Clarinet SYSTEMS

EthIR LAN®
User Guide

EthIR LAN® User Guide

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FCC Rules and Regulations - Part 15

Warning: This device has been tested and found to comply with the limits for a Class B digital device pursuant to Part 15 of the Federal Communications Commissions Rules and Regulations. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a residential installation. 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:

. Increase the separation between the equipment and the electronics.
. Connect the equipment into an outlet on a circuit different from that of the laptops.
. Consult the dealer or an experienced radio technician for help.

FCC Radiation Exposure Statement

IMPORTANT NOTE: To comply with FCC RF exposure compliance requirements, the antenna used for this transmitter must be installed to provide a separation distance of at least 20cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter."

Caution: Changes or modifications not expressly approved by Clarinet Systems, Inc. could void the user's authority to operate the equipment.

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Chapter 1
Introduction

Introducing EthIR LAN

Clarinet EthIR LAN provides single and multiple infrared network access points allowing users to connect notebooks or handheld PCs to their network using safe, cordless infrared technology. Once installed, EthIR LAN is transparent to the user; that is you can receive and transmit information just as you would with a wired connection.

User Profile

This documentation is for IT Managers and Network Administrators. It assumes that as an EthIR LAN user you possess basic knowledge and expertise in the following networking areas:

- **Concepts** - such as network management
- **Structure** - network structure in general and your network structure in particular, including hardware, software, and topology
- **General standards and protocols** - such as 10/100Base-T and SNMP

How this Guide Is Organized

This *EthIR LAN User Guide* provides detailed instructions for installing, configuring and using EthIR LAN. It is comprised of this chapter and three additional chapters and appendices as follows:

- Chapter 2, *Installation*, provides information on the components that compose EthIR LAN and provides installation instructions for each component. In addition, it describes how to use EthIR LAN.
- Chapter 3, *Configuring EthIR LAN,* provides instructions for configuring the EthIR Switch, your user system, and connecting to EthIR LAN.
- Chapter 4, *ClarinetIR*, provides information on ClarinetIR freeware utility that helps your notebook, PocketPC, and Palm devices to connect to EthIR LAN system.

Appendices

APPENDIX A - instructs users on the procedures for installing the infrared drivers on Windows 95 notebooks that did not originally ship with the drivers.

APPENDIX B - instructs users on the need for having this adapter as a part of the network configuration and how to install it if it isn't there.
APPENDIX C - explains how to check if "Tranxit" (incompatible with IrLAN, ClarinetIR, and Direct Cable Connection communication) is installed and, if so, how to disable it.
APPENDIX D - provides instructions for users to connect to a particular networked environment with their notebook to make full use of network services as well as Internet connectivity.
APPENDIX E - instructs the user on ways to dramatically improve the connection speed of their Windows 95 notebooks to the EthIR LAN system (applicable only to specific notebook models).
APPENDIX F – provides step-by-step instructions on connecting your notebook, handheld PCs, and Palm IIIx, IIIxe, V, Vx and VII Organizers to the EthIR LAN system using IrLAN protocols or Cable Connection.

Conventions

This guide uses special conventions to present and help you access information in a concise and helpful way. The following textual conventions are used:

Style	Style used for
italic	emphasis
bold face	**documentation section, window name, and dialog buttons**
boxed text	strong emphasis
`courier bold`	`directory path or program path`
bold underline	**special notes**

In addition to the above textual conventions, this guide provides the following format for note statements:

> **Note:** xxxxx xx xxxx xx xxx xxxx xxxx xxxxxxxx
> xxxxxx

A note is used to communicate important information, for example, the system responding differently than expected.

Contacting Clarinet Systems

We welcome any comments you may have about our products or our documentation. Our goal is to provide functional and easy-to-use products that help you work more efficiently. Please Email or fax your comments to the following:

Clarinet EthIR LAN Support

Voice: 510.249.9660
Fax: 510.249.9661
Email: support@clarinetsys.com
Web Site: http://www.clarinetsys.com

Chapter 2
Installation

Introduction to EthIR LAN Components

Clarinet EthIR LAN includes EthIR Switch and EthIR Beam. Model number description follows. For description of "Pass Through" mode refer to page 2-6:

ES208 - 8 port Pass Through
ES216 - 16 port Pass Through
ES608 - 8 port Pass Through with security feature*
ES616 - 16 port Pass Through with security feature*
ES101 - single port infrared only

ES301 - single infrared port with additional Ethernet port

After EthIR LAN is installed you must configure it for your network. See Chapter 3, "Configuring EthIR LAN" for additional information on this topic.

