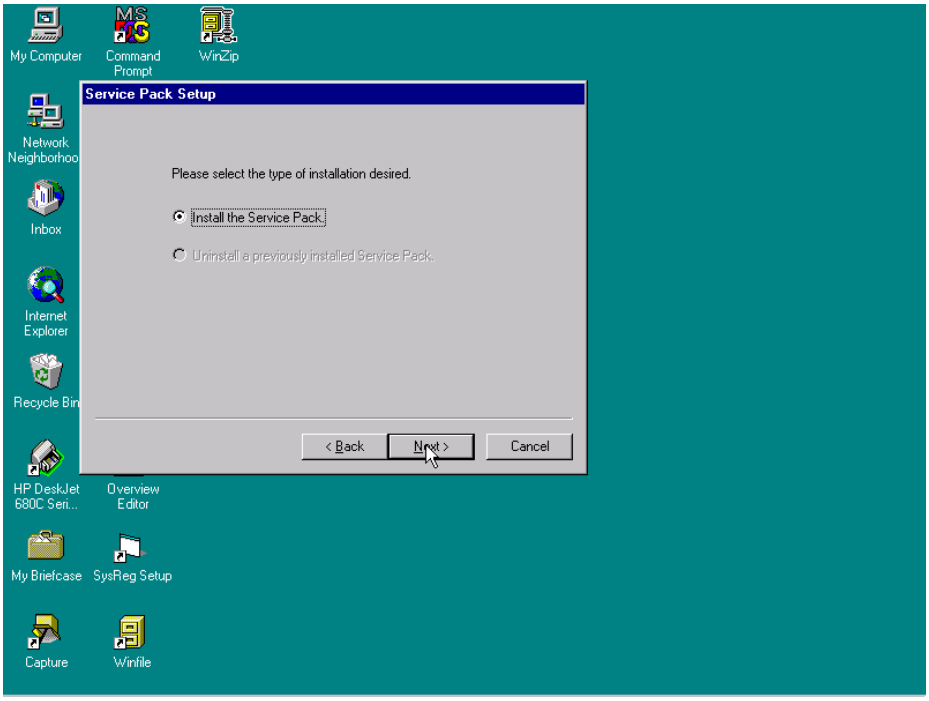
5.2 Service Pack

Read: Welcome to Service Pack.
Click on: NEXT



5.3 Service Pack Installation

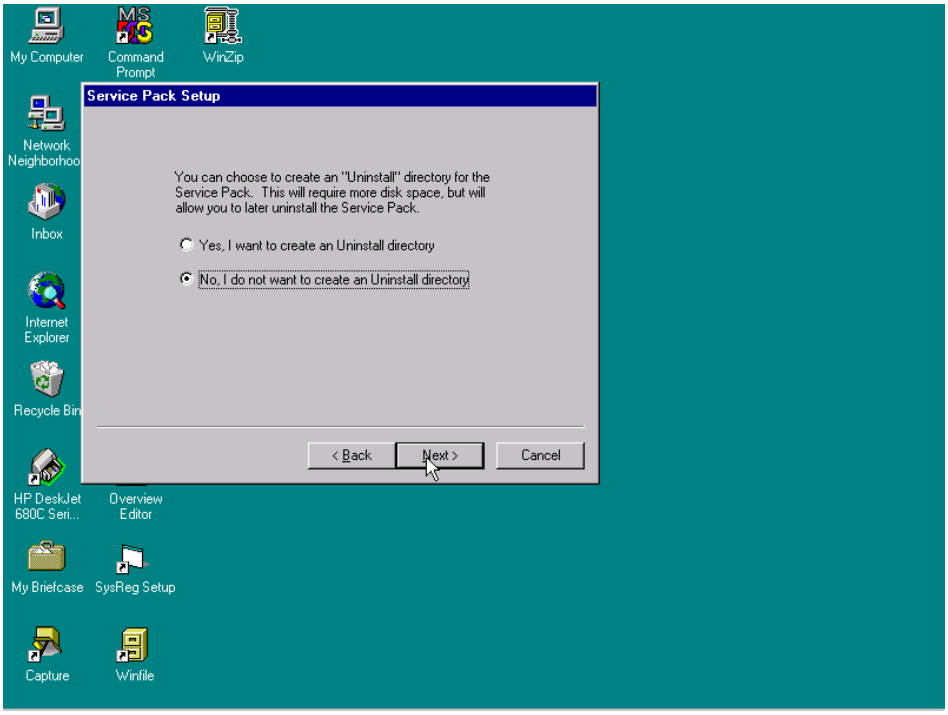
Select the type of required installation.



5.3.1.1 Uninstall Options

The Uninstall Options allows the user to create an Uninstall directory for the Service Pack.

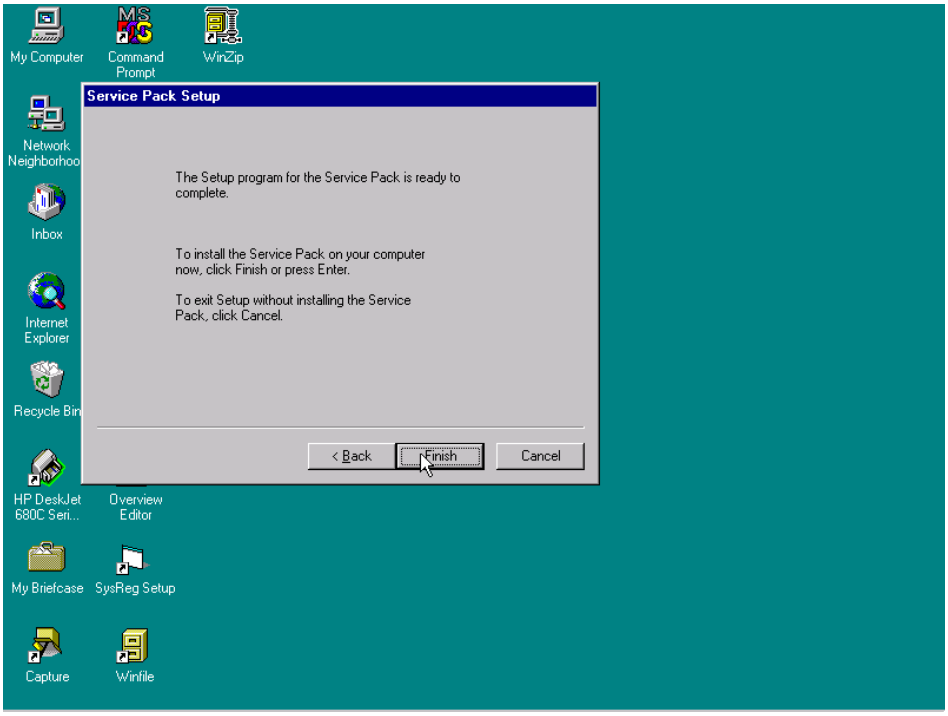
Command	Response
Enable	Yes (Allows user to create an Uninstall directory) No (Allows the user to decline the offer)
Click on	NEXT



5.3.1.2 Complete Installation

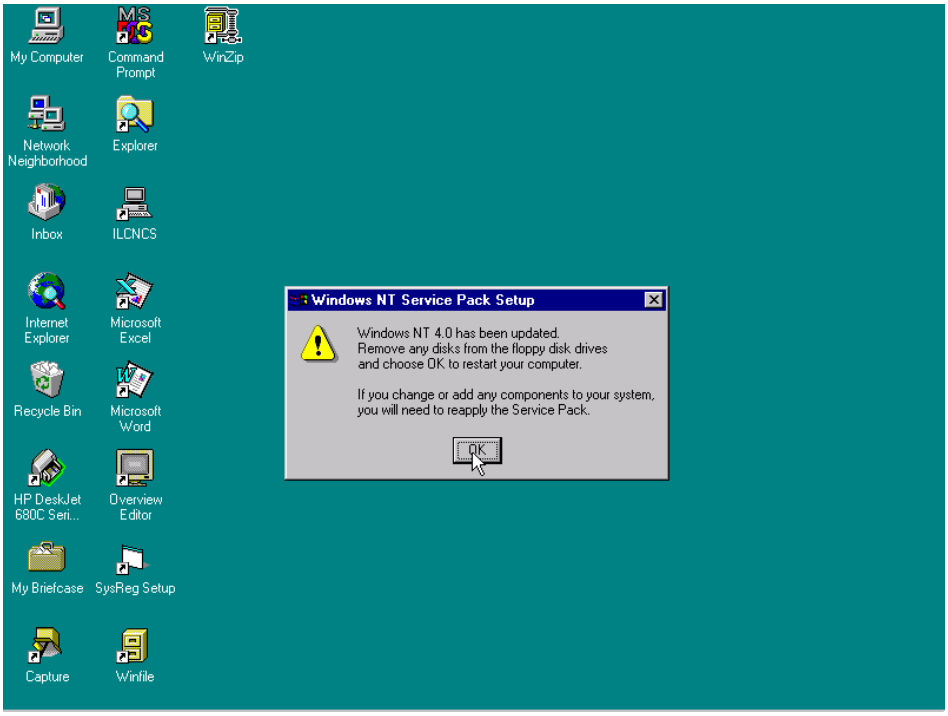
User must decide to finish the installation or exit the program at this time.

Command	Response
Install Service Pack Click on:	Finish or press <ENTER>
Exit Setup without installing Service Pack Click on:	Cancel (Cancels installation of Service Pack and removes temporary files.)



5.4 Restarting the Computer

Windows NT™ has been updated and will prompt the user to restart the computer at this time. Click on: OK



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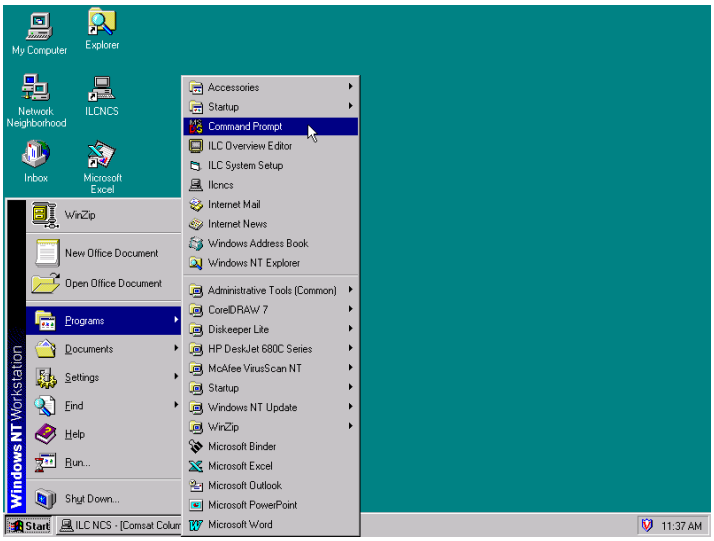
4.1 Path to Command Prompt

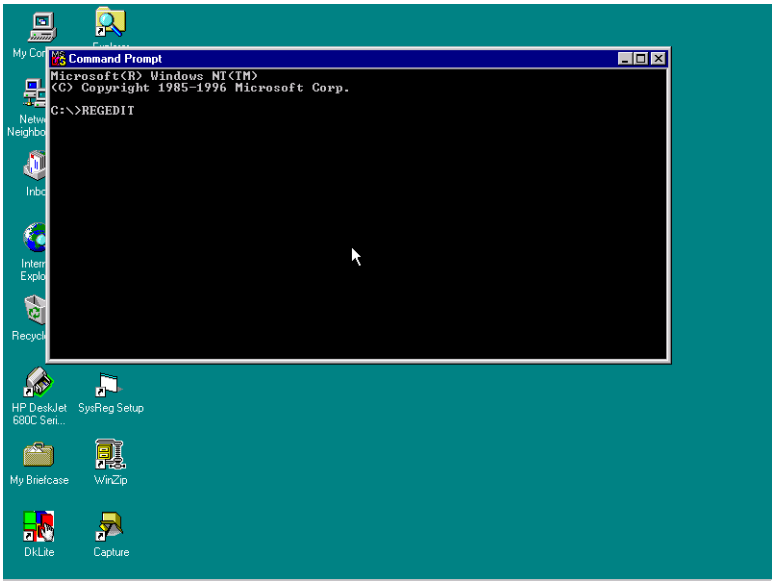
Path to Registry Editor:
Start:\Programs\Command Prompt



4.2 Opening the Registry Editor

To permit access to the REGISTRY EIDTOR, perform the following:

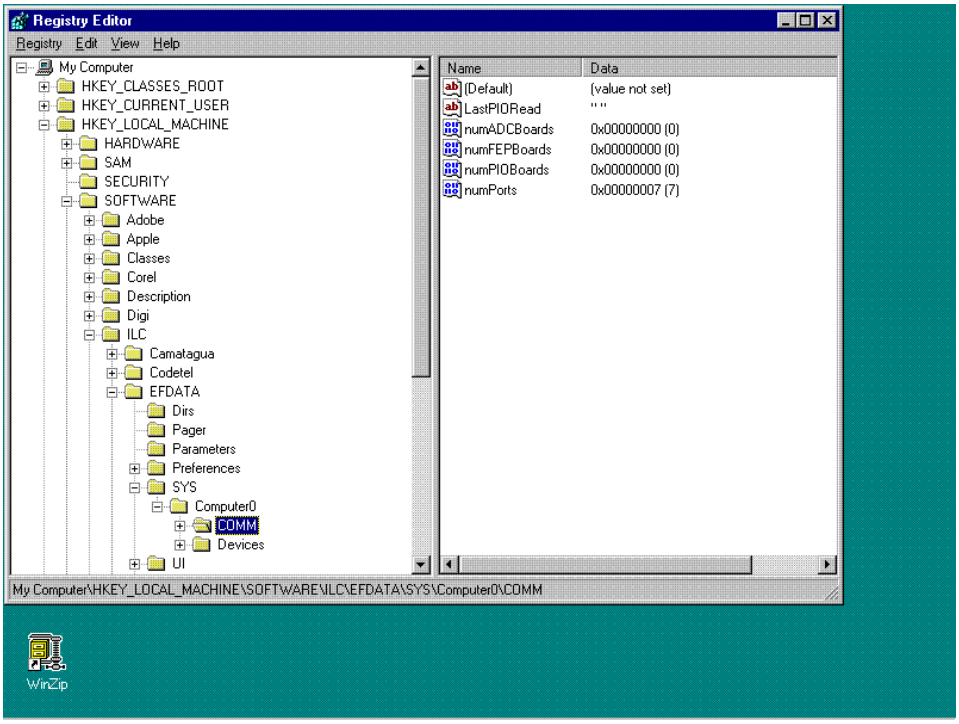
Type: REGEDIT



4.2.1 Path to the HOTKEY and COMM Ports

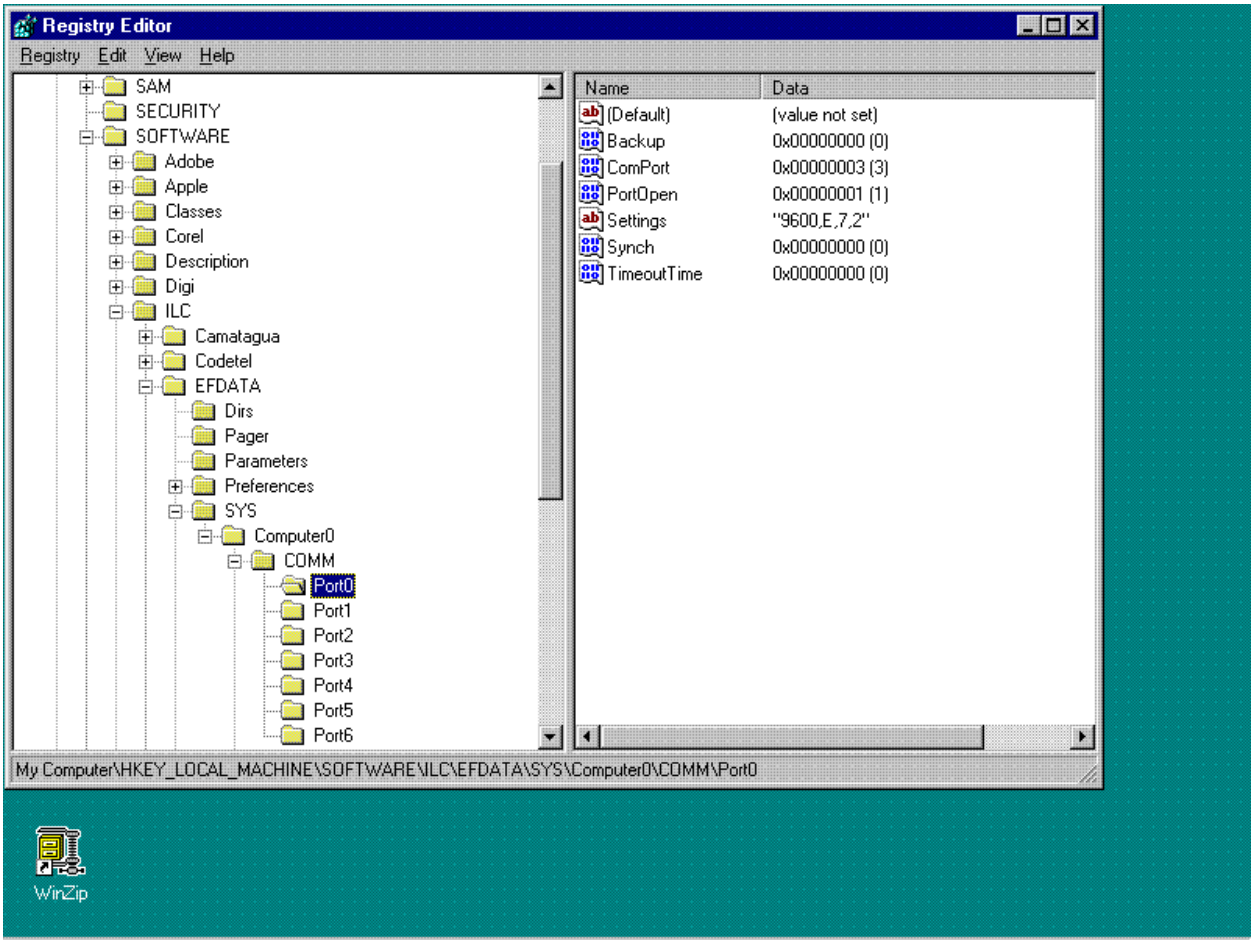
To view the COMM ports, perform the following:

Command	Response
Go to	HKEY_LOCAL MACHINE
Go to	SOFTWARE
Go to	ILC
Go to	EFData
Go to	SYS
Go to	Computer0
Go to	COMM
Open	COMM File Folder



Note: Observe the last line on the right-hand side. The number of ports in this system is 7.