Installation Requirements

Wiring

The EthIR Switch (ES208 / 216 / 608 / 616) requires standard UTP Category 3 or 5 wire with 4-pair wiring to the EthIR Beam.The EthIR Switch (ES101) single port uses a mini-dim connector cable. The EthIR Switch uplink supports both 100Base-T and 10Base-T Ethernet. Please note: 100Base-T4 is not supported.

Power (ES 208 / 216 / 608 / 616)

The EthIR Switch automatically detects and supports both the US and European 110/220 power supply and configures itself accordingly.

Power (ES101 / 301)

The ES101 will have a power supply specific to the installed region.

Resetting

To reset the system, unplug the EthIR power cord and wait at least 4 seconds before plugging the unit in again.

---

* security feature disables the ability to see other devices connected to the switch

EthIR Beam Supported Platforms

Notebook Computer

To connect to the EthIR Beam, a notebook computer requires the following:

1. Microsoft Windows 95 with infrared protocol stack and IrLAN. Microsoft Windows 98/2000 with infrared protocol stack and ClarinetIR or Direct Cable Connection (DCC). Check your notebook vendor's documentation. Apple MacOS v. 8.5 or later with infrared protocol stack and IrLAN.

2. Framer (infrared device driver)

3. IrDA compatible infrared port enabled.
   Note: If your notebook IR port supports a connection speed of 4Mbps, you may have to update your Windows 95 infrared drivers to use the 4Mbps connection; otherwise, the port may connect at 115Kbps. See APPENDIX E for instructions.

Handheld PC (H/PC), PocketPC, or Palm-sized PC (P/PC)

An H/PC or P/PC must run Windows CE 2.0+. PocketPC devices using Windows CE 3.0 or higher. Palm Organizers IIIx, IIIxe, V, Vx, and VII must run OS 3.3+. Palm VII must run OS 3.5+. Also including any devices that my run ClarinetIR™. These devices (as well as Windows 98 using DCC) are referred to as IR/PPP devices in this Guide).

Installation

Order of Installation

Install the EthIR Switch first, then install the EthIR Beam.

EthIR Switch (ES208 / 216 / 608 / 616)

The EthIR Switch, in 8 and 16 port versions each able to support multiple EthIR Beams for infrared connectivity or a LAN card for Ethernet connectivity.

The following figure illustrates the front panel fo the EthIR Switch into which the device cables are plugged:

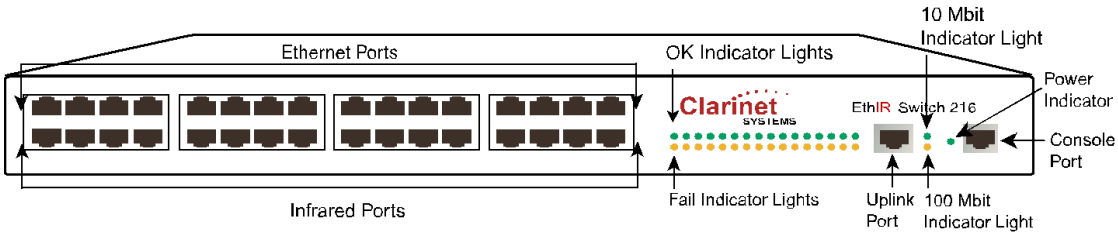
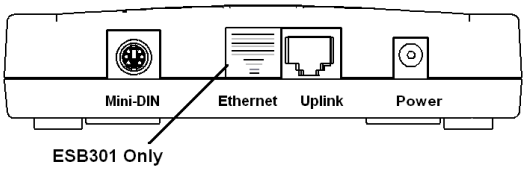


Figure 2-1

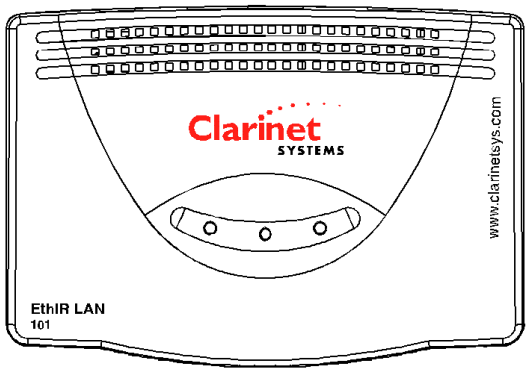
Note: The "OK" and "Fail" port indicator lights are *only* for infrared connections (where an EthIR Beam is connected to one of the lower ports via an RJ45 cable). If using a particular port for "Pass Through" mode (an Ethernet connection) the port indicator light for that port will not light up (see Pass Through Mode (ES208 / 216 / 608 / 616 only) on page 2-5).

EthIR Switch (ES101/301)



The EthIR Switch single port version is able to support one EthIR Beam for infrared connectivity.

The adjacent figure illustrates the port panel into which device cables are plugged:



- ✓ mini-dim connector (for EthIR Beam)
- ✓ RJ45 Ethernet uplink port
- ✓ power jack

In addition, the dual port model also offers an additional Ethernet port that can be connected to an Ethernet hub or available for a desktop computer.

Install EthIR Switch (ES208 / 216 / 608 / 616)

The EthIR Switch can be installed in any location in your facility. The most practical place to install it is in the same location as other network equipment.

To install the EthIR Switch:

1. Plug in one end of an Ethernet UTP cable into the uplink port and the other end into a network patch panel or Ethernet wall jack leading to a patch panel.
2. Power up the system by plugging it into any 110/220 AC outlets. Once the switch is plugged in, indicator lights display its status as follows:

a. A steady green light beside the Console Port means the system has powered up correctly.
b. A steady green light beside the uplink port indicates a 10Mbit or 100Mbit per second connection respectively. If both lights are unlit, the Uplink to your network failed.

3. Make the device connections. Each EthIR Switch is equipped with two rows of RJ 45 jacks. The top jack of each port is the Ethernet "pass through" port. The bottom jack of each port is the infrared connection port.
   a. If your intention is to connect only infrared devices to the EthIR Switch, see "Infrared Mode" below.
   b. If you are connecting a combination of infrared and Ethernet devices to the EthIR Switch, see Pass Through Mode (ES208 / 216 / 608 / 616 only) on the next page.

Install EthIR Switch (ES101 / 301)

To install the single port EthIR Switch:

1. Plug in one end of an Ethernet UTP cable into the uplink port and the other end into a network patch panel or Ethernet wall jack leading to a patch panel.
2. Connect the EthIR Beam to one end of a mini-dim cable and plug the other end into the mini-dim plug on the switch.
3. Power up the system by plugging it into an AC outlet. Once powered the EthIR Switch indicator lights display its status illustrated as follows:
   a. **Uplink -** (indicates state of network connection)
   b. **Status -** (indicates progress of obtaining an IP address from DHCP server)
   c. **Power** - ES101 (indicates state of power)
   d. **PC** - ES301 (indicates Ethernet port in use)

The LED indicator light on the EthIR Beam (EB10) indicates data transmission via infrared.

	Uplink	Status	Power (101 only)	PC (301 only)	Beam EB10
Status	ON OFF	OFF ON Blinking (½ seconds)	OFF ON	OFF ON	OFF LOW HIGH
Power On	OFF	ON then OFF	ON	OFF	LOW
System Init	ON if uplink is up	ON if the IP is found. Blinking if the IP is not found. OFF if the unit is bad	ON	OFF	LOW
Connected by IrLAN	ON if uplink is up	ON if the IP is found. Blinking if the IP is not found	ON	N/A	HIGH Blinking if there is activity
Connected by IR/PPP	ON if uplink is up	ON if the IP si found. Blinking if the IP is not found	ON	N/A	HIGH Blinking if there is activity.

	Uplink	Status	Power (101 only)	PC (301 only)	Beam EB10
Fatal Error	N/A	OFF	OFF/ON	N/A	N/A
PC Connected Via Ethernet	N/A	N/A	N/A	ON	N/A

Infrared Mode (ES208 / 216 / 608 / 616 only)

If the EthIR Switch will only support infrared devices, do the following:

1. Connect one end of the UTP cables to the bottom infrared ports on the EthIR Switch and the other ends to an EthIR Beam.
2. Uplink the EthIR Switch to an existing network for network access.

As each EthIR Beam is successfully connected, the Connect indicator is illuminated. See Figure 2-1 for the positioning of these indicators on the Switch panel.

Pass Through Mode (ES208 / 216 / 608 / 616 only)

Although designed to support infrared connections, the flexibility of the Pass Through mode allows for Ethernet connections as well by "passing" Ethernet frames to an Ethernet hub or patch panel. This allows for a "mixed" environment to coexist. There are several kinds of EthIR Switch installation scenarios that can be implemented depending on your network infrastructure.

Scenario 1: The EthIR Switch is situated in a location (such as a conference room) that has only one available uplink wall jack to an Ethernet network but several notebook/desktop PCs needing network access.

Scenario 2: The EthIR Switch is installed between the Ethernet rack and hub in the communications closet. This scenario allows each wall jack that is connected to the EthIR Switch to support either infrared or Ethernet connections depending on need.

You can connect a combination of LAN cards and infrared devices to the EthIR Switch up to the number of supported ports. If your EthIR Switch has eight ports, you can connect any combination of LAN card and infrared devices up to eight. The EthIR Switch automatically distinguishes whether the connection is infrared or Ethernet and responds appropriately.