Open PORT 0 file folder



Notes:

1. Observe the right column, information concerning each particular port is displayed. This port is ComPort3. The ComPort is OPEN (ACTIVE). The ComPort SETTING "9600,E,7,2" is:

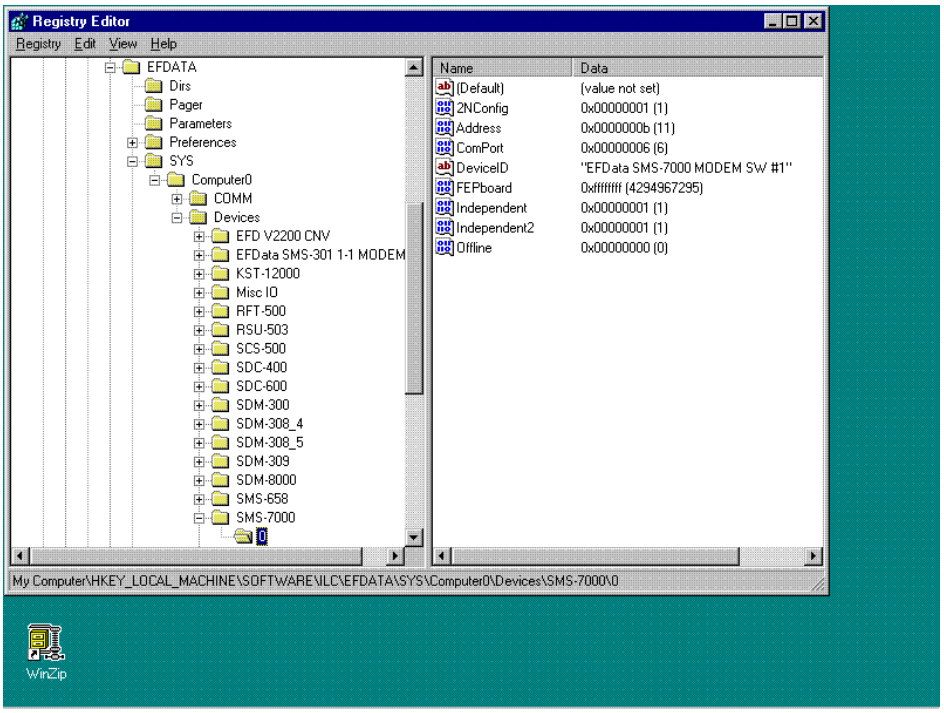
   - Baud Rate = 9600 kbit/s
   - Parity = Even
   - 7 data bits
   - 2 stop bits

2. Timeout Time may be important for lower baud rate or ports that are remote sites. Typically, for local ports, the Timeout Time is within 0 and 3 seconds. For lower baud rate ports and remote sites, the Timeout Time is typically set within 2 to 5 seconds. For additional information, refer to Appendix B, Troubleshooting.

4.2.2 Path to the ILC Devices

To view the ILC Devices, perform the following:

Command	Response
Go to	HKEY_LOCAL MACHINE
Go to	SOFTWARE
Go to	ILC
Go to	EFData
Go to	SYS
Go to	Computer # 0
Go to	DEVICES
Go to	SMS-7000
Go to	Folder0



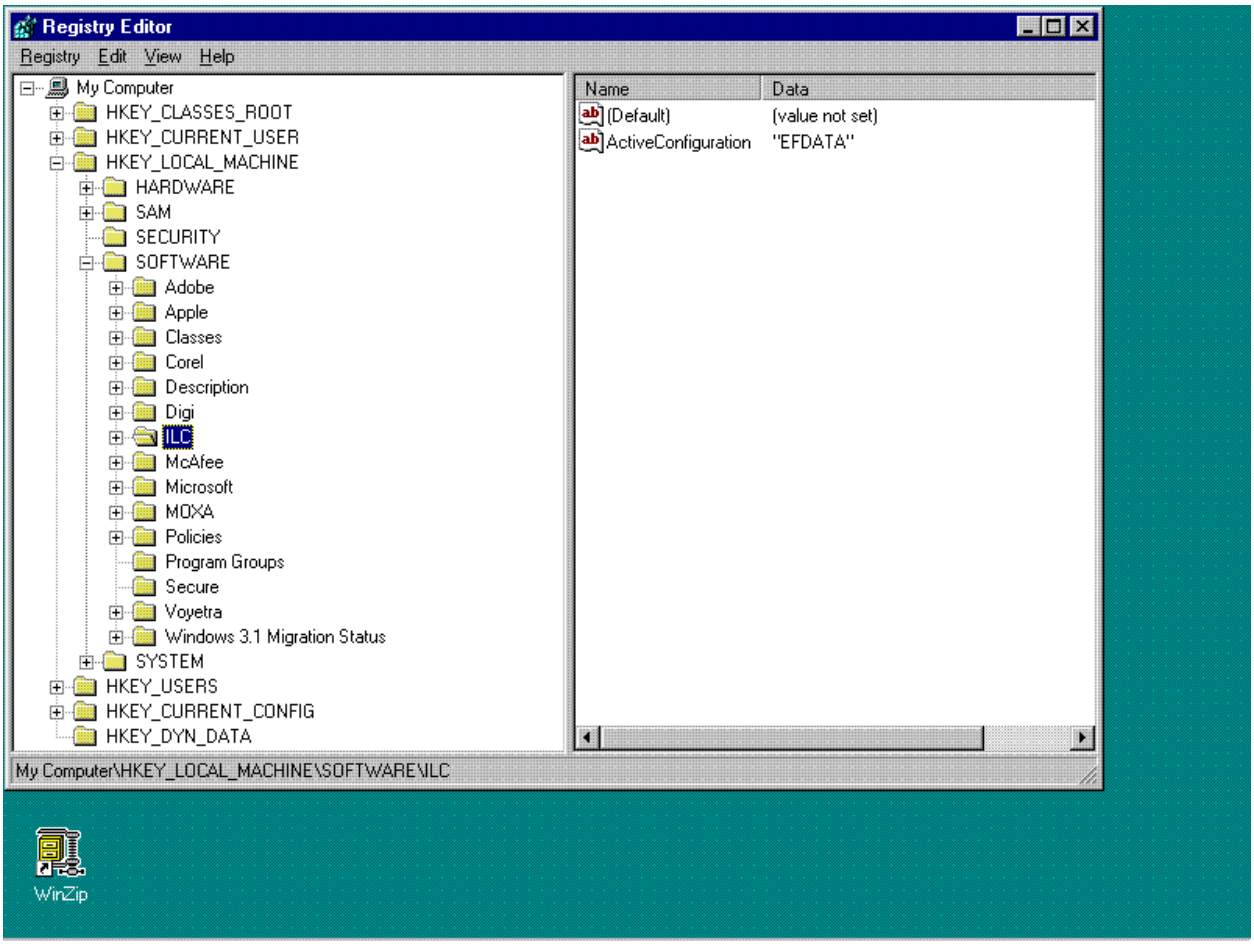
Note: The SMS-7000 Switch is:

Connected to	ComPort 6
Address	11
Configured	2NConfig (2 Backups)
Device Name	SMS-7000 Modem SW #1 Backup #1 is INDEPENDENT Backup #2 is INDEPENDENT
Status	ONLINE (MiniMAC is communicating or polling this device.)

4.3 Selecting a Path to Export

To select a path to export, perform the following:

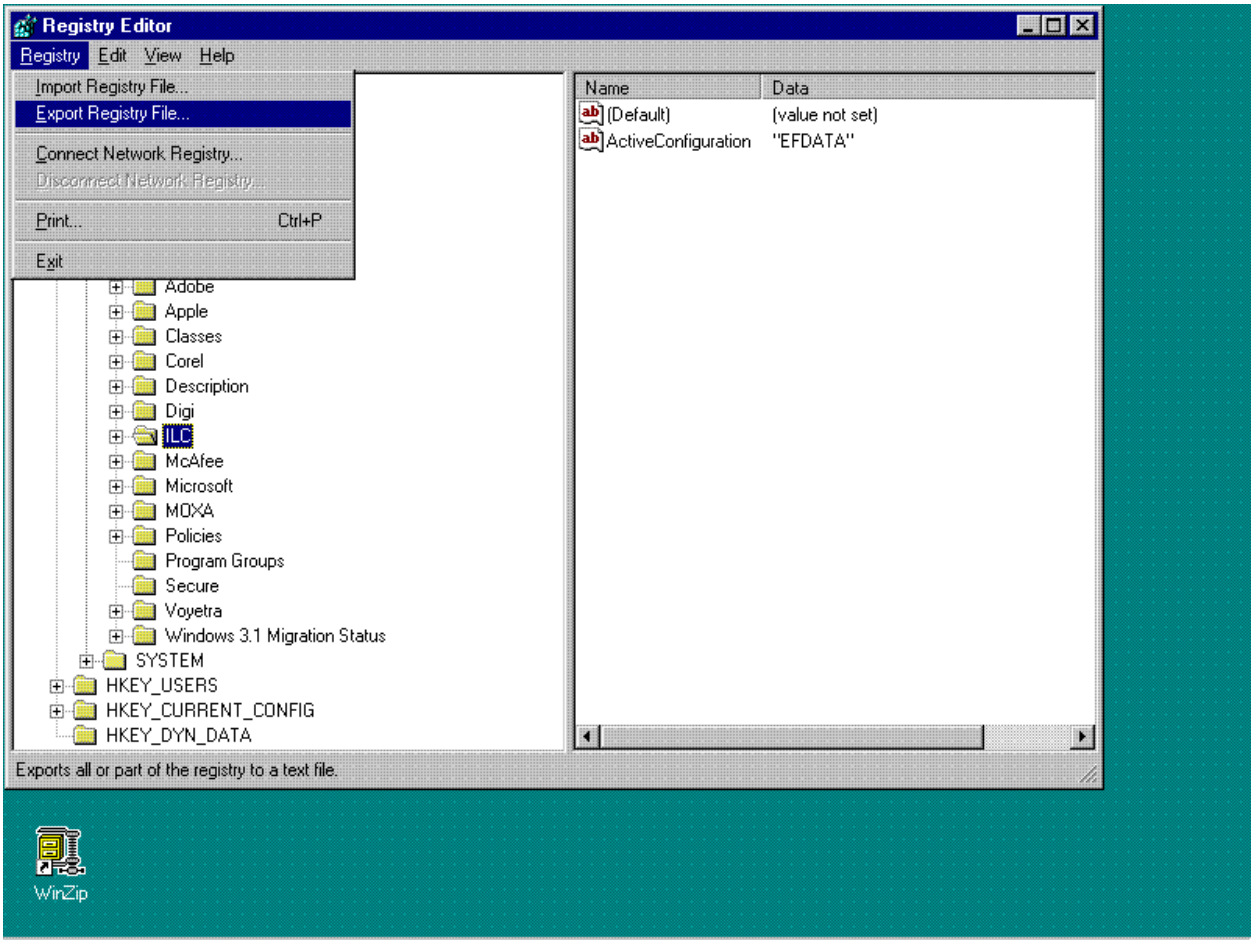
Command	Response
Go to	HKEY_LOCAL MACHINE
Go to	SOFTWARE
Go to	ILC
Highlight	ILC file folder



4.4 Exporting a Registry File

Perform the following to export a REGISTRY File.

Command	Response
Click on	REGISTRY menu
Click on	EXPORT REGISTRY FILE



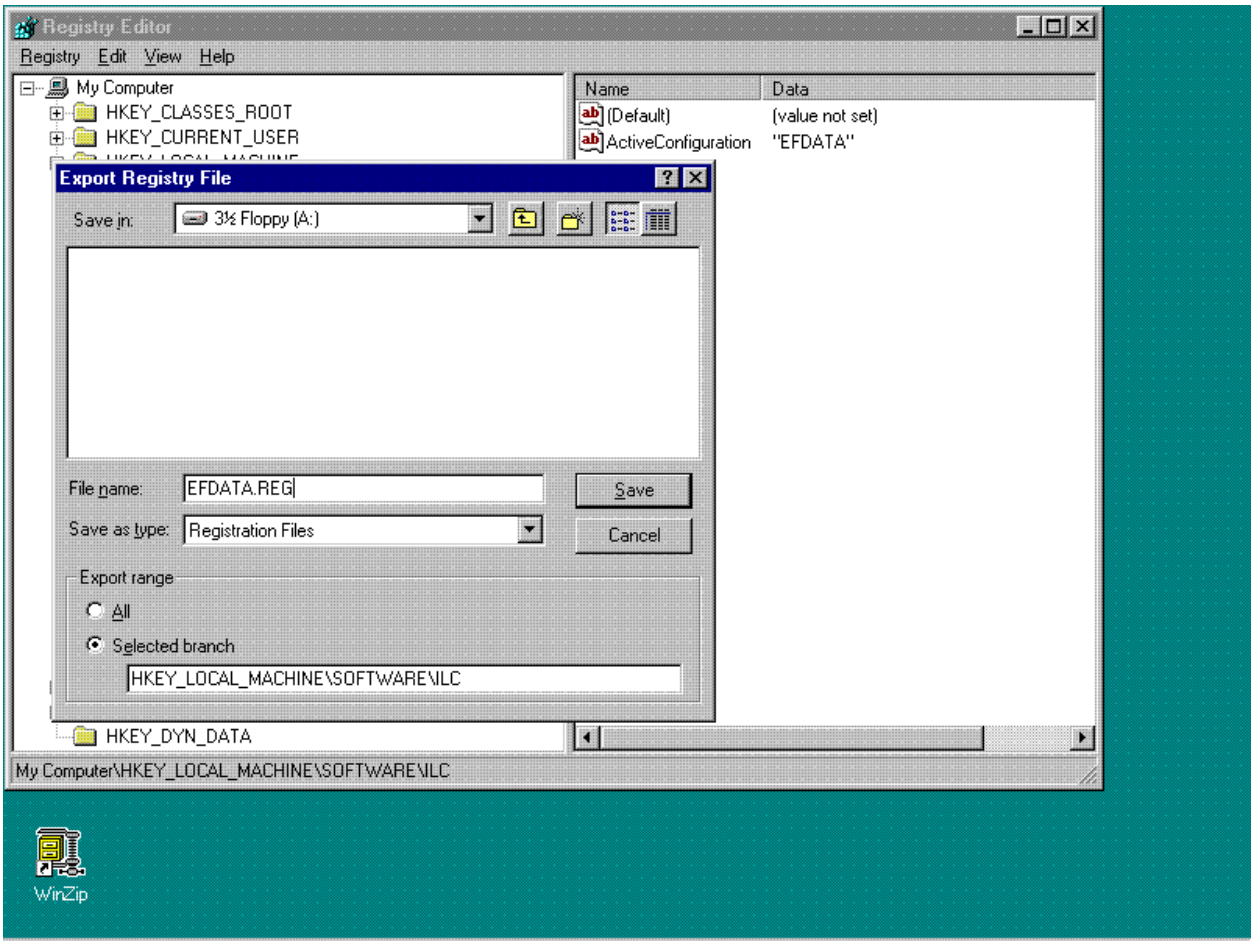
4.4.1 Naming the Registry File

To name a REGISTRY File, perform the following:

Command	Response
Click on	REGISTRY menu
Click on	EXPORT REGISTRY FILE
Save as	Name Location
File Name	Name File
Click on	SAVE

CAUTION

Whenever the Registry Editor has been updated or modified, it is recommend to export the new Registry File to a backup floppy. Possible anomalies may occur in the program, if a backup is not performed.



3.1 MiniMAC Program Setup

Note: Ensure Windows NT™, is installed, refer to Appendix A.

1. Install the PC board to accept the port expanders in an available 16 bit (full-length) expansion (ISA) slot, as follows:

   - PC Card P/N 650111-03, Controller is for ACL Star Gate™
   - PC Card C320 Control Board is for the MOXA™

2. Install the Rainbow™ Hardware key at the LPT1 port of the computer.

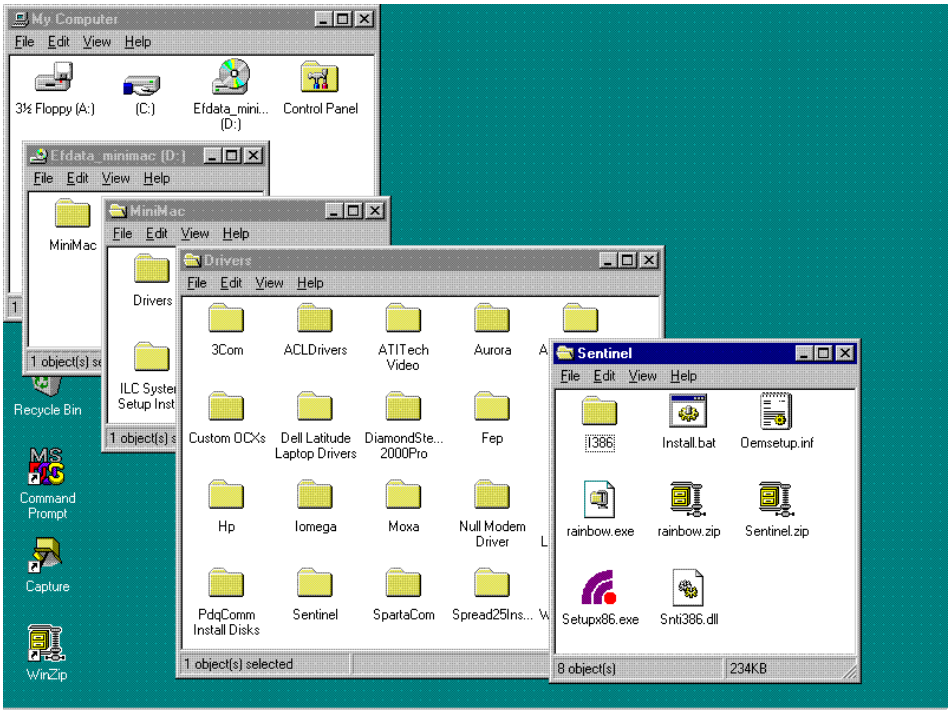
3. Install WIN ZIP on the computer.

Note: WIN ZIP is located in the DRIVER file folder of the MiniMAC CD-ROM.