To set up for combination LAN card *and* infrared device use, do the following:

1. Desktop computers using Ethernet adapters for Pass Through:

a. Connect the appropriate number of UTP cables from each adapter card on the desktop computers to the infrared port on the EthIR Switch (the bottom row of ports).
b. Connect a second UTP cable from the Ethernet port (the top row of ports) to an Ethernet hub (Scenario 1) or patch panel (Scenario 2)

2. Notebooks and HPCs using Infrared:
   a. Connect one end of the UTP cables to the infrared ports on the EthIR Switch and the other ends to an EthIR Beam.
3. Uplink the EthIR Switch and pass through ports to an Ethernet hub and uplink the Ethernet hub to an existing network connection (Scenario 1) or uplink the EthIR Switch to a patch panel (Scenario 2).

As each EthIR Beam successfully connects, the Connect indicator is illuminated. See Figure 2-1 for the positioning of these indicators on the Switch panel.

> **Note:** Connect or Fail LEDs light only for EthIR Beam connections. No LEDs are lit when a port is connected to a LAN card device.

Understanding the EthIR Switch Panel LEDs (ES208 / 216 / 608 / 616 only)

- *Ethernet Uplink LED* - The Ethernet Uplink displays one of two lights when power is connected to the EthIR Switch and the Switch is uplinked to a network hub: A steady green light to the right of the Uplink port indicates either a 10Mbit or 100Mbit per second connection. See Figure 2-1 above for the exact position of these lights.

- *Power LED* - A steady green light means the system has powered up correctly.

- *IR Port LEDs* - The EthIR Switch provides 8 or 16 ports for connection to infrared devices. Each port has two indicator LEDs as follows:
  - A green Connect LED that when lit indicates successful connections to the EthIR Beam. This means the EthIR Beam is working. When the EthIR beam is plugged in, the light comes on; when the cable or EthIR Beam is unplugged, the light goes off.
  - An amber Fail LED that when lit indicates failure to successfully connect to the EthIR Beam. This means either the cable or EthIR beam may have a short circuit. When the troublesome cable or EthIR Beam is unplugged, the light goes off.

> **Note:** The Console serial port is provided for Clarinet diagnostic and support purposes only and should not be used for any other purpose.

EthIR Beam

Power

The EthIR Beam is powered by the EthIR Switch, which means that no power adapter or extra line is required to install it. Simply plug it into the infrared port (or mini-dim connector) on the EthIR Switch. The Switch powers the EthIR Beam via the UTP or mini-dim cable connected to the particular Switch model.

Checking Connection Status

The EthIR Beam displays a steady green light when it is successfully connected through the network to the EthIR Switch. A flashing green light on the EthIR Beam means that data is being transmitted between the network and your portable computer.

For successful transmission of data, the infrared access point of your portable computer must be aligned with the infrared access of the EthIR Beam. Each infrared device provides a cone of approximately 30 degrees within one meter from the access point within which it can sense infrared transmission.

If you miss align your notebook computer, or block the infrared access point, a helper dialog pops up to display a countdown period of time within which you can realign the computer without losing the connection.

The EthIR Soft Family of Products

Introduction

The EthIR LAN system is shipped with a CSI Media Installer CDROM containing software programs for separate tasks. The CSI Configuration Tool is a software utility for network administrators to maintain and configure the EthIR Switch. The Infrared Driver for Windows 95 is a utility that updates Windows 95 notebooks originally shipped without infrared support. The ClarinetIR™ software allows mobile Windows 95/98/2000, PocketPC and Palm users to effortlessly connect to any EthIR LAN system anywhere without having to reconfigure their IP addressing.

CSI Configuration Tool

All eight and sixteen port EthIR Switches are pre-configured with a default set of IP addresses that have been entered as a guide for network administrators when configuring the EthIR Switch according to their own network scheme. This tool allows for configuration of IP address for the EthIR Switch itself and any DNS or Proxy addresses as well as an IP Pool of addresses that will be used by Windows 98, Windows CE devices, and Palm IIIx, IIIxe, V, Vx, and VII Organizers as well as any

notebook or devices running the ClarinetIR™ software. Supported platforms for running the Tool include: Windows 95/98/2000, Palm and MacOS running a PC emulator.

Infrared Support for Windows 95

A few notebooks manufactured during the initial release of Windows 95 were not configured with infrared drivers (despite having infrared hardware). This software utility installs and configures infrared drivers in such notebooks. See APPENDIX A for further information.

ClarinetIR™

The ClarinetIR™ software was developed primarily for mobile notebook users running Windows 95/98/2000 and PocketPC or Palm handheld devices. It allows users to access a LAN or the Internet when interfacing with any EthIR LAN system anywhere. The software 'reads' the EthIR Switch IP information and self-configures to interact with that particular system during an infrared communication session. No user intervention is required. Any user who wishes to gain LAN access via EthIR LAN switches should always use this software.