3.2 Install SENTINAL Driver

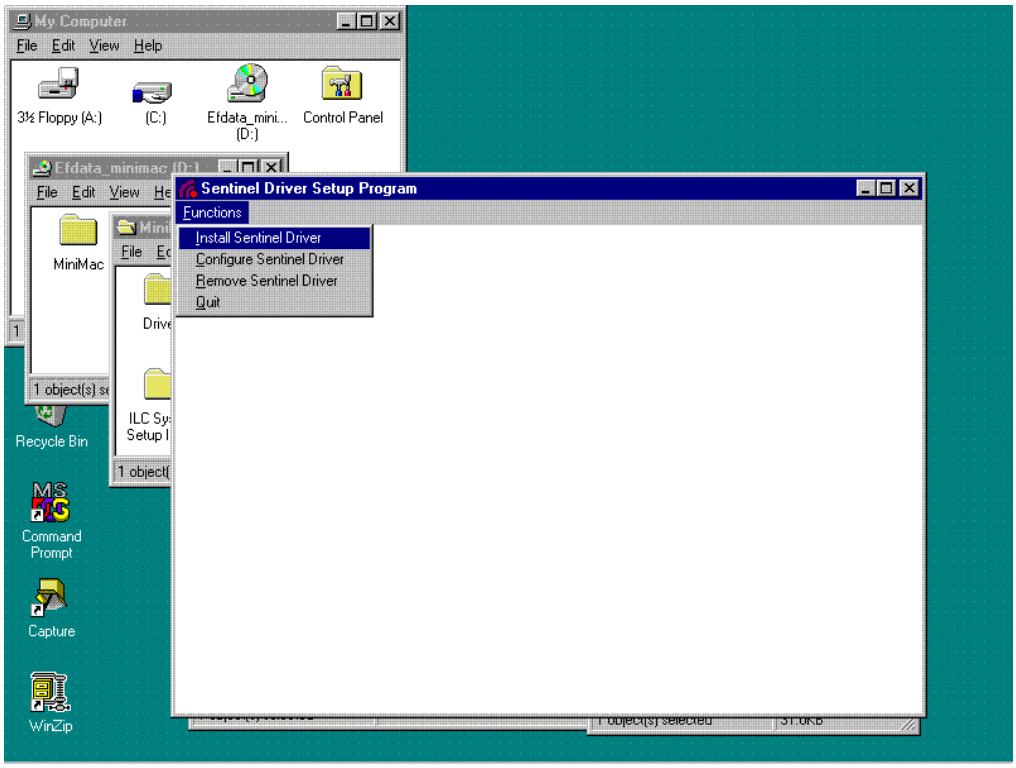
From the MiniMAC CD prompt, run the SENTINEL program:

- Go to: CD:\Site\Drivers\SENTINEL\Setupx86.exe
- Run Setupx86.exe



Install Driver as follows:

- Go to: Functions
- Click on: Install Sentinel Driver

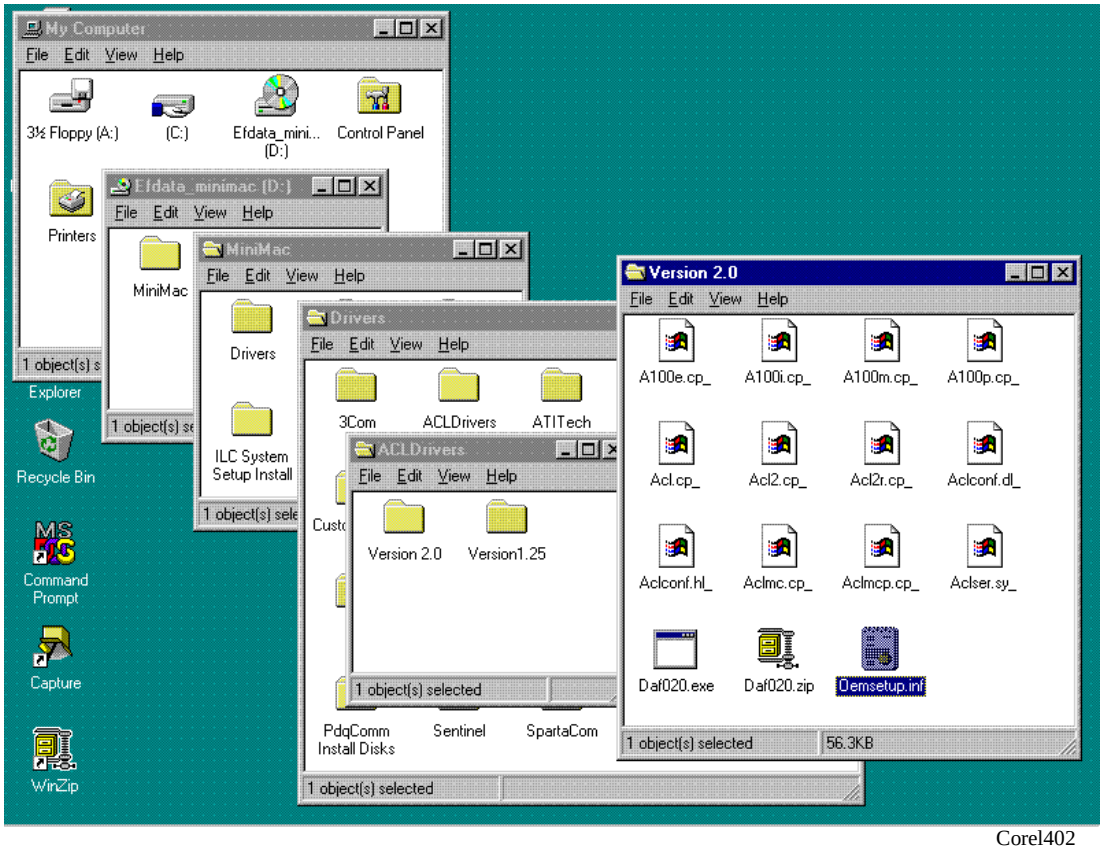


3.3 Install Port Expander Drivers

3.3.1 STAR GATE™/ACL Procedures

Verify path of OEMSETUP.INF:
Record Path: C:\Site\Drivers\ACLDrivers\Version 2.0\Oemsetup.inf.

Note: In this example, the site name is MiniMAC.

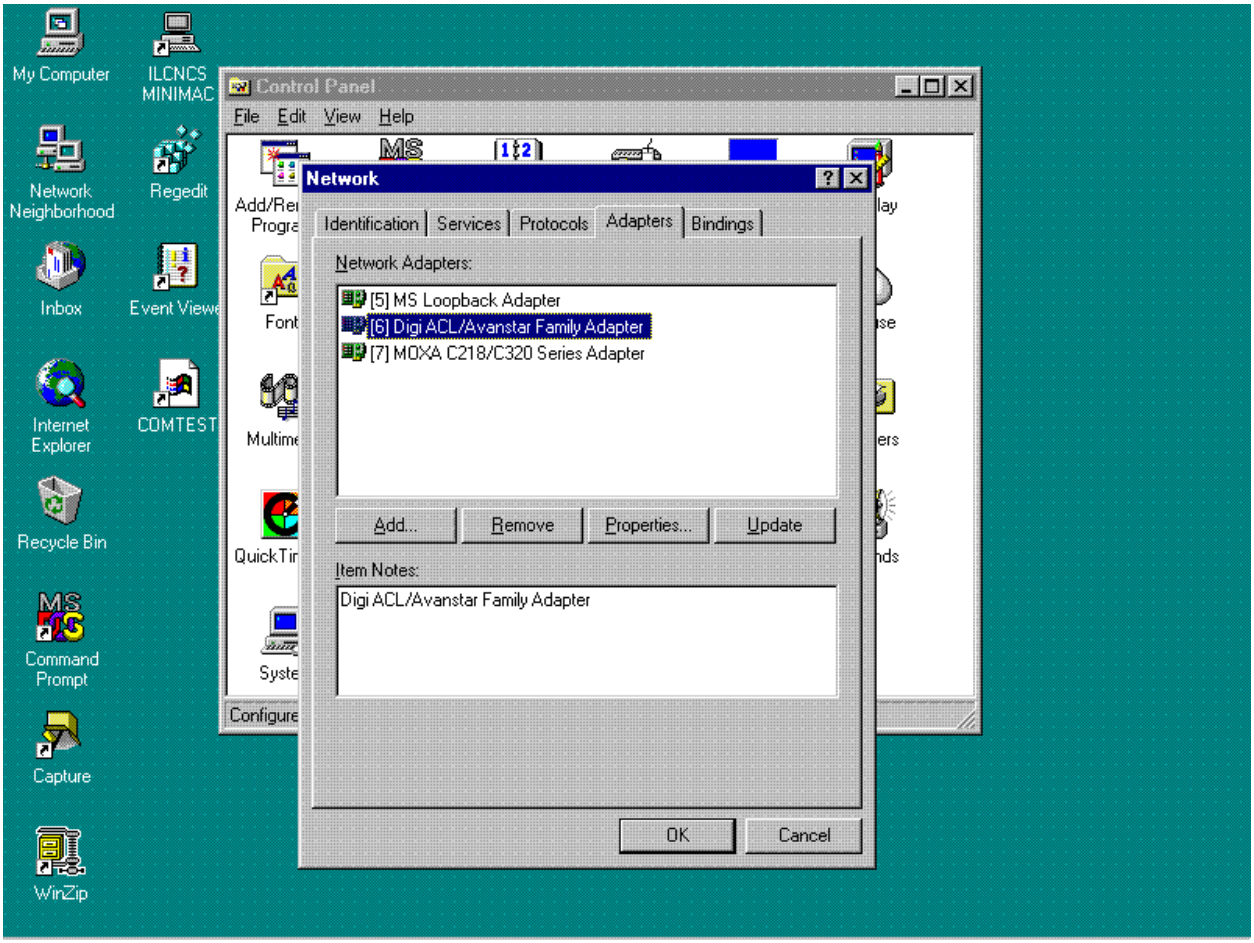


Corel402

3.3.1.1 Installing Adapter Drivers

Select the adapters and install drivers, as follows:

Command	Response
Go to	START, Control Panel
Click on	NETWORK
Select	ADAPTERS
Click on	ADD
Click on	HAVE DISK
Type	C:\Site\Drivers\ACLDrivers\Version 2.0 (as recorded in Section 3.3.1)
<ENTER>	
Go to	Properties

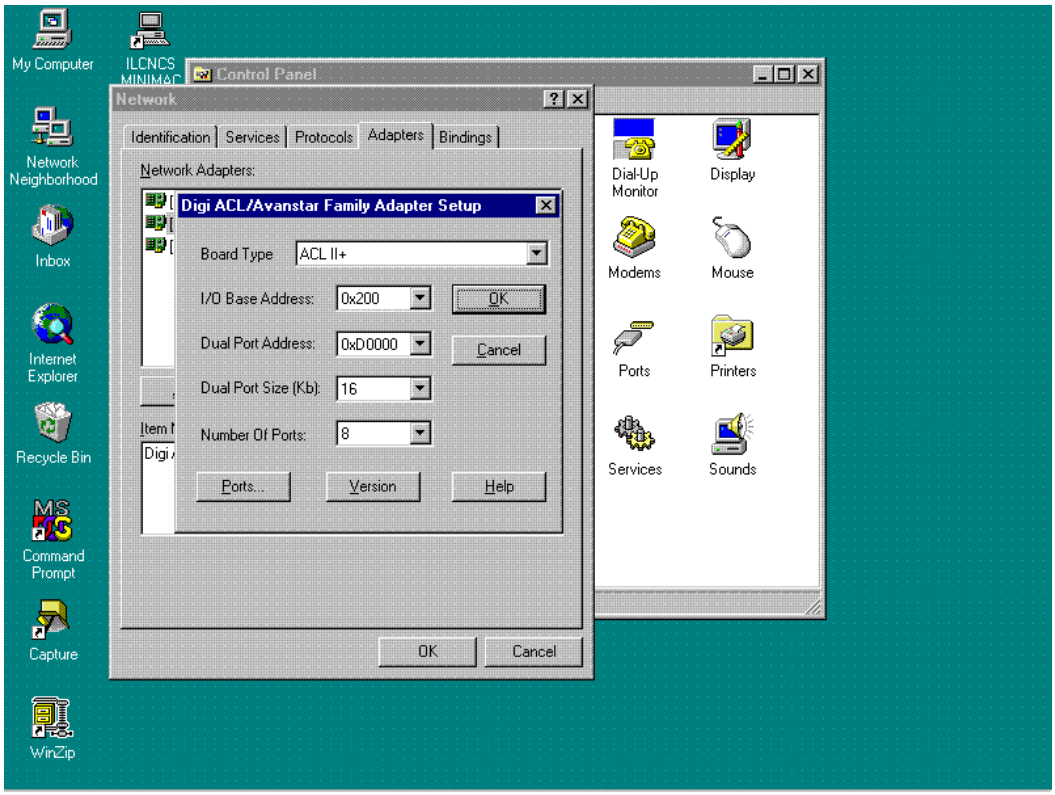


3.3.1.2 Install Properties

Select properties, as follows:

Selection	Reponse
Select	Board Type (ACL II+)
Select	I/O Base Address 0x200
Select	Dual Port Address 0xD000
Dual Size	16
No. of Ports	8

Note: All systems will have an identification file of all system parameters. This data is stored in: A:\BACKUP\IPCONFIG.TXT

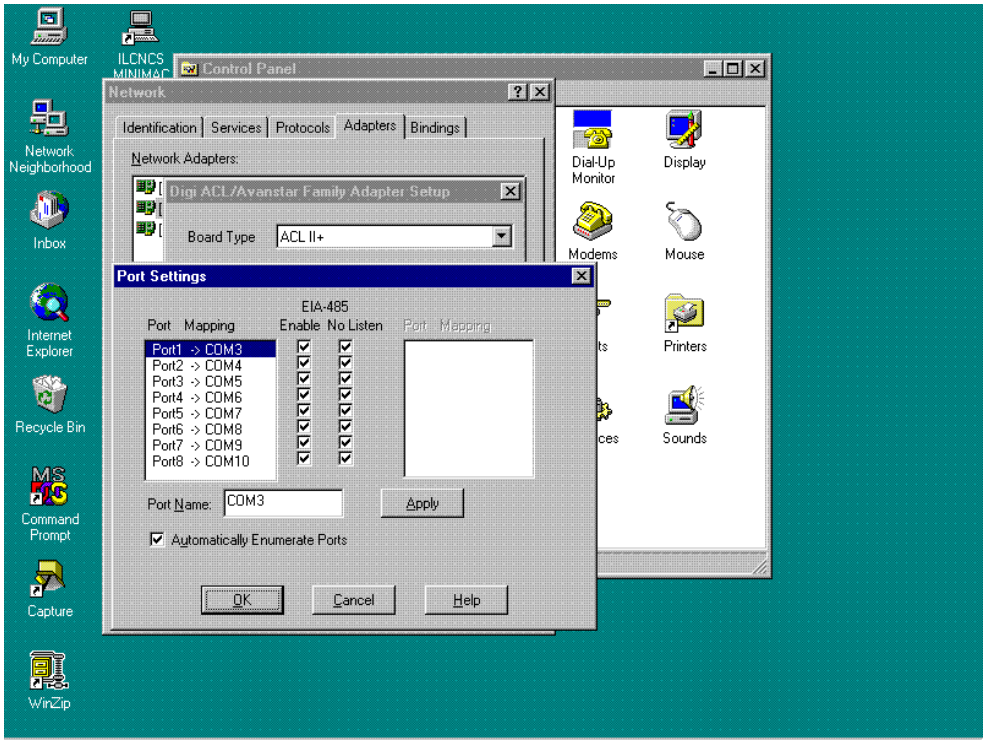


3.3.1.3 Enable Ports

Go to PORTS and check mark (✔) all the NO LISTENS

Note: The following is for a system with two boards.

Example : First PC card will be 3 – 10
Second PC card will be 11 – 18



Command	Response
Click on	OK
Click on	OK
Click on	OK
Restart Computer	

Verify the COMM ports with either:

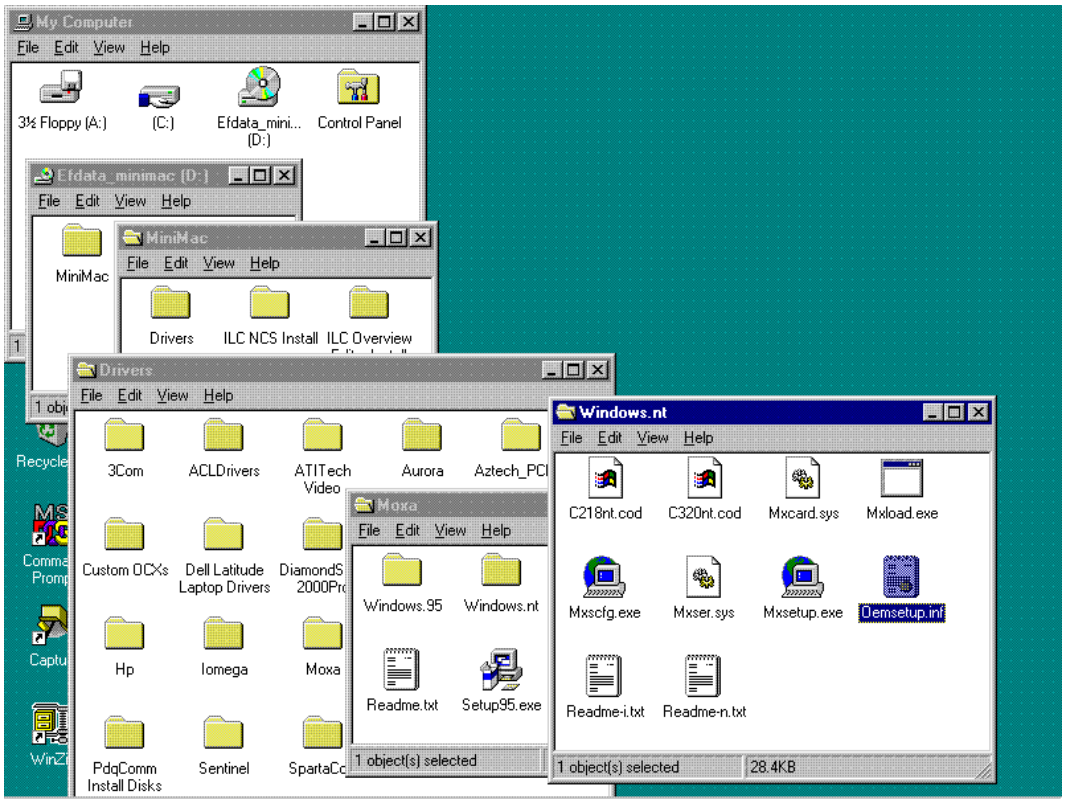
Hyperterm.Exe
Commtest. Exe

Notes:

1. Commtest.exe will run the communications port just like the MiniMAC program.
2. Hyperterm is located within the Windows NT program.
3. Commtest is located at: C:\Program Files\ILCNCS\Commtest.Exe.

3.3.2 MOXA Procedures

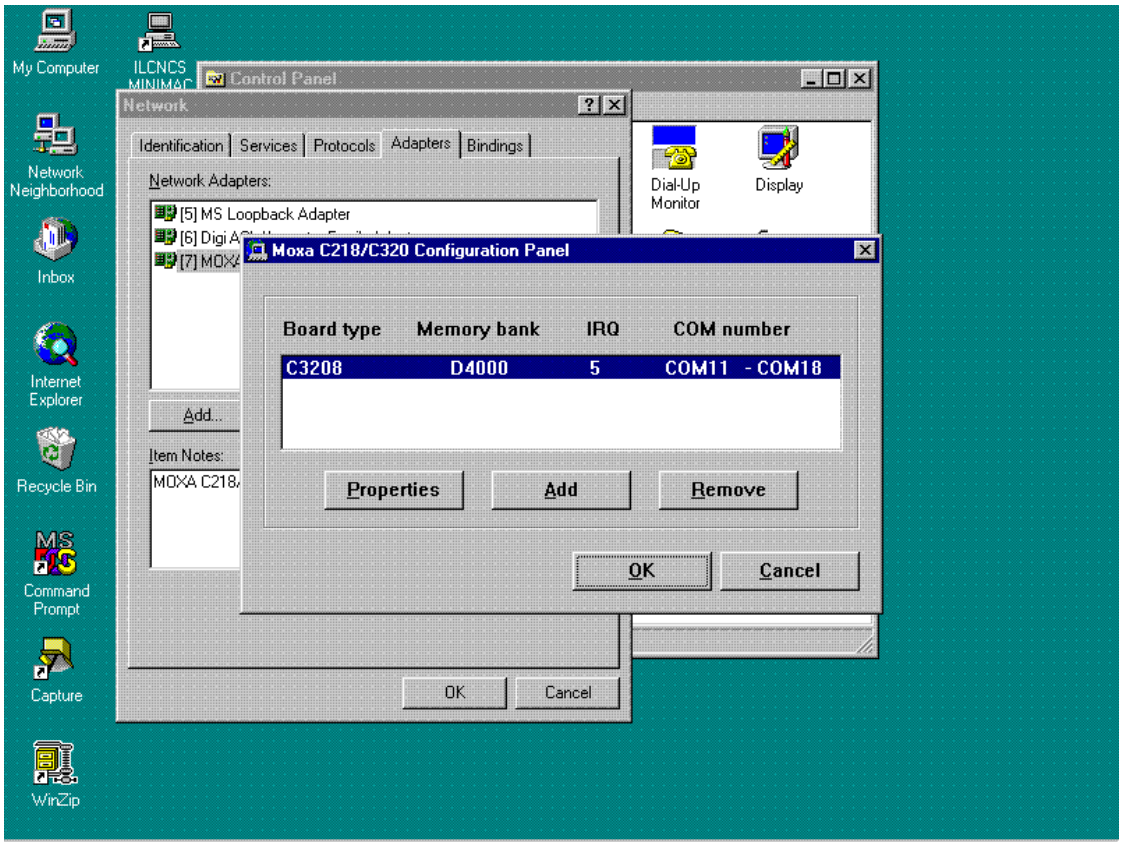
Verify path to OEMSETUP.INF
Record path: CD:\MiniMAC\Drivers\Moxa\Windows.nt



3.3.2.1 Install MOXA Adapter Drivers

Select the adapters and install drivers, as follows:

Command	Response
Go to	START, Control Panel
Click on	NETWORK
Select	ADAPTERS
Click on	ADD
Click on	HAVE DISK
Type	D:\Site\Drivers\MOXA\Windows.NT (as recorded in Section 3.3.2)
<ENTER>	
Go to	PROPERTIES
Select	PROPERTIES

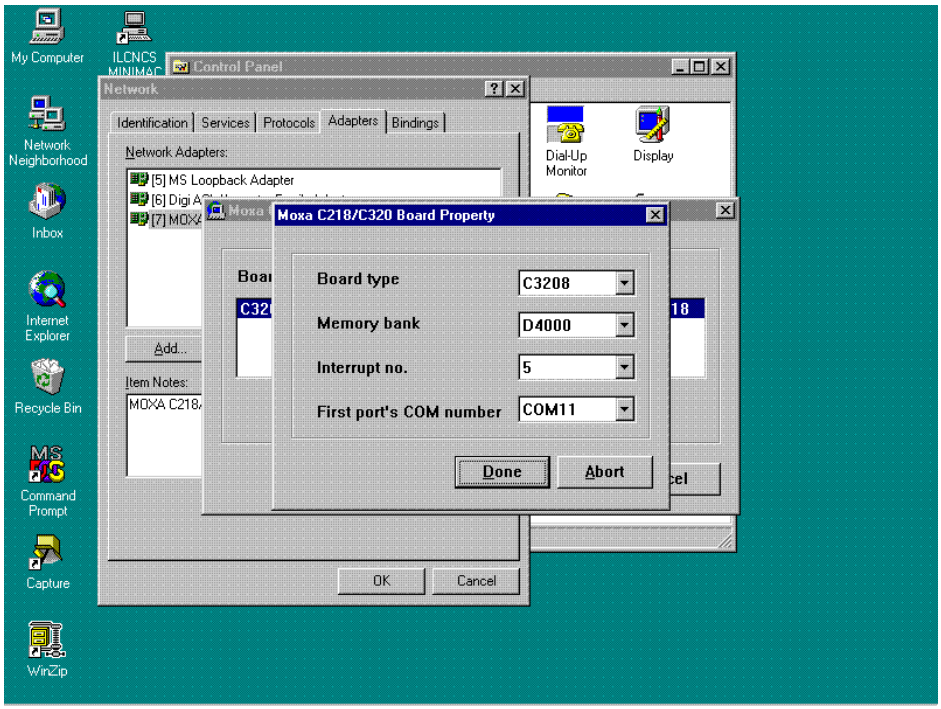


3.3.2.2 Install MOXA Properties

Select the following Properties as follows:

Selection	Response
Board Type	C3208
Memory Bank	D4000
Interrupt No.	5
First Port COMM No.	COMM11
Click on	Done
Click on	OK
Click on	OK
Restart Computer	

Note: All systems will have an identification file of all system parameters. This data is stored in: A:\BACKUP\IPCONFIG.TXT



Verify the COMM ports with either:

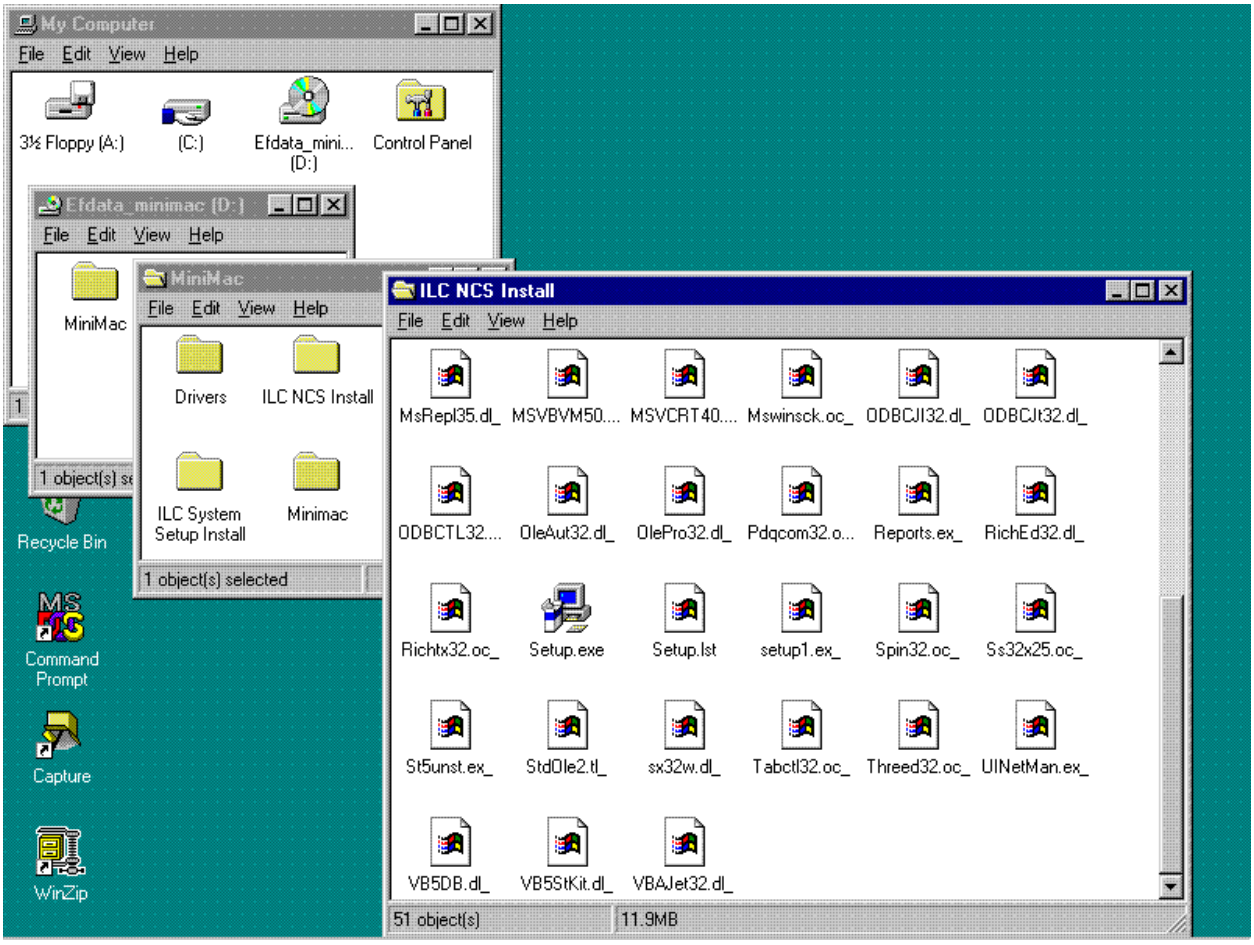
HYPERTERM.EXE
COMMTEST. EXE.

Notes:

1. Commtest.exe will run the communications port just like the MiniMAC program.
2. Hyperterm is located within the Windows NT program.
3. Commtest is located at: C:\Program Files\ILCNCS\Commtest.Exe.

3.4 Install ILCNCS

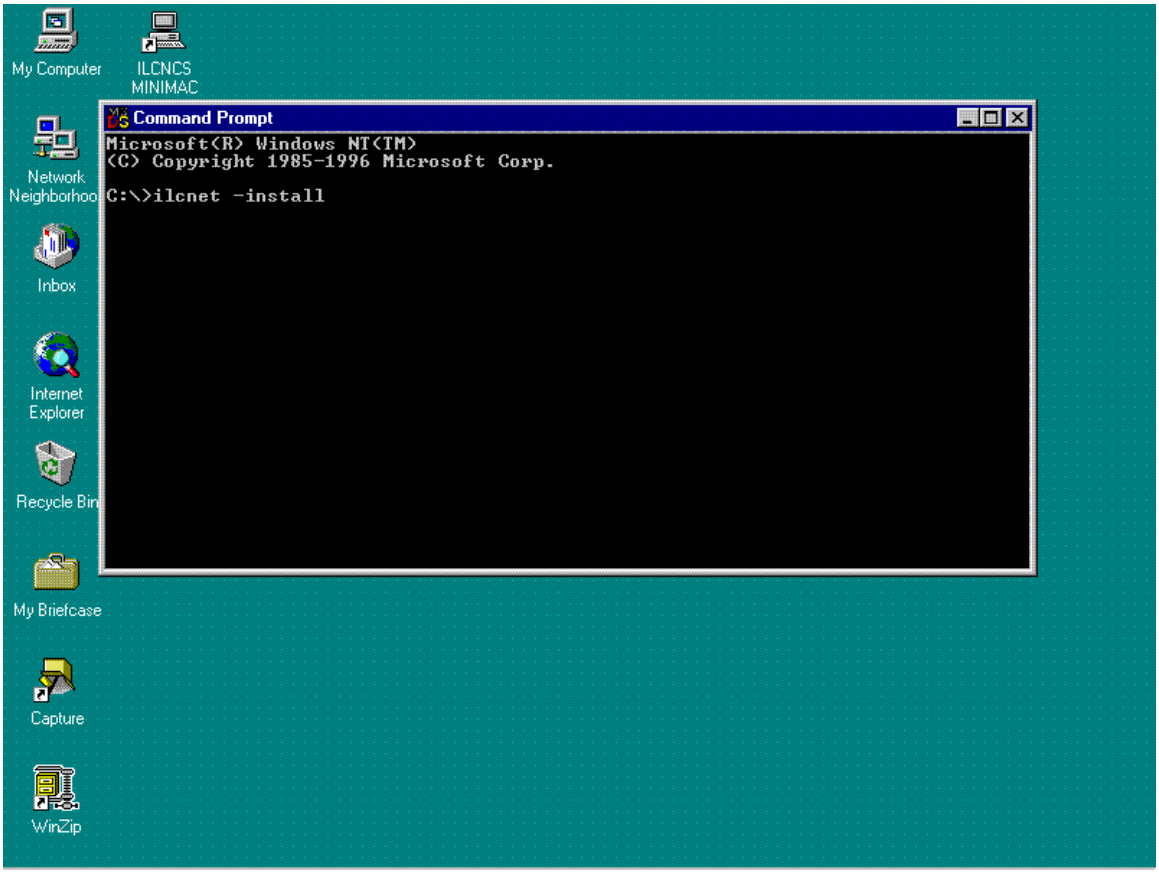
Install the ILCNCS MiniMAC Program from the CD-ROM.
Path: D:\MiniMAC\ILCNCS Install\Setup.exe
Run: Setup.exe

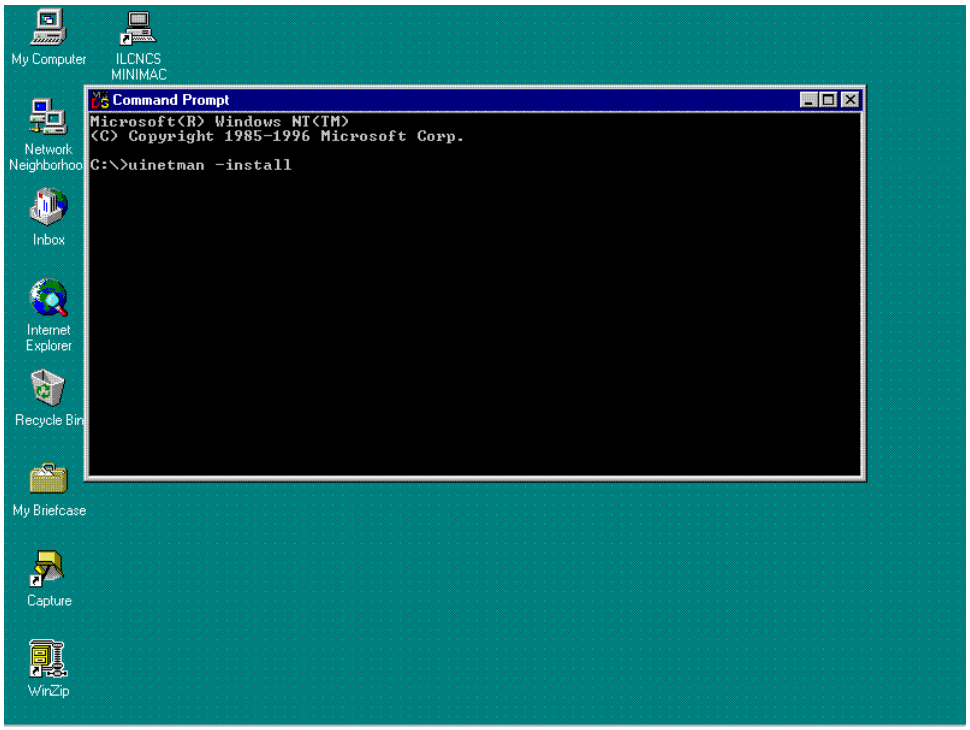


3.4.1 Install ILCNET and UINETMAN Services

Observe the following commands and enter the required responses:

Command	Response
Go to	DOS Prompt
Type	ILCNET -INSTALL
<ENTER>	
Type	UINETMAN -INSTALL
<ENTER>	
Restart Computer	





Note: There are three commands that can be used with these services:

- –Install
- –Debug
- –Remove

The debug commands will be described in Appendix A.3. Debugging the Services.

Note: The Remove command will eliminate the service from Windows NT. If the service is removed and reinstalled at a later time, it must be reconfigured as described in Section 3.4.2.

3.4.2 Check Services after Restart

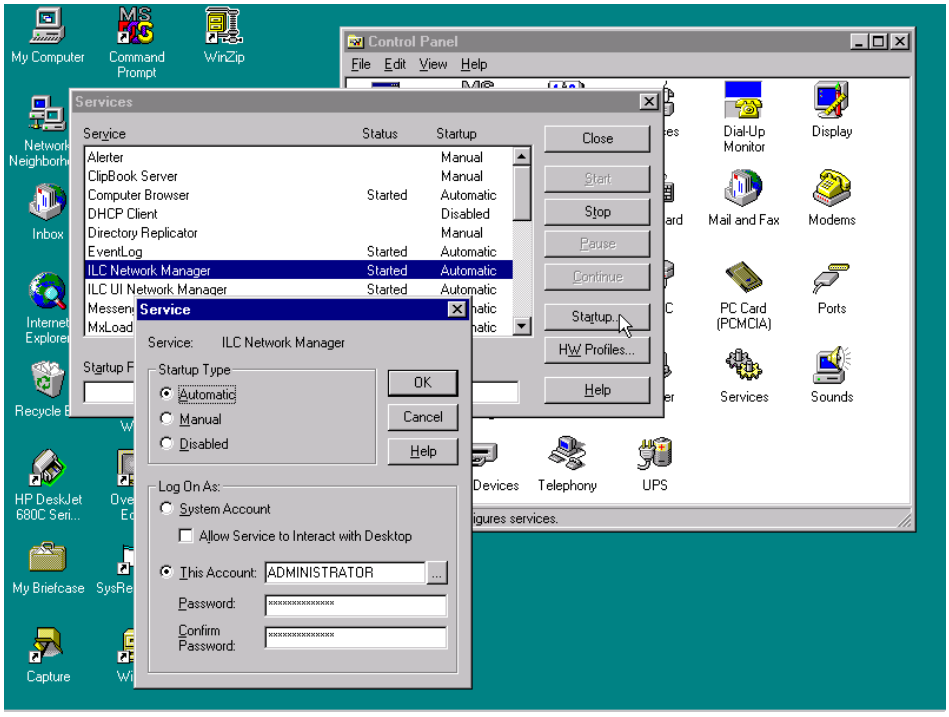
3.4.2.1 Configure ILCNET

Path: Start\Settings\Control Panel\Services

Notes:

1. Make sure the Loopback adapter is installed from Windows NT.
2. Default setting for ILC Network Manager is: MANUAL and NOT RUNNING.

Command	Response
Click on	ILC NETWORK MANAGER
Click on	STARTUP
Enable	AUTOMATIC
Enable	THIS ACCOUNT
Verify (or Type)	ADMINISTRATOR
Verify Password (or Type)	ilc (lower case)
Confirm Password	ilc (lower case)
Click on	OK

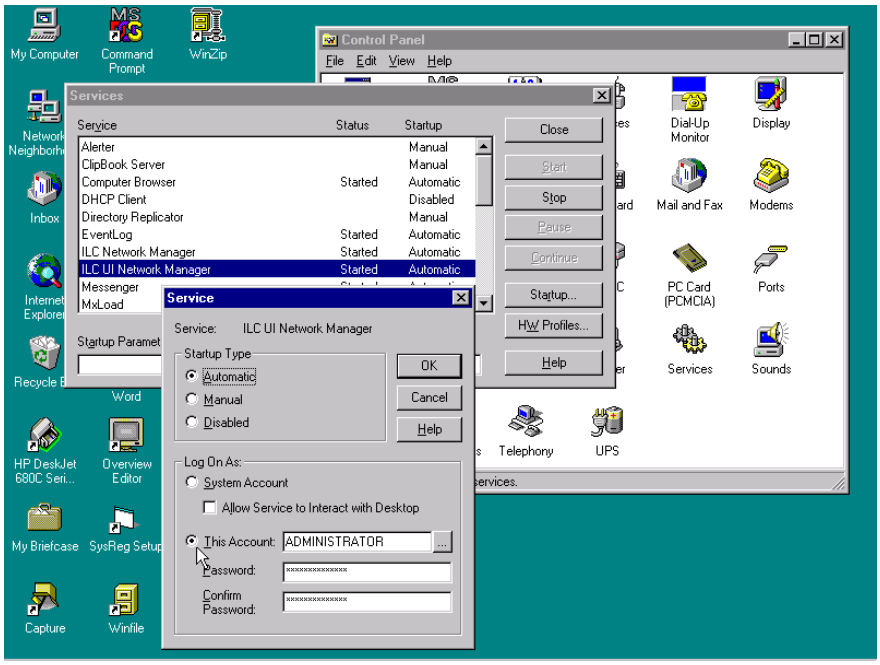


3.4.2.2 Configure ILC UI Netman

Path: Start\Setting\Control Panel\Services

Note: Default setting for ILC UI Network Manager is MANUAL and NOT RUNNING.