CSI Firmware updates

Periodically, Clarinet Systems engineers make improvements to an EthIR Switch's performance and flexibility with new features and enhancements. This comes by way of Firmware updates. Customers can download the latest firmware updates from the Clarinet Systems web site: http://www.clarinetsys.com. The firmware is used in conjunction with the CSI Configuration Tool. Please refer to Updating The Firmware in Chapter 3 at page 3-12 for more details.

Software Installation and Hardware Requirements

The CSI Configuration Tool is for network administrators and is not intended for the casual user. Installation is performed on any Windows 95/98/2000 or MacOS notebook with an infrared port. Insert the CSI Media Installer CDROM, and click on the Install Configuration Tool button. MacOS and Linux users will need to run the program with a PC emulator.

The ClarinetIR™ software disk is for any Windows 95/98/ME/2000/XP notebook user. Please refer to Chapter 4 ClarinetIR for more details

For installing Infrared Support for Windows 95 software refer to APPENDIX A for more details.

Chapter 3
Configuring EthIR LAN

Introduction

Please read through this section of the User Guide before performing any configurations. This section describes how to:

1. Configure the EthIR Switch.
2. Use the CSI Configuration Tool.

Each step is described in the following sections.

Configure EthIR Switch

The EthIR Switch requires configuration to support handheld PCs running "PPP over IR" (hereinafter called "IR/PPP Devices") such as Windows CE devices, Palm Organizers (IIIx, IIIxe, V, Vx, and VII), and Windows 95/98/ME/2000/XP notebooks running ClarinetIR™ or Direct Cable Connection (DCC). Configuration is also needed to manage the Switch using SNMP (the EthIR Switch supports up to four SNMP managers), or update the Switch's firmware. In these cases you must specify an IP address for the Switch using the CSI Configuration Tool if you are to interact with an existing network. A complete description of the Tool and instructions on setting the Switch IP address follows:

CSI Configuration Tool

The CSI Configuration Tool provides a way to do setup and firmware upgrades for Clarinet Switches.

The following requirements must be met to use the Configuration Tool:

- ✓ A Windows 95/98/ME/NT/2000/XP PC or notebook with TCP/IP protocol installed (described in Binding TCP/IP Protocol for Notebook section in APPENDIX A).

The Tool can run on a PC with an Ethernet adapter or infrared port[**]. If the Tool is running on a PC using Ethernet, the PC's Ethernet adapter must be connected to an Ethernet network which the EthIR Switch should also be connected to. If the Tool is running on a notebook using infrared, the notebook can be connected to the EthIR

[**] infrared port option is not available for Windows NT.

Switch via infrared through an EthIR Beam to the Switch (see page 3-3, “Connectivity Choices for Using the CSI Configuration Tool”).

CSI Configuration Tool Installation

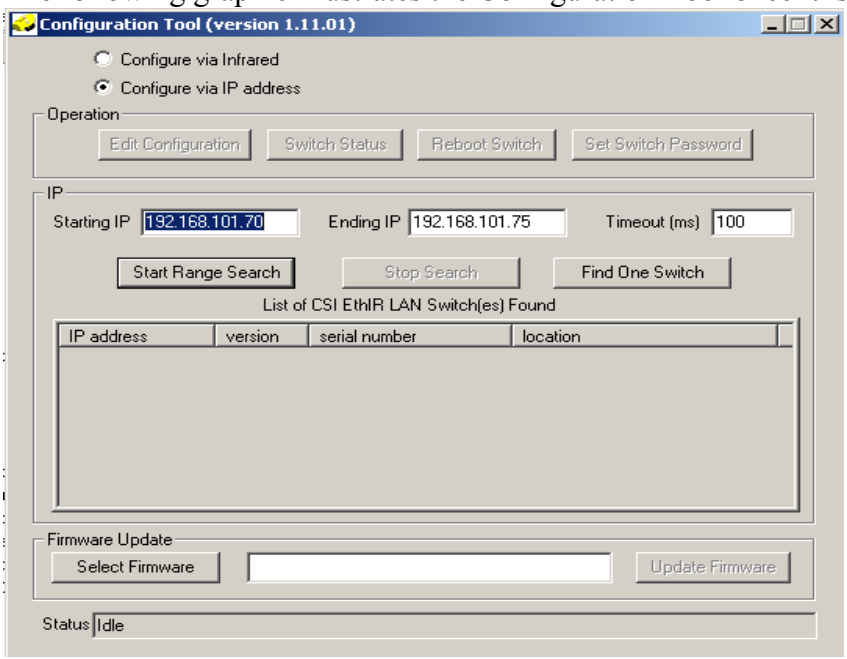
Your EthIR LAN system comes with a CSI Media Installer CD-ROM. On a PC, insert the CD-ROM into the drive and follow the on-screen prompts. This installs the Configuration Tool and icons onto your PC.