Command	Response
Click on	ILCUINETWORK MANAGER
Click on	STARTUP
Enable	AUTOMATIC
Enable	THIS ACCOUNT
Verify (or Type)	ADMINISTRATOR
Type Password	ilc (lower case)
Confirm Password (by typing)	ilc (lower case)
Click on	OK



3.5 Create New File Folder for Customer Site

Note: For the purpose of this manual, EFData is the customer.

Path: My Computer\(C:)

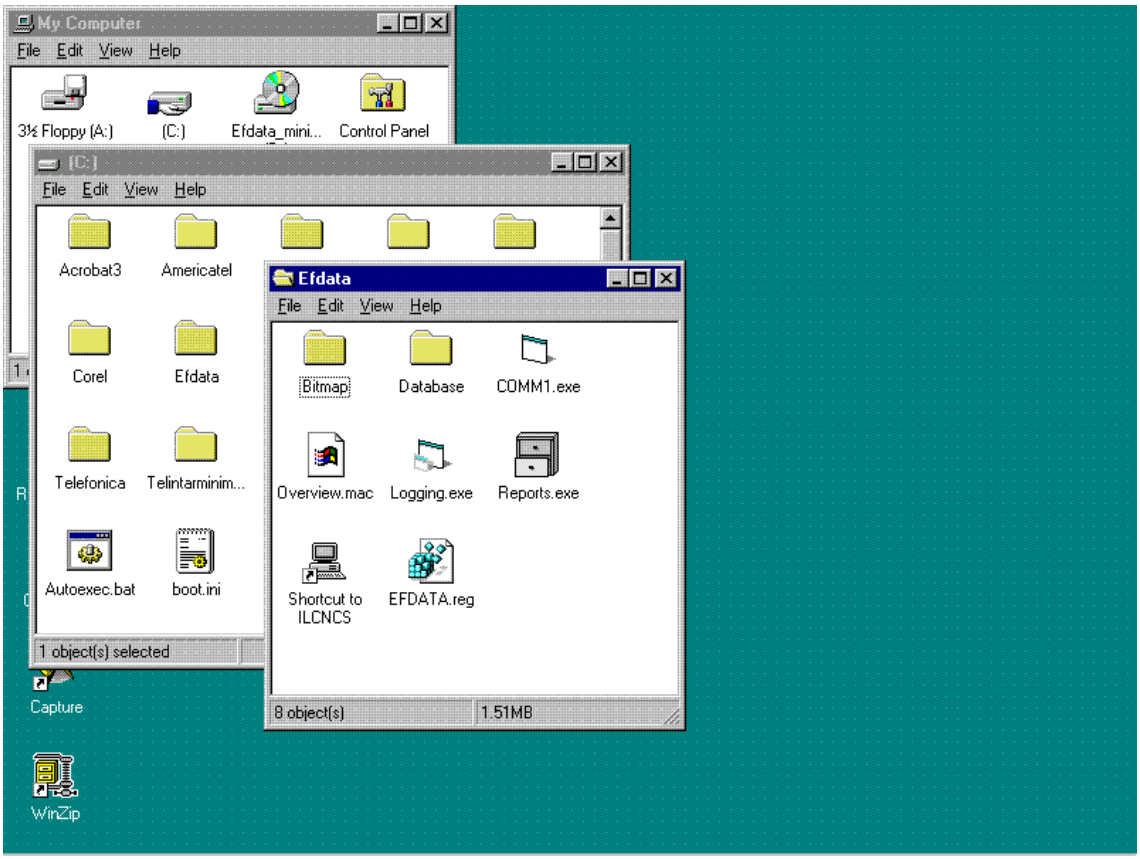
Create a new file as follows:

Command	Response
Click on	NEW FILE
Name New File	EFData

Perform the following:

Command	Response
Locate: SITE.REG and OVERVIEW.MAC	Files are located on MiniMAC CD or backup floppy disk.
Copy: SITE.REG and OVERVIEW.MAC	Place files in new EFData folder.
Create new folders:	Name folders: BITMAP and DATABASE
Place new folders.	Put new folders in the site directory
Copy specific files in new site directory: (Found in C:\Programs Files\ILCNCS)	Copy: COMM1.EXE REPORTS.EXE LOGGING.EXE
Create shortcut for ILCNCS	Place shortcut in site directory. (Drag with right mouse button and choose shortcut.)

Ensure to double-click on the SITE.REG file. Program may fail to function.



Note: When completed there will be six files and two file folders located in the SITE directory.

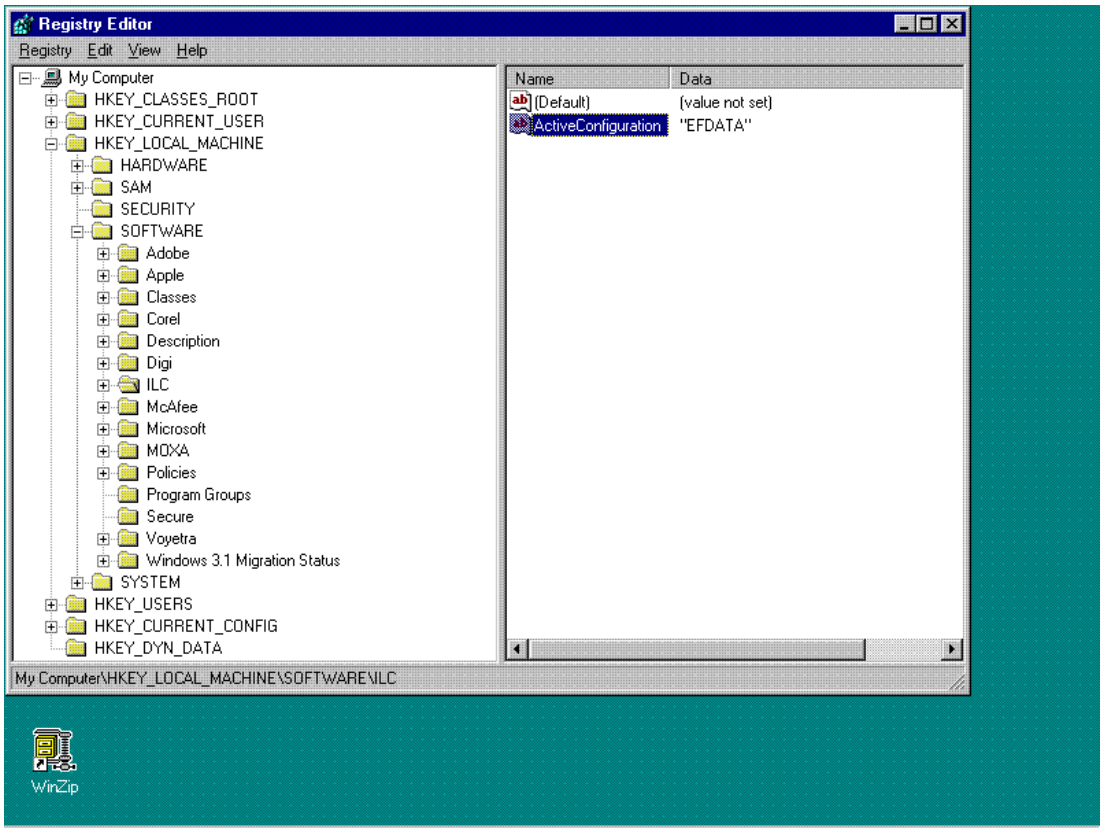
3.6 Verify ActiveConfiguration File Folder

Note: ActiveConfiguration is treated as one word. Do not add a space, program will not function.

Perform the following:

Command	Response
Go to	DOS Prompt
Type	REGEDIT
Go to	LOCAL MACHINE/SOFTWARE/ILC
Open	ILC File Folder
Verify String	ActiveConfiguration “EFData”

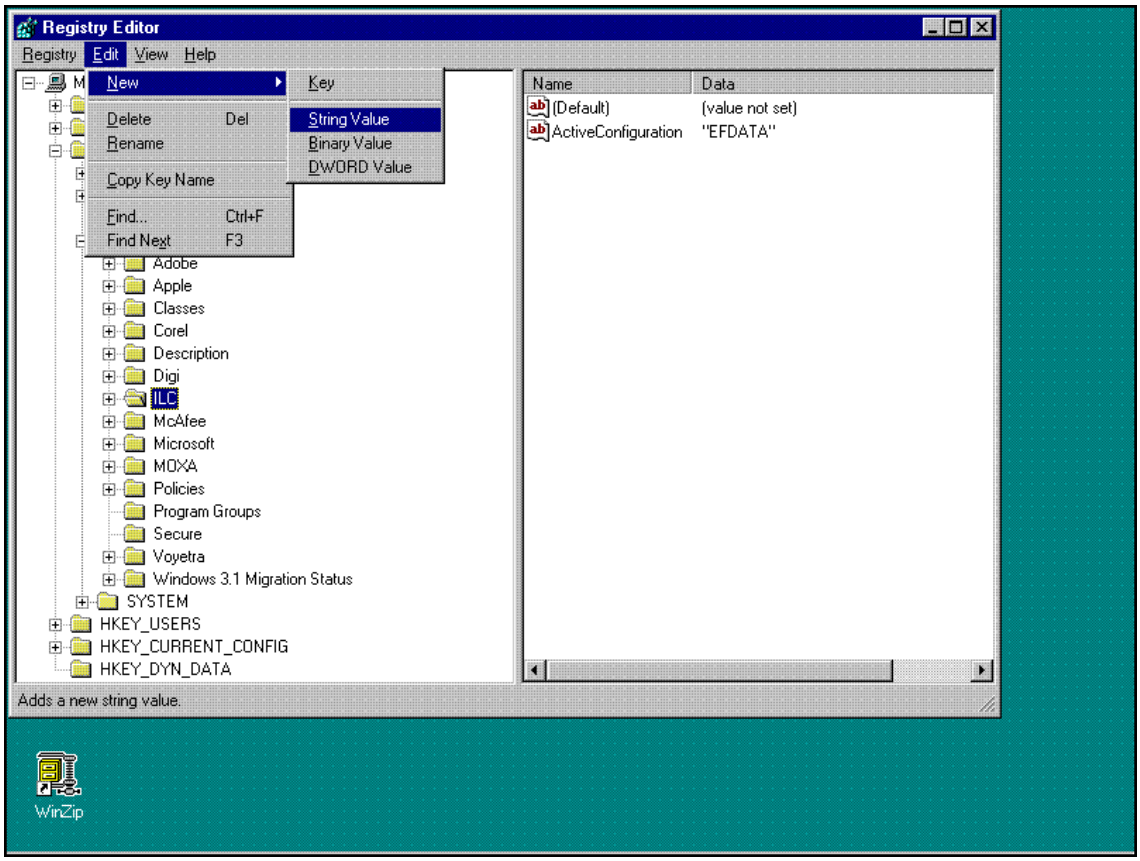
Note: The system name and the active user name shall be identical. (This is located under REGEDIT.ILC\Adaptive Broadband\Parameters.)



3.6.1 Create ActiveConfiguration File

If **ActiveConfiguration** string is not present, perform the following:

Command	Response
Go to	EDIT
Click on	NEW
Click on	STRING VALUE
Type	ActiveConfiguration
<ENTER>	
Double Click	NEW STRING
Type	Adaptive Broadband
<ENTER>	
Restart Computer	



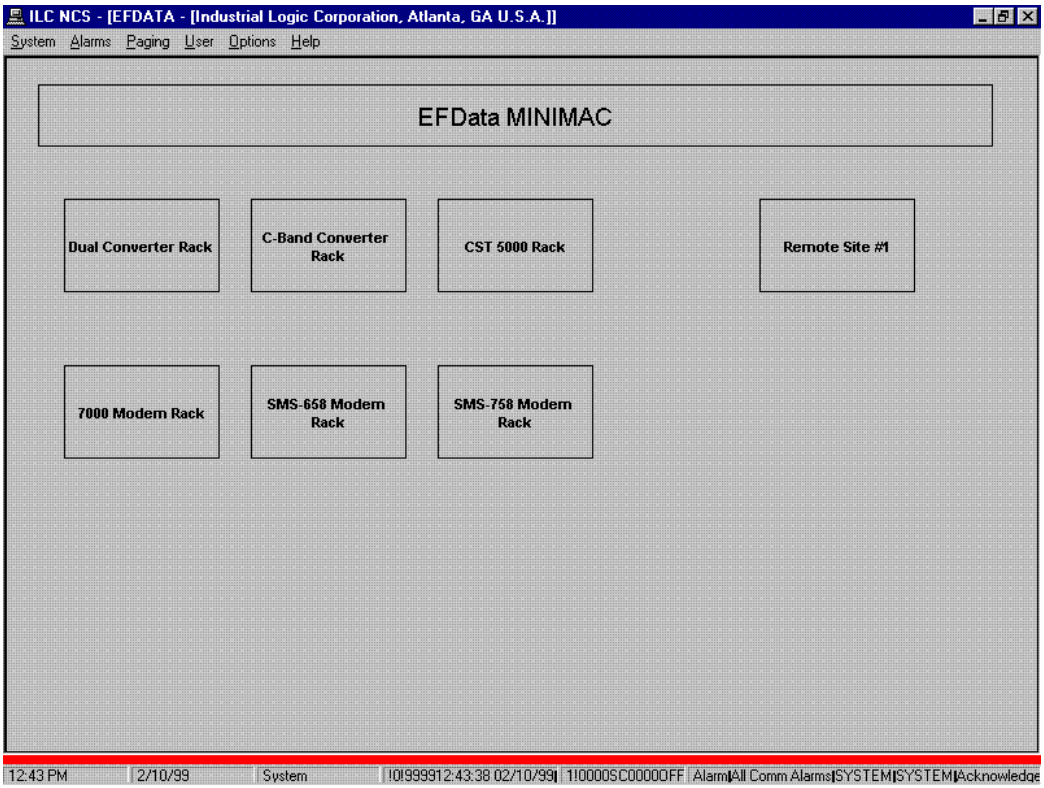
3.7 Run MiniMAC Program

Start MiniMAC program as follows:

Click on: ILCNCS shortcut
or
Go to: Start\Programs\ILCNCS

Observe the three program windows at the bottom of the screen.

- ILCNCS
- COMM1
- Logging



Note: When the program is initiated, it will require 15 minutes (approximately) for the polling sequence to communicate with all the devices. Faults, alarms, communication alarms will not be accurate until the polling sequence has completed one cycle.

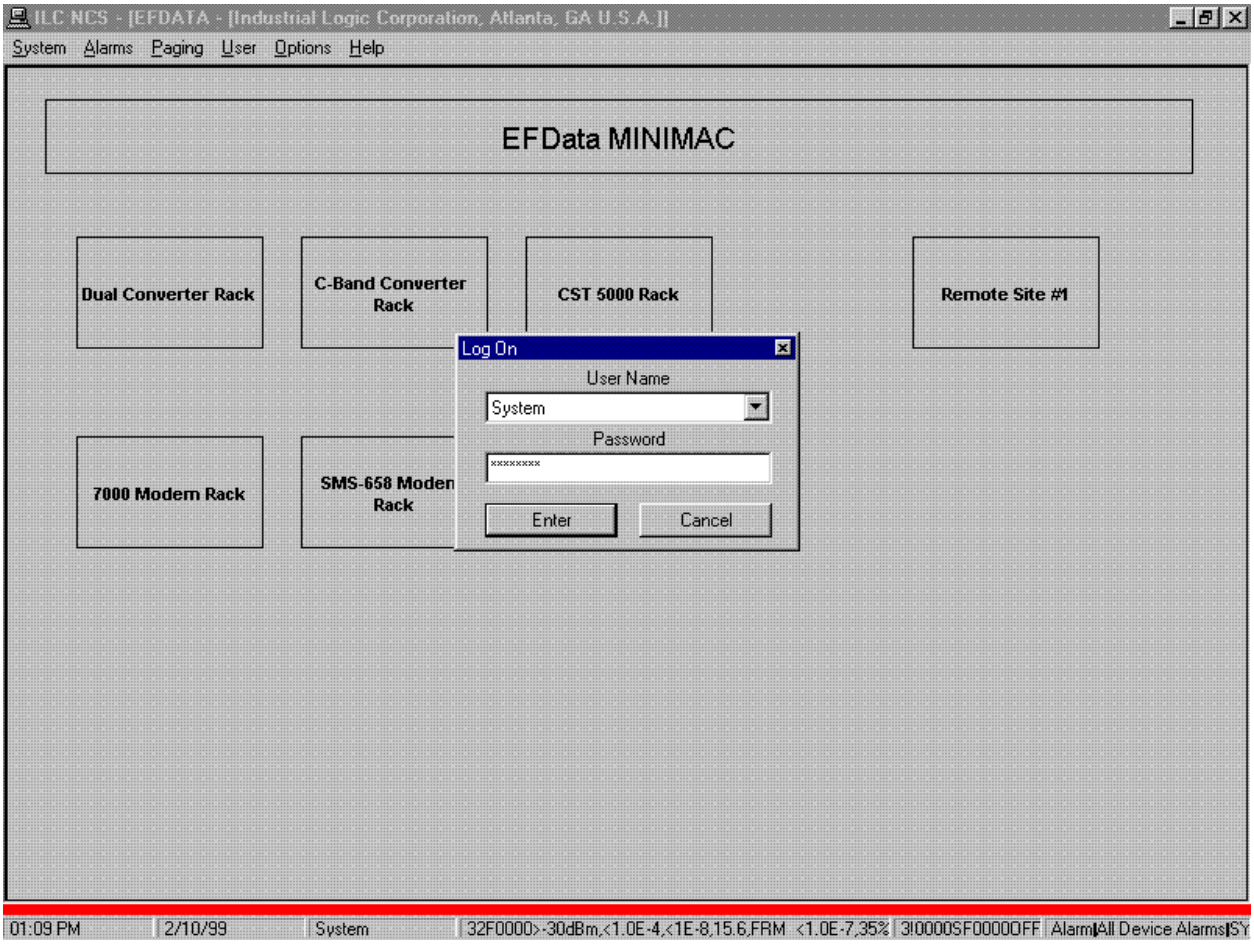
3.8 User Login

Log on as a user. From the drop-down menu, perform the following:

Command	Response
Select	USER
Select	LOGON
Select	SYSTEM
Type	Password
<ENTER>	
Create Password for additional users	

CAUTION

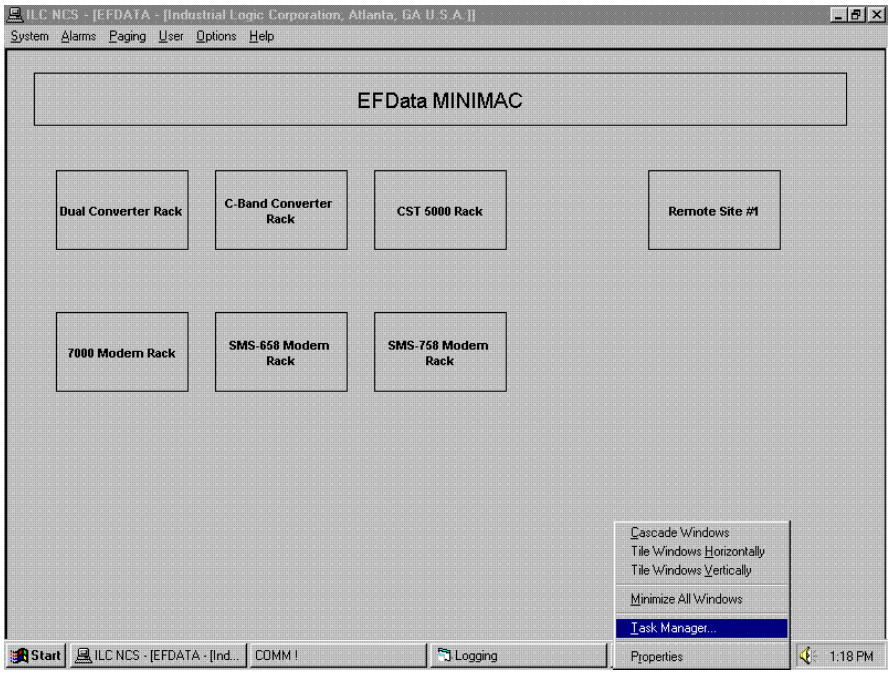
Default Password is MINIMAC for system user. It is recommended that the password be changed for user preference and security purposes. Login passwords are case sensitive. Incorrect password or entry can prevent the system from operating.



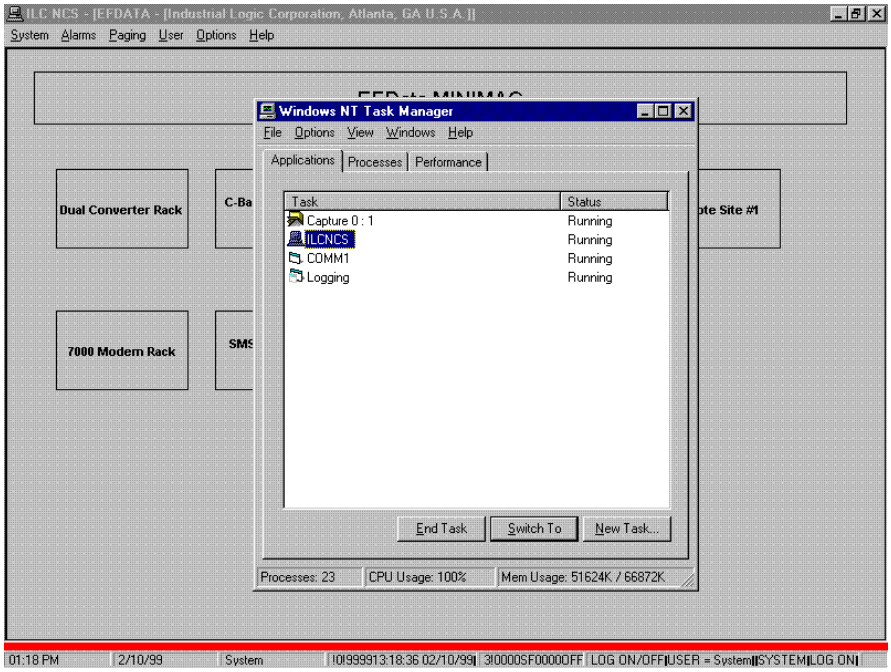
3.9 Exit MiniMAC Program

From the Task Bar located at the bottom of the screen, use the right-mouse button to bring up the TASK MANAGER.

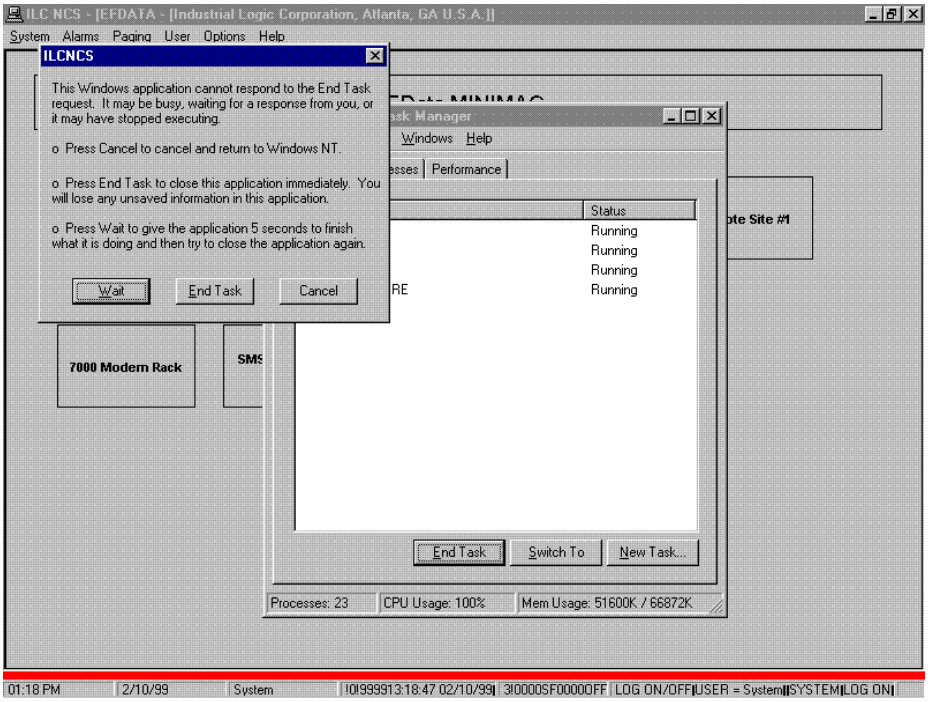
Exit from the program using the TASK MANGER.



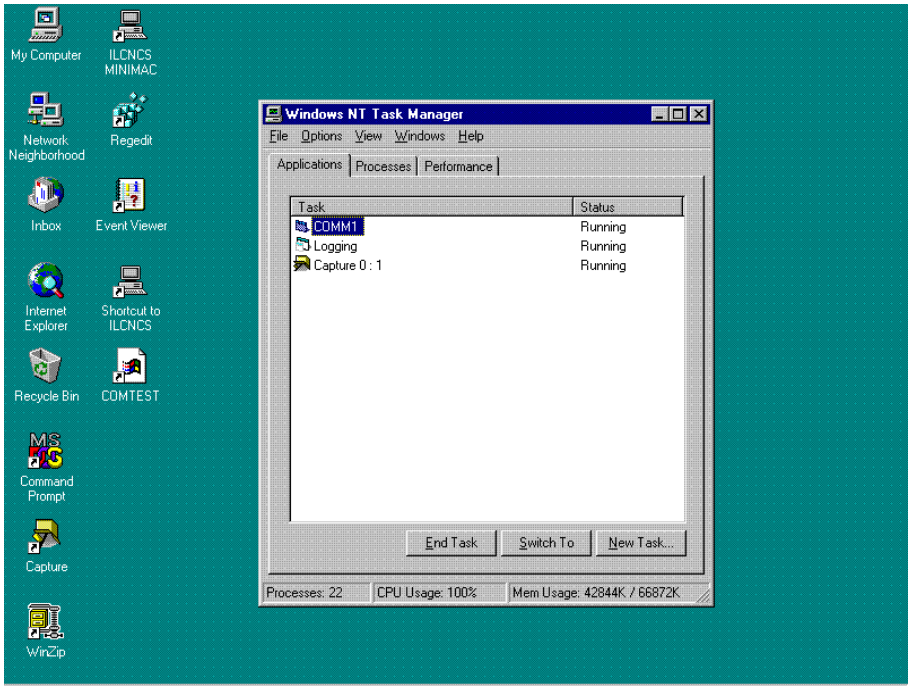
Select ILCNCS and Click on: END TASK.



When the ILCNCS task window appears; CLICK on: END TASK.



Continue to close the programs including COMM1 and LOGGING.



Close the Task Manager window.

2.1 Unpacking

The MiniMAC system and the installation and operation manuals are packaged in pre-formed, reusable, cardboard cartons containing foam spacing for maximum shipping protection

Do not use any cutting tool that will extend more than 1 inch (2.5 cm) into the container. This could cause damage to the equipment.

Unpack the MiniMAC System as follows:

1. Cut the tape at the top of the carton indicated by OPEN THIS END.
2. Remove the cardboard/foam space covering the unit.
3. Remove the unit, manual, and power cord from the carton.
4. Save the packing material for storage or reshipment purposes.
5. Inspect the equipment for any possible damage incurred during shipment.
6. Check the equipment against the packing list to ensure the shipment is correct.

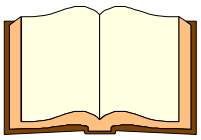
2.2 Equipment Inspection

2.2.1 Included Equipment

A typical MiniMAC System contains the Windows NT™ and MiniMAC program software, cables, and the following components:

Notes:

1. Parts are not drawn to scale.
2. Because each installation can be customized, this manual will provide instructions for a typical MiniMAC System installation.

QTY	Description
1	MiniMAC System (with MiniMAC software installed) 
1	Installation Manual 

QTY	Description
1	Serial Adapter with manual 
1	Rainbow Hardware Key 

2.3 Fabrication of Remote Cables

Refer to (Table 2-1) for a listing of cables that can be fabricated for the MiniMAC system.

Table 2-1. Fabrication of Remote Cables

Cable (From/To)	Pin Configuration	Reference
Star Gate RS-485 (2-wire) MiniMAC to Remote	9-pin to 9-pin	Figure 2-1
Star Gate RS-485 (2-wire) MiniMAC to ASYNC	9-pin to 25-pin	Figure 2-2
Remote Site RS-485 (2-wire) Device Remote to ASYNC	9-pin to 25-pin	Figure 2-3
Remote Site RS-485 (2-wire) Wire ASYNC to Dual Remote	25-pin to 9-pin	Figure 2-4
Star Gate RS-485 (2-wire) MiniMAC to RSU-503R Rack Switch Cable	9-pin to 25-pin	Figure 2-5
Star Gate RS-485 (2-wire) MiniMAC to Remote	9-pin to 26-pin Circular	Figure 2-6
ESC ASYNC RS-485 (2-Wire) Remote Y-Cable	25-pin to 9-pin to 26-pin circular	Figure 2-7
Star Gate RS-232 MiniMAC Cables		Table 2-2
MOXA to Modem (or Switch Remote) Port Cable RS-485 (4-wire)	25-pin to 9-pin	Table 2-3
MOXA to ASYNC Port (ESC) Cable RS-422 (4-wire)	25-pin to 25-pin	Table 2-3
MOXA RS-232 MiniMAC Cables		Table 2-4

Star Gate Cable End DB9 Male Pin	Signal Name (Relative to Star Gate)	Device Remote DB9 Male Pin
2,7	RX-, TX-	5,9
4,9	TX+, RX+	8,4

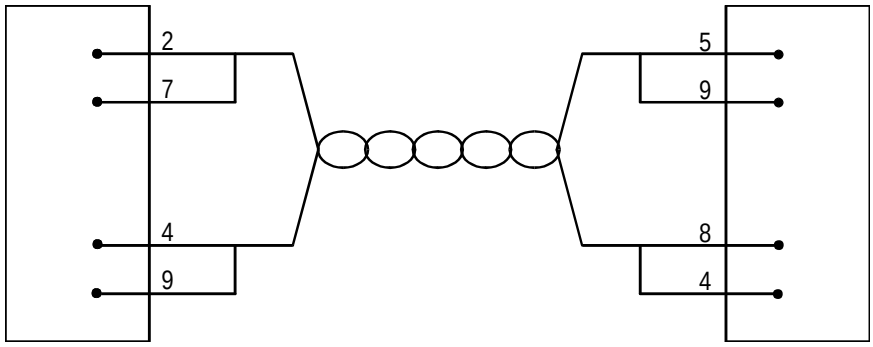


Figure 2-1. Star Gate RS-485 (2-Wire) MiniMAC to Remote

Star Gate Cable End DB9 Male Pin	Signal Name (Relative to Star Gate)	ASYNC DB25 Male Pin
2,7	RX-, TX-	2, 3
4,9	TX+, RX+	14, 16

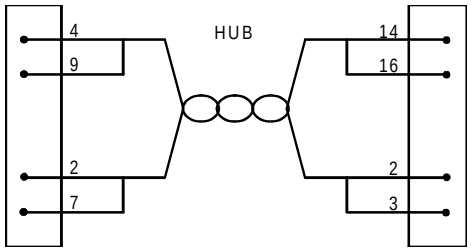


Figure 2-2. Star Gate RS-485 (2-Wire) MiniMAC to ASYNC

Device Remote DB9 Male Pin	Signal Name (Relative to Star Gate)	ASYNC Cable End DB25 Male Pin
5, 9	RX-, TX-	2, 3
4, 8	TX+, RX+	14, 16

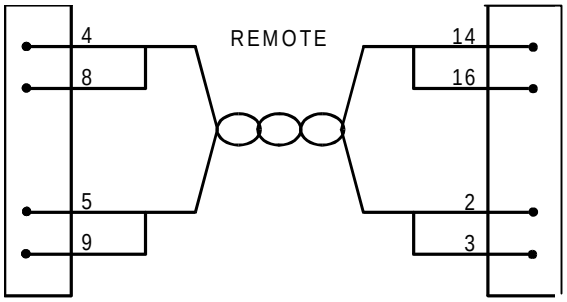


Figure 2-3. Remote Site RS-485 (2-Wire) Device Remote to ASYNC

ASYNC Cable End DB25 Male Pin	Signal Name (Relative to Star Gate)	Device Remote DB9 Male Pin
2, 3	RX-, TX-	5, 9
14, 16	TX+, RX+	4, 8

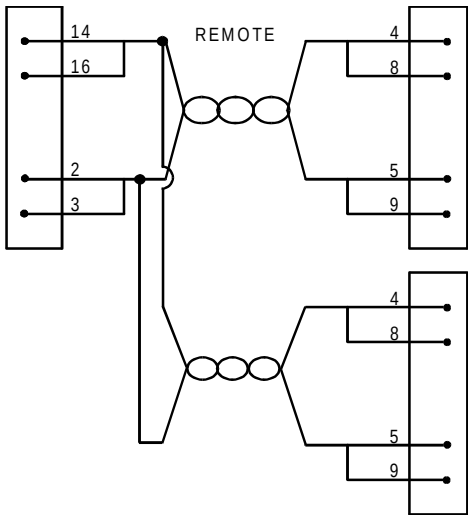


Figure 2-4. Remote Site RS-485 (2-Wire) ASYNC to Dual Remote

Star Gate Cable End DB9 Male Pin	Signal Name (Relative to Star Gate)	Device Remote DB25 Male Pin
2, 7	RX-, TX-	7, 19
4, 9	TX+, RX+	5, 18

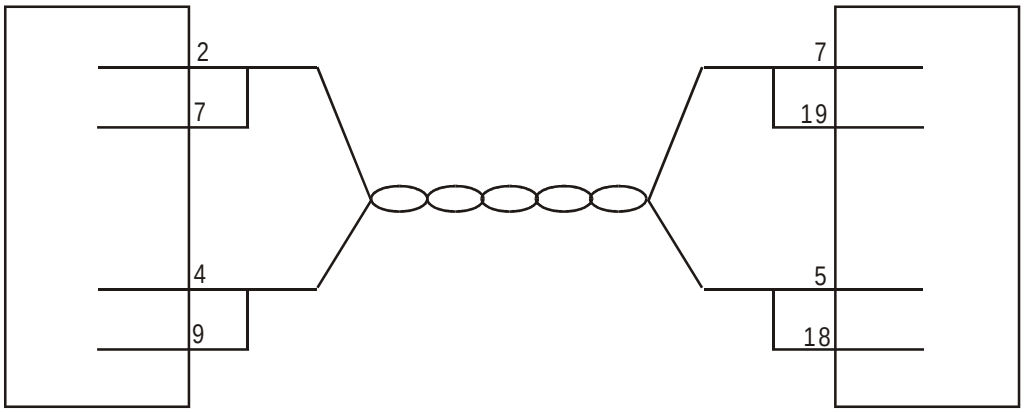


Figure 2-5. Star Gate RS-485 (2-Wire) MiniMAC to RSU-503 Rack Switch Cable

Star Gate Cable End DB9 Male Pin	Signal Name (Relative to Star Gate)	Device Remote RSU-503 or RFT 26-Pin Male Circular
2, 7	RX-, TX-	Pin B
4, 9	TX+, RX+	Pin C
	GND	Pin J

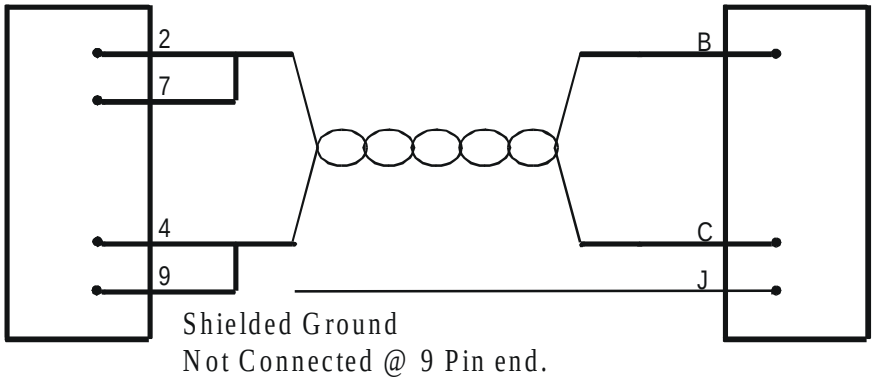


Figure 2-6. Star Gate RS-485 (2-Wire) MiniMAC to Remote

Remote Site Cable: ASYNC Port to Modem (or Switch) to RSU-503 Switch Cable RS-485 (2–Wire)				
ESC ASYNC (BOP, Y, or Switch) 25-Pin 'D' Type Male and Hood		**Modem or Switch Remote Port 9-Pin 'D' Type Male and Hood**		**RSU-503 or RFT 26-Pin Male Circular Outdoor Connector**
Pin 14	Jumpers to Pin 16	Pin 4	Jumpers to Pin 8	Pin C
Pin 2	Jumpers to Pin 3	Pin 5	Jumpers to Pin 9	Pin B