CSI Configuration Tool Functions

The Configuration Tool provides the following functions:

1. Sets the IP address of the Switch. This is usually required for the Switch to support IR/PPP devices, or be managed by SNMP.
2. Finds all the EthIR Switches on the network.
3. Updates the Switch firmware.
4. An IP Editor to configure IP addressing. The IP Editor can change the Switch’s IP address, Gateway, DNS and Proxy server IP addresses, and a pool of IP addresses. It can also be used to point to a DHCP server on the network to obtain these addresses.

The following graphic illustrates the Configuration Tool once it is started.



CSI Configuration Tool Window Description:

The Configuration Tool is divided into three sections:

1. Operation section is for accessing the configuration of any Switch on the network via an infrared or Ethernet connection. This section allows reconfiguring and managing Switches over the network.
    a. **Edit Configuration** edits the Switch's IP and its Pool of IP addresses for connecting devices as well as gateway, DNS, Proxy IPs and an option to obtain these from a DHCP server.
    b. **Switch Status** grabs the configuration of the Switch's current setup in a pop up window, which can be used to save to disk or sending to Clarinet Systems for troubleshooting purposes.
    c. **Reboot Switch** allows user to manually reboot the switch without physically be at switch's location.
    d. **Set Switch Password** allows you to supply password protection to Switches in your network.

2. IP section relating to locating a Switch on the network, which includes:
    a. **Starting IP** and **Ending IP** specify the range of IP addresses within which to search for EthIR Switches on your subnet.
    b. **Timeout** specifies the time period in milliseconds to wait for a reply from a Switch during a search. Default is set to 100 ms.
    c. **Start Range Search** to begin a range search and **Stop Search** buttons to end a search.
    d. **Find one Switch** button to enter the IP address of one specific Switch to search for rather than a range.

3. Firmware Upgrade section is for loading the firmware file for updating.
    a. The **Select Firmware File** button allows you to navigate to the location of the file needed to upgrade the Switch's firmware. Then the "Update Firmware" button must be clicked.
    b. **Update Firmware** button is clicked after locating the firmware file for upgrading.

Connectivity Choices for Using the CSI Configuration Tool

Configure via Infrared

The easiest and quickest way to connect to an EthIR Switch for **initial** IP configuration purposes is by installing the Configuration Tool on an infrared enabled notebook and does the following.

1. Point an EthIR Beam towards the notebook's infrared port.
2. Launch the Configuration Tool software.
3. Click the **Configure via Infrared.**
4. Click the **Edit Configuration.**

A proprietary infrared communication link is established enabling you to make IP configuration changes. However, this option does not provide a mean to update firmware nor allow the user to configure switches other then the one connecting to. For managing multiple network Switches or updating the firmware, follow the steps in Configure via IP address on the following section. Nevertheless, this option provides the mean to configure the switch without an Ethernet uplink or invalid IP address settings.

Configure via IP address

The CSI Configuration Tool can be installed and launched on a PC running Windows 95/98/ME/2000/XP and connect to any Switch on the network provided the TCP/IP settings of its Ethernet adapter card is configured to be on the same subnet as the EthIR Switch. Laptop using an Ethernet card or utilizing ClarinetIR™ for LAN connectivity also applies. The following step describes how to start configuration using Ethernet connection:

1. Make sure Ethernet connectivity is available and switch is on the network.
2. Launch the Configuration Tool software.
3. Click the **Configure via IP address.**
4. Search for the switch via either range search or search for specific IP.
5. Click on the IP address of the switch to be configured.
6. Click the **Edit Configuration.**

This method is best suited to manage a Switch that has *already* been properly configured. However, if an infrared notebook is not available for **initial** Switch configuration, a Palm based configuration tool is also available for initial configuration.

Setting The IP Address Of The Switch For The First Time

If the EthIR Switch will be managed by SNMP or support IR/PPP devices, it must have an IP address.

The EthIR Switch (ES101 / 301) is shipped with DHCP option turned on *so no configuration is needed* if you have a DHCP server deployed on your network. ES101 users who wish to assign static IP addresses can follow the instructions below by uncheck the use DHCP option.