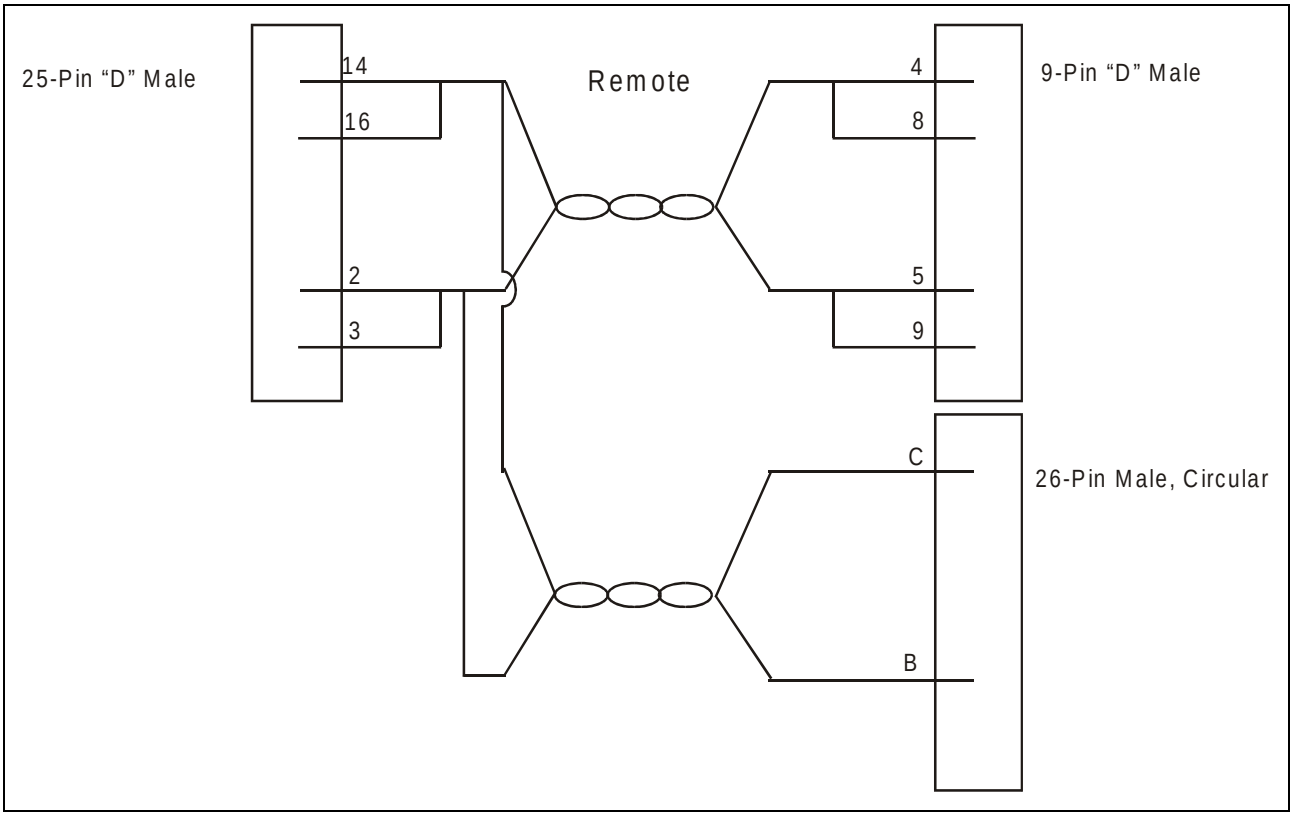


Figure 2-7. ESC ASYNC RS-485 (2-Wire) Remote Y-Cable

Table 2-2 . Star Gate RS-232 MiniMAC Cables

Star Gate Cable End DB25 Male Pin #	Signal Name (Relative to Star Gate)	Device Remote DB9 Male Pin #
RS-232 Connection Diagram MiniMAC to Remote		
1	Shield	
2	TX (Output)	3
3	RX (Input)	2
7	Ground	5
Star Gate Cable End DB25 Male Pin #	**Signal Name (Relative to Star Gate)**	**ASYNC Cable End DB25 Male Pin #**
RS-232 Connection Diagram MiniMAC to ASYNC		
1	Shield	
2	TX (Output)	3
3	RX (Input)	2
7	Ground	7

Table 2-3. MOXA to Modem (or Switch) Remote Port Cable RS-422 (4-Wire)

MOXA to Modem (or Switch) Remote Port Cable RS-485 (4-Wire)			
MOXA Port 1-8 25-Pin 'D' Type Male and Hood		**Modem (or Switch) Remote Port 9-Pin 'D' Type Male and Hood**	
Pin 3	TXB (+)	Pin 4	TX+
Pin 16	TXA (-)	Pin 5	TX-
Pin 2	RXB (+)	Pin 8	RX+
Pin 14	RXA (-)	Pin 9	RX-
Pin 7	GND	Pin 1	GND
MOXA to Asynchronous Port (ESC) Cable RS-422 (4-Wire)			
MOXA Port 1-8 25-Pin 'D' Type Male and Hood		**ASYNC ESC on Switch or BOP 25-Pin 'D' Type Male and Hood**	
Pin 3	TXB (+)	Pin 14	TX+
Pin 16	TXA (-)	Pin 2	TX-
Pin 2	RXB (+)	Pin 16	RX+
Pin 14	RXA (-)	Pin 3	RX-
Pin 7	GND	Pin 7	GND

Table 2-4. MOXA RS-232 MiniMAC Cables

RS-232 Connection Diagram, MiniMAC to Remote		
MOXA Cable End DB 25-Pin Male	**Signal Name (Relative to MOXA)**	**Device Remote DB 9-Pin Male**
1	Shield	
2	TX (Output)	3
3	RX (Input)	2
7	Ground	5
MOXA Cable End DB 25-Pin Male	**Signal Name (Relative to MOXA)**	**Device Remote DB 25-Pin Male**
RS-232 Connection Diagram, MiniMAC to RSU-503R Switch		
2	TX (Output)	2
3	RX (Input)	3
7	Ground	7

2.4 Rack Installation

Note: System installation varies from user to user depending on individual systems.

The following rack installation (Figure 2-8) is typical and is identified as: Adaptive Broadband MiniMAC. All installation requirements are explained in this system.

Install the furnished CPU cable from the port expander (Star Gate™, MOXA,™ or equivalent) to the MiniMAC CPU (Figure 2-9).

Install the Rainbow Hardware Key to the MiniMAC CPU at the LPT1 position. If the MiniMAC system has a printer, install the printer cable to the Rainbow Hardware Key at LPT1.

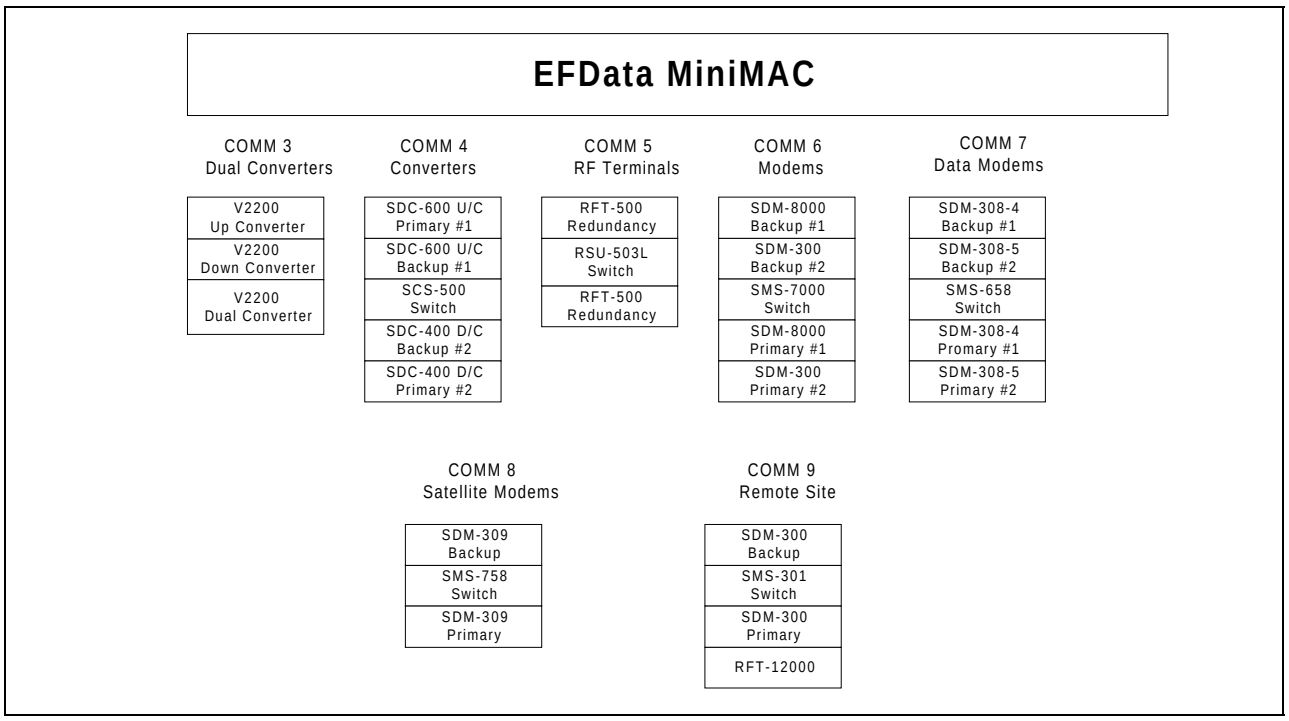


Figure 2-8. Rack Arrangement (Typical)

2.4.1 COMM 3 Installation

The COMM 3 rack is identified as the V2200 Dual Converters. Install the converters as follows (Figure 2-9):

1. Go to the Utility System Menu, set all converters as follows:

   - Baud Rate: 9600 bit/s
   - Parity: Even
   - Remote: RS-485 (2-wire operation)

2. Install a V2200 Dual Converter into the first rack slot. The converter should be identified as the Up Converter.

   - Side A will be Address 1
   - Side B will be Address 2

3. Install a V2200 Dual Converter into the second rack slot. The converter should be identified as the Down Converter.

   - Side A will be Address 3
   - Side B will be Address 4

4. Install a V2200 Dual Converter into the third rack slot. The converter should be identified as the Dual Converter.

   - Side A will be Address 5
   - Side B will be Address 6

5. Attach a ribbon cable (customer-furnished) to the REMOTE port of each converter. Connect the ribbon cable to a customer-fabricated cable (Figure 2-5) then to the MiniMAC port expander in the COMM 3 position.

2.4.2 COMM 4 Installation

Note: Adaptive Broadband model numbers are shown as the basic number, such as SDC-600. Installation of SDC-600A units can replace the older units.

The COMM 4 rack is identified as the C-Band Converters (Figure 2-9). Install the backup converters adjacent to the switch.

1. Set all converters as follows:

Command	Response
Go to	Utility System Menu
Set Baud Rate	9600 bit/s
Set Parity	EVEN
Set Remote Operation	RS-485 (2-wire)

2. Install an SDC-600 Converter into the first rack slot. The converter should be identified as the Up Converter, Primary #1. Set the Remote Address to 1.

3. Install an SDC-600 Converter into the second rack slot. The converter should be identified as the Up Converter, Backup #1. Set the Remote Address to 9.

4. Install an SCS-500 switch into the third rack slot. (This unit will permit switching from Primary to Backup units.)

5. Install an SDC-400 Converter into the fourth rack slot. The converter should be identified as the Down Converter, Backup #2. Set the Remote Address to 10.

6. Install an SDC-400 Converter into the fifth rack slot. The converter should be identified as the Down Converter, Primary #2. Set the Remote Address to 2.

7. Attach a ribbon cable to the REMOTE port of each converter. Connect the ribbon cable to a customer-fabricated cable (Figure 2-5) then to the MiniMAC port expander in the COMM 4 position.

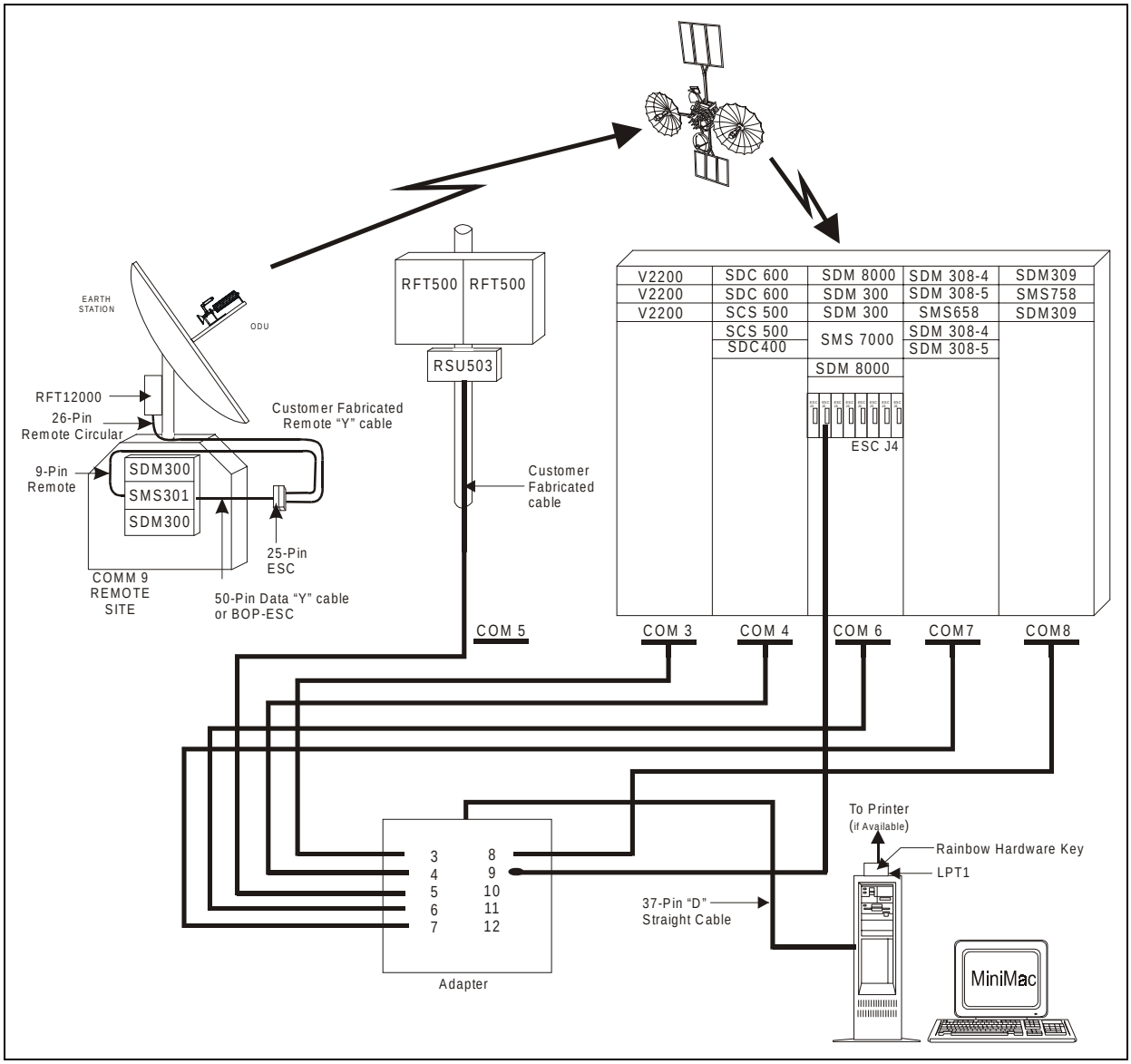


Figure 2-9. Typical MiniMAC Installation

2.4.3 COMM 5 Installation

The COMM 5 Rack is identified as the CST-5000 Rack (Figure 2-9). Install the equipment as follows:

Note: The RFT-500 Redundancy System is an outside installation. Refer to the Installation and Operation Manual for the proper procedures.

1. Install the RFT-500 Redundancy System.

   - Set RFT A to Address 2.
   - Set RFT B to Address 3.

2. Install an RSU-503L Switch. Set the switch as follows:

Command	Response
Set Baud Rate	9600 bit/s
Set Remote Address	1
Set Parity	EVEN
Set Remote Operation	RS-485 (2-wire)

3. Attach a customer-fabricated cable to the REMOTE port (J16) of the RSU Switch. Connect the 9-pin end to the MiniMAC port expander in the COMM 5 position.

2.4.4 COMM 6 Installation

The COMM 6 Rack is identified as the SDM-8000 Modem Rack (Figure 2-9). Install the equipment as follows:

1. Install an SDM-8000 Modem into the first rack slot. The modem should be identified as the Backup #1. Set Remote Address at 9. Set all modems as follows:

Command	Response
Go to	Utility System Menu
Set Baud Rate	9600 bit/s
Set Parity	EVEN

2. SDM-8000 M&C Board Only – Set jumpers as follows:

Command	Response
Remote	485
2/4 wire	2-wire

Note: The SDM-300 Modem shall have a 50-pin overhead data interface connector at the J8 port. Any other connector will not mate with the SMS-7000 switch.

4. Install an SDM-300 Modem into the second rack slot. The modem should be identified as Backup #2. Set the Remote Address to 10.

5. Install an SMS-7000 Switch into the third rack slot. (This unit will permit switching from Primary to Backup units.) Set the following:

Command	Response
Set Remote Address	11
Set Baud Rate	9600 bit/s
Set Parity	EVEN
Set Remote Operation	RS-485 (2-wire)

6. Install an SDM-8000 Modem into the fourth rack slot. The modem should be identified as Primary #1. Set the Remote Address to 1.

7. Install an SDM-300 Modem into the fifth rack slot. The modem should be identified as Primary #2. Set Remote Address to 2.

8. Attach a ribbon cable to the REMOTE port of each modem and the switch (Modem Control). Connect a customer-fabricated cable (Figure 2-5) from the SMS-7000 Switch USER PREMOTE to the MiniMAC port expander in the COMM 6 position.

2.4.5 COMM 7 Installation

The COMM 7 Rack is identified as the SDM-658 Modem Rack (Figure 2-9). Install the equipment as follows:

1. Modem M&C Boards – Set Switch Pack #1 as follows:

Command	Response
Set Baud Rate	9600 bit/s
Set Parity	EVEN

2. Set jumpers as follows:

Command	Response
Set Remote Operation	485

2. Install an SDM-308-4 Data Modem into the first rack slot. The modem should be identified as the Backup #1. Set Switch Pack #2 (M&C Board) Remote Address to 9.

3. Install an SDM-308-5 Data Modem into the second rack slot. The modem should be identified as the Backup #2. Set Switch Pack #2 (M&C Board) Remote Address to 10.

4. Install an SMS-658 Switch into the third rack slot. (This unit will permit switching from Primary to Backup units.) Set the following:

Command	Response
Set Remote Address	11
Set Baud Rate	9600 bit/s
Set Parity	EVEN
Set Remote Operation	RS-485 (2-wire)

5. Install an SDM-308-4 Data Modem into the fourth rack slot. The modem should be identified as Primary #1. Set Switch Pack #2 Remote Address to 1.

6. Install an SDM-308-5 Data Modem into the fifth rack slot. The modem should be identified as Primary #2. Set Switch Pack #2 Remote Address to 2.

7. Attach a ribbon cable (customer-furnished) to the REMOTE port of each data modem and the switch. Connect a customer-fabricated cable from the switch to the MiniMAC port expander in the COMM 7 position.

2.4.6 COMM 8 Installation

The COMM 8 Rack is identified as the SMS-758 Modem Rack (Figure 2-9). Install the equipment as follows:

1. Modem M&C Boards – Set Switch Pack #1 as follows:

Command	Response
Set Baud Rate	9600 bit/s
Set Parity	EVEN

2. Set jumpers as follows:

Command	Response
Set Remote Operation	485

3. Install an SDM-309 Satellite Modem into the first rack slot. Identify the SDM-309 as Backup #1. Set Switch Pack #2 Remote Address to 9.

4. Install an SDM-758 Switch into the second rack slot. Set the following:

Command	Response
Set Remote Address	11
Set Baud Rate	9600 bit/s
Set Parity	EVEN
Set Remote Operation	RS-485 (2-wire)

5. Install an SMS-309 Satellite Modem into the third rack slot. Identify the SDM-309 as Primary #1. Set Switch Pack #2 Remote Address to 1.

6. Attach a ribbon cable to the REMOTE port of each satellite modem and the switch. Connect a customer-fabricated cable from the switch to the MiniMAC port expander in the COMM 8 position.

2.4.7 COMM 9 Installation

The COMM 9 Rack is identified as the REMOTE SITE (Figure 2-9). Install the equipment as follows:

1. Install the RFT-12000 Terminal as specified in the Installation and Operation Manual.

Command	Response
Set Remote Address	12
Set Remote Communications Jumpers	RS-485 (2-wire)

Note: The satellite modems and switch should be installed in a rack and protected from the environment.

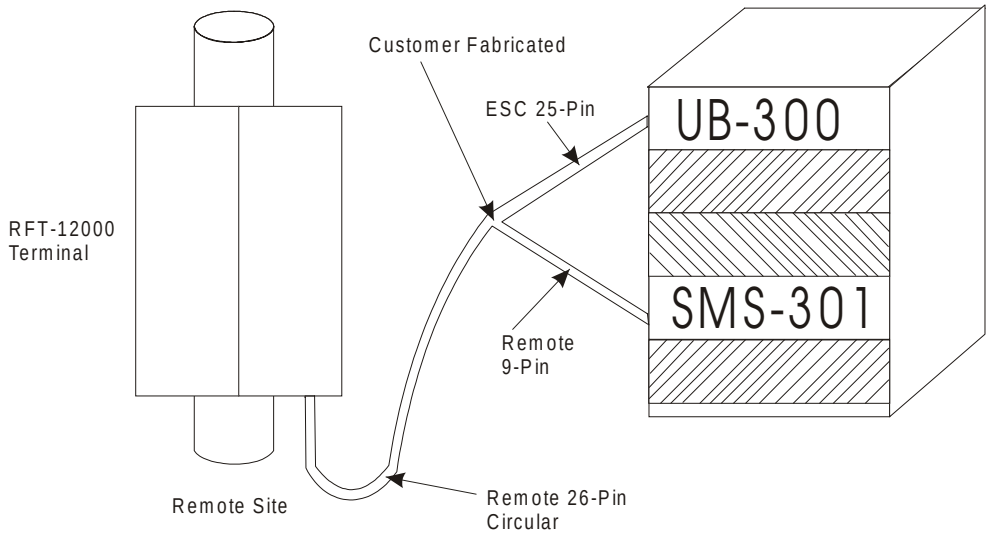
2. Install an SDM-300 Satellite Modem and identify as Primary #1. Set the Remote Address to 1.

3. Install an SMS-301 Switch. Set the Remote Address to 11.

4. Install an SDM-300 Satellite Modem and identify as Backup #1. Set the Remote Address to 9.

5. Install an UB-301 Breakout Panel as specified in the Installation and Operation Manual.

6. Attach a customer-fabricated “Y” cable to the REMOTE port of the SMS-301 Switch, UB-300 (BOP), and the RFT-12000 Terminal.



7. At the local site, housing the MiniMAC, connect a customer-fabricated 25-pin D male cable from the SMS-7000 ESC connector, identified as Primary #2 to the MiniMAC port expander in the COMM 9 position (Figure 2-9).

2.5 Windows NT™ Installation

Refer to Appendix A for installation applicable to the MiniMAC.

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Figure 1-1. MiniMAC System

The system uses a Pentium™ equipped computer operating within a Windows NT™ environment to supply real-time status and control for the Adaptive Broadband components. Windows NT is a multi-tasking and multithread operating system that provides MiniMAC with graphical user interface.

MiniMAC screens and data can be accessed via remote access network lines. This ability to network additional computers locally allows LAN users (with the appropriate MiniMAC software) to access the MiniMAC RMS. The MiniMAC system can be upgraded at any time via the remote access network link.

1.1.1 Main Features

The following describes the main features of the MiniMAC rack management system:

- Compatible with Adaptive Broadband Components
- Complete display of equipment parameters
- Full display of fault status
- Comprehensive report generator
- Available for SCPC STAR networks
- ACL port expanders (or MOXA port expanders)
- Windows NT™ based operating system
- Intel Pentium™ equipped-computer

1.1.2 Port Expanders

The port expander (Table 1-1) should be used in configuring the rack equipment (Figure 1-2). Each unit within the rack will be connected by a ribbon cable. The ribbon cable connects to J2 of the switch (Modem Control). An adapter cable (Table 1-3) connects from J1 (User Remote) of the switch to the selected port expander.

For remote locations, an adapter cable (Table 1-3) is connected from the appropriate ESC (J4) of the switch's Breakout Panel (BOP) to the selected port expander.

Table 1-1. Port Expanders

Port Expanders	Description	Reference
Star Gate	The Star Gate adapter is an intelligent expansion board that adds serial ports to an IBM PC/AT or compatible computer. The Start Gate relieves the PC of communication responsibilities while supporting up to eight EIA-232, EIA-422, or EIA-485 ASYNC devices. .	Figure 1-3
MOXA	The MOXA is an intelligent 8 to 32 port RS-422 serial interface board that provides high performance serial I/O. The MOXA allows up to 128 ports to be used in one ISA/EISA 286/386/486/Pentium™ based PC system.	Figure 1-4

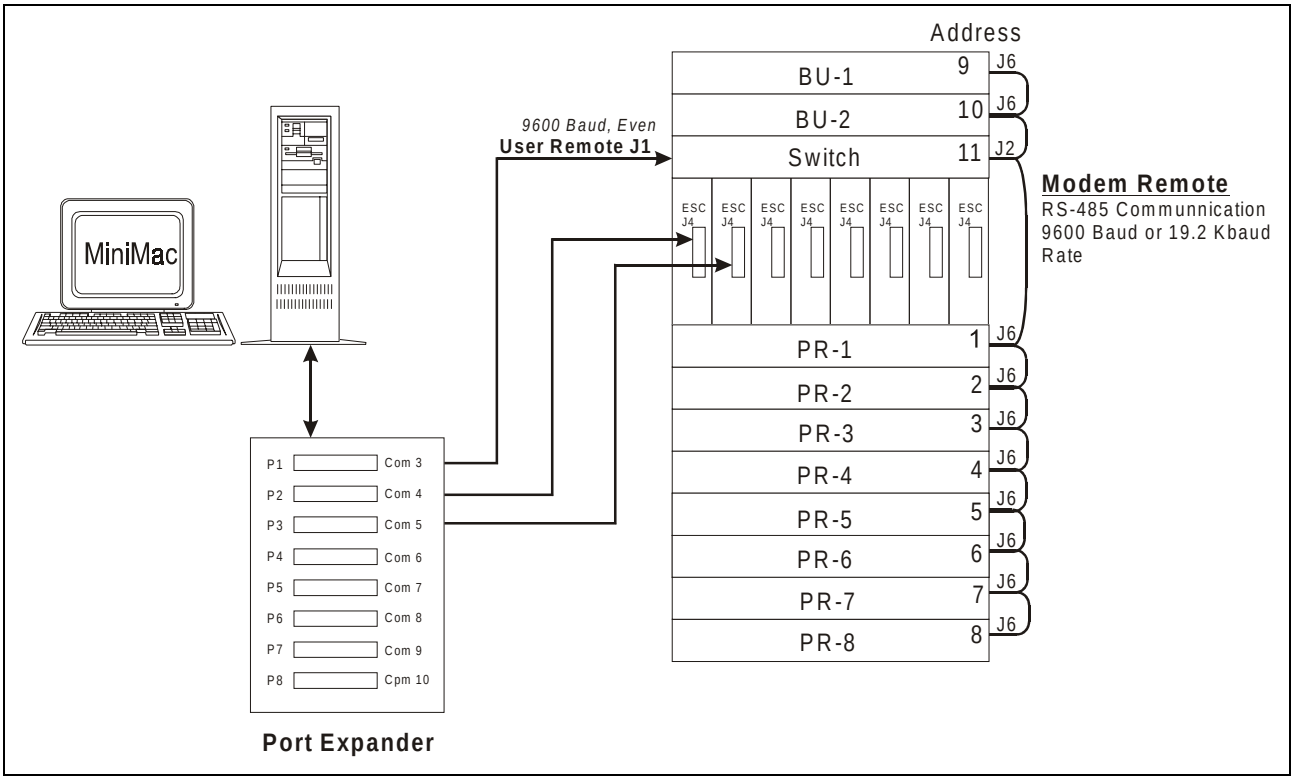

Figure 1-2. Configuring the Rack Equipment (Typical)

ACL Port Expanders

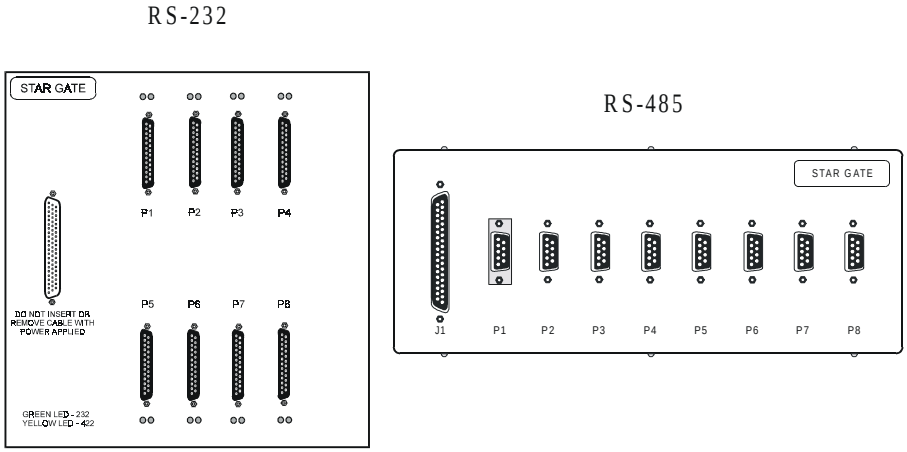

Figure 1-3. ACL Port Expanders (RS-232 and RS-485)

Moxa Port Expanders

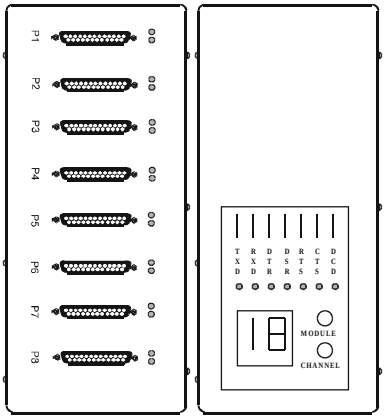

Figure 1-4. MOXA Port Expander

1.2 Description

1.2.1 Overview Window

The overview window supplies information for all configured racks.

- Green – Normal operation (when configured equipment is in normal operation.)
- Red or Yellow – Alarm or Fault (the operator is alerted of transmit, receive, and switch alarms by the alarm or fault.)
- Orange – if communication to a device is lost.

1.2.2 Equipment Screen Window

The equipment screen window provides a graphical representation of the equipment, with all LEDs and indicators being completely functional.

The detail of every event is available, as well as isolating specific equipment events. The equipment screen window allows the operator to view the same details of control status and configurations that are available from the front panel of the equipment.

1.2.3 Data and Report Generation

System data can be sorted and printed as a report or displayed on the monitor. The data log is maintained on the following items:

- Time of log entry
- Faults and alarms
- Equipment Commands
- Equipment index number (location)
- Detected changes in configuration and status
- System events

1.3 Applications

Note: This system can be used in the C-Band or Ku-Band environment.

System navigation and control are accomplished through simple point-and-click options, allowing intuitive system control. The standard system allows control of 50 to 100 Adaptive Broadband components, ranging from modems to RF terminals. Custom systems can be configured Using Adaptive Broadband components, allowing for a wide range of hub configurations (including SCPC star networks).

For star networks applications, MiniMAC can use the Asynchronous Channel Unit overhead available on Adaptive Broadband modems. This overhead channel allows MiniMAC to monitor and control remote site equipment in a manner transparent to the customer data, allowing for continuous communications between MiniMAC and the remote sites.

Refer to (Table 1-2) for Adaptive Broadband components that can be monitored and controlled when used in conjunction with the MiniMAC system.

Table 1-2. Adaptive Broadband Components

Modem	Converters	Switches	Terminals
SDM-300	SDC-400	RSU-503L	RFT-500
SDM-300A	SDC-400A	RC-1150	RFT-12000
SDM-308-4	SDC-600	SMS-301	
SDM-308-5	SDC-600A	SCS-500	
SDM-309	SDC-1200	SMS-658	
SDM-650	SDC-1200A	SMS-758	
SDM-6000	SDC-1400	SMS-7000	
SDM-8000	SDC-1400A		
SDM-9000	V2200		

1.4 Environmental Specifications

Refer to (Table 1-3) for environment specifications.

Table 1-3. Environment Specifications

Parameter	Specification
Temperature	5 to 35°C (41 to 95°F)
Humidity	0 to 80%, noncondensing

Warranty Policy

This Adaptive Broadband product is warranted against defects in material and workmanship for a period of one year from the date of shipment. During the warranty period, Adaptive Broadband will, at its option, repair or replace products that prove to be defective.

For equipment under warranty, the customer is responsible for freight to Adaptive Broadband and all related custom, taxes, tariffs, insurance, etc. Adaptive Broadband is responsible for the freight charges **only** for return of the equipment from the factory to the customer. Adaptive Broadband will return the equipment by the same method (i.e., Air, Express, and Surface) as the equipment was sent to Adaptive Broadband.

Limitations of Warranty

The foregoing warranty shall not apply to defects resulting from improper installation or maintenance, abuse, unauthorized modification, or operation outside of environmental specifications for the product, or, for damages that occur due to improper repackaging of equipment for return to Adaptive Broadband.

No other warranty is expressed or implied. Adaptive Broadband specifically disclaims the implied warranties of merchantability and fitness for particular purpose.

Exclusive Remedies

The remedies provided herein are the buyer's sole and exclusive remedies. Adaptive Broadband shall not be liable for any direct, indirect, special, incidental, or consequential damages, whether based on contract, tort, or any other legal theory.

Disclaimer

Adaptive Broadband has reviewed this manual thoroughly in order that it will be an easy-to-use guide to your equipment. All statements, technical information, and recommendations in this manual and in any guides or related documents are believed reliable, but the accuracy and COMpleteness thereof are not guaranteed or warranted, and they are not intended to be, nor should they be understood to be, representations or warranties concerning the products described. Further, Adaptive Broadband reserves the right to make changes in the specifications of the products described in this manual at any time without notice and without obligation to notify any person of such changes.

If you have any questions regarding your equipment or the information in this manual, please contact the Adaptive Broadband Customer Support Department. (For more information, refer to the preface.)

MiniMAC
A Monitor & Control
Management System

Preface

About this Manual

Note: Effective April 29th, 1999, California Microwave, EFData changed its named to **Adaptive Broadband** to reflect its current world-wide applications.

This manual provides installation and operation information for the Adaptive Broadband MiniMAC Rack Management System. This is a technical document intended for earth station engineers, technicians, and operators responsible for the operation and maintenance of the MiniMAC.

Conventions and References Used in this Manual

Cautions and Warnings

CAUTION indicates a hazardous situation that, if not avoided, may result in minor or moderate injury. CAUTION may also be used to indicate other unsafe practices or risks of property damage.

WARNING indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury.

Metric Conversion

Metric conversion information is located on the inside back cover of this manual. This information is provided to assist the operator in cross-referencing English to Metric conversions.

Recommended Standard Designations

Recommended Standard (RS) Designations have been superseded by the new designation of the Electronic Industries Association (EIA). References to the old designations are shown only when depicting actual text displayed on the screen of the unit (RS-232, RS-485, etc.). All other references in the manual will be shown with the EIA designations (EIA-232, EIA-485, etc.) only.

Trademarks

Windows NT is a trademark of Microsoft Corporation.

Other product names mentioned in this manual may be a trademark or registered trademarks of their respective companies and are hereby acknowledged.

Related Documents

The following documents are referenced in this manual:

Adaptive Broadband *MiniMAC Operation Manual*

Reporting Comments or Suggestions Concerning this Manual

Comments and suggestions regarding the content and design of this manual will be appreciated. To submit comments, please contact the Adaptive Broadband Customer Support Department according to the following information.

Customer Support

Contact the Adaptive Broadband Customer Support Department for:

- Product support
- Information on returning a product
- Information on upgrading a product
- Product training
- Reporting comments or suggestions concerning manuals

An Adaptive Broadband Customer Support representative may be reached at:

Adaptive Broadband
Satellite Communications Division
Attention: Customer Support Department
2114 West 7th Place
Tempe, Arizona 85281 USA

(480) 333.2200 (Main Adaptive Broadband Number)
(480) 333.2161 (Main FAX No.)
(480) 333.2540 (Marketing FAX No.)

or, E-Mail can be sent to the Customer Support Department at:

service@adaptivebroadband.com

or, contact Adaptive Broadband Customer Support Department at the web site:

www. adaptivebroadband.com

To return an Adaptive Broadband product (in-warranty and out-of-warranty) for repair or replacement:

1. Request a Return Material Authorization (RMA) number from the Adaptive Broadband Customer Support Department.

   Be prepared to supply the Customer Support representative with the model number, serial number, and a description of the problem.

2. To ensure that the product is not damaged during shipping, pack the product in its original shipping carton/packaging.

3. Ship the product back to Adaptive Broadband. (Shipping charges should be prepaid.)

   For more information regarding the warranty policies, refer to the disclaimer page located behind the title page.

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