The EthIR Switch (ES208 / 216 / 608 / 616) is shipped with a default IP address 192.168.101.140 subnet 255.255.255.0, which is usually inapplicable for a customer site. To avoid possible IP conflicts you should reset the Switch's IP of those models

before connect the uplink to an existing network. *Again, do not uplink the Switch to an existing network when performing the initial configuration.*

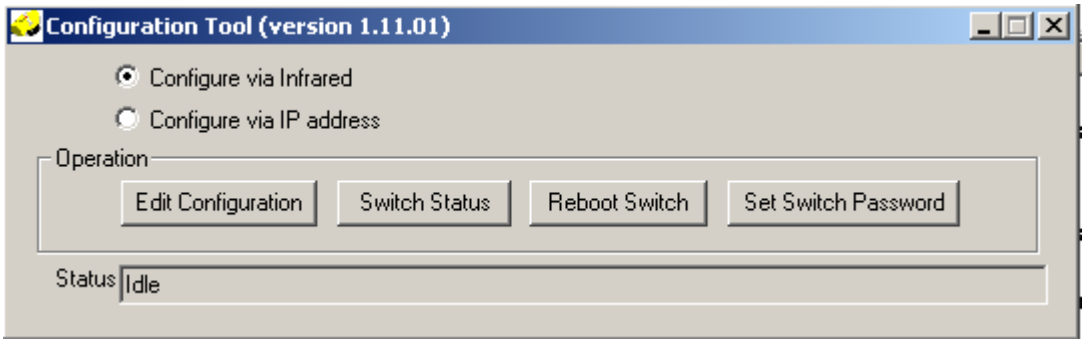
The following steps describe how to set the IP address of the EthIR Switch for the first time from a notebook running Windows with an enabled Infrared capability:

1. Launch the Infrared applet in the Control Panel to insure that "enable infrared" is enabled and the "plug and play" feature is disabled.

2. Install the CSI Configuration Tool software on the notebook.

3. Point and EthIR Beam to the notebook's infrared port.

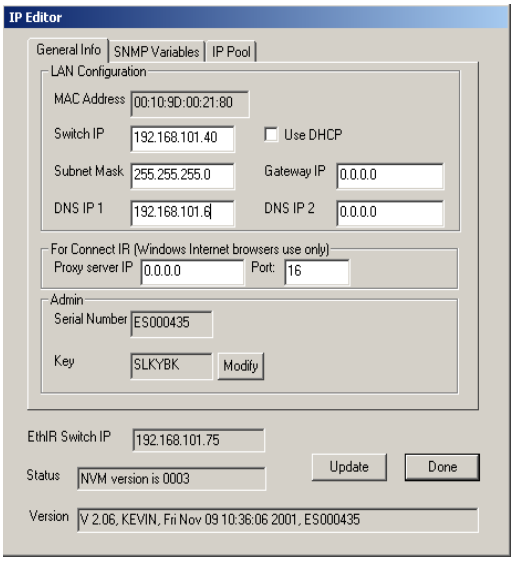
4. Launch the CSI Configuration Tool.



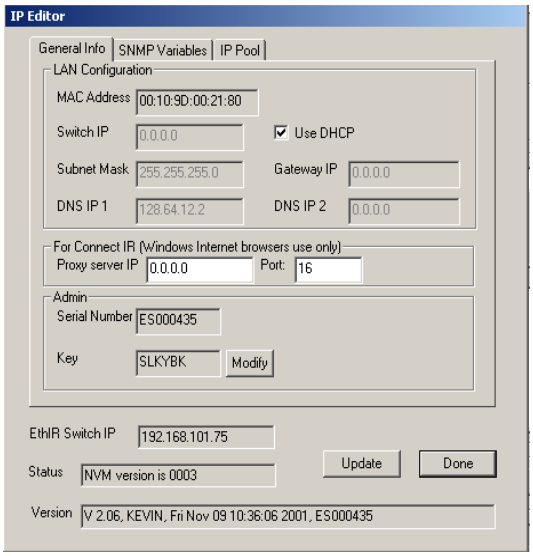
5. Click the **Configure via Infrared.**

6. Click the **Edit Configuration.** The IP Editor dialog appears showing the Switch's current configuration settings.

Models ES208 / 216 / 608 / 616
DHCP option off. Generic IPs entered



Model ES101 /301
DHCP option turned on



In the "General Info" tab, entries are available to setup your EthIR Switch with its own unique IP address according to your networking environment. Also, entries for Gateways, DNS Servers, and Proxy settings are made in this dialog.

A unique feature is the **Use DHCP** option. Checking this option will disable the entries for Switch IP, Subnet Mask, Gateway IP, DNS IP 1 and DNS IP 2. These settings will be secured from your DHCP Server if such is implemented within your networking infrastructure. If no DHCP server is on the network, do not check this feature.

If the **Use DHCP** option is invoked, the IP Pool (for IR/PPP devices) will also obtain available IP address from the DHCP server. If the Switch is an 8 port model, it will request 8 IPs from the DHCP server. If it is a 16 port model, then it will request 16 IPs. However, if the DHCP server is unable to honor the request and offers, say, five IP addresses to the IP Pool, then only up to five IR/PPP devices can connect to the Switch. If the **Use DHCP** option is not invoked, then eight valid IP addresses (for an 8 port EthIR Switch model) should be secured and entered into the IP Pool. For 16 port models then 16 IP addresses should be entered. If fewer IP addresses than available ports are entered into the IP Pool then only that number of IR/PPP connections can be made.

For the ES101 / 301 EthIR Switch, only one IP address can be entered into the IP Pool.

IMPORTANT NOTE: Make certain the DHCP Server is up and running over the network before setting the DHCP option and connect the uplink to the Switch to the network. It takes up to three minutes for the Switch to obtain IPs for the first time. If the DHCP server is not available but the Use DHCP option has been invoked, the Switch will not respond to any attempts to connect to it for up to three minutes.

Searching For EthIR Switches

To update the firmware and edit the IP information of the Switches once a valid IP has initially been set for the Switch, the Tool must first find the Switches. The Tool can run on a Windows PC or notebook or a MacOS PC emulator. Three pieces of information are required for the search to succeed.

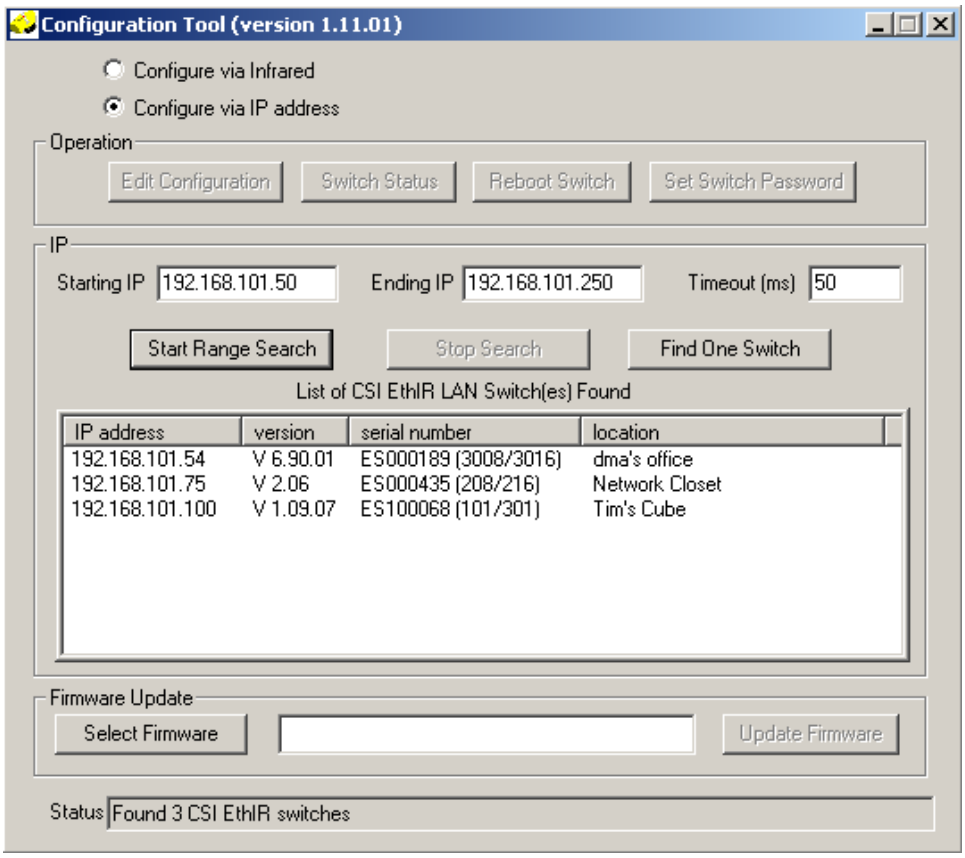
- ✓ Starting IP address.
- ✓ Ending IP address.
- ✓ Search timeout.

Starting IP address and **Ending IP address** specify the IP address range within which to search. Searches can also be performed across subnets.

Timeout specifies the time period in milliseconds to wait for a reply from the Switch during a search. This value varies depending on the following:

1. If the Tool runs on a PC connecting to the network using Ethernet and the Switch is on the same subnet, a timeout of 50 ms is usually sufficient.
2. If there are routers between the PC running the Tool and the Switch itself, or if the Tool runs on a notebook connecting to the Switch using Infrared, a high timeout (such as 1000 ms) may be required. The default timeout setting is 1000 ms. However, 100 ms can many times be sufficient.

As mentioned, the EthIR Switch (ES208 / 216 / 608 / 616) is shipped with default IP settings and DHCP option turned off. The ES101 is shipped with DHCP option turned on. Depending on need changes can be made such as the IP address for the Switch itself or turning on/off the DHCP option, and the IP Pool of IP address(es) for connecting IR/PPP devices.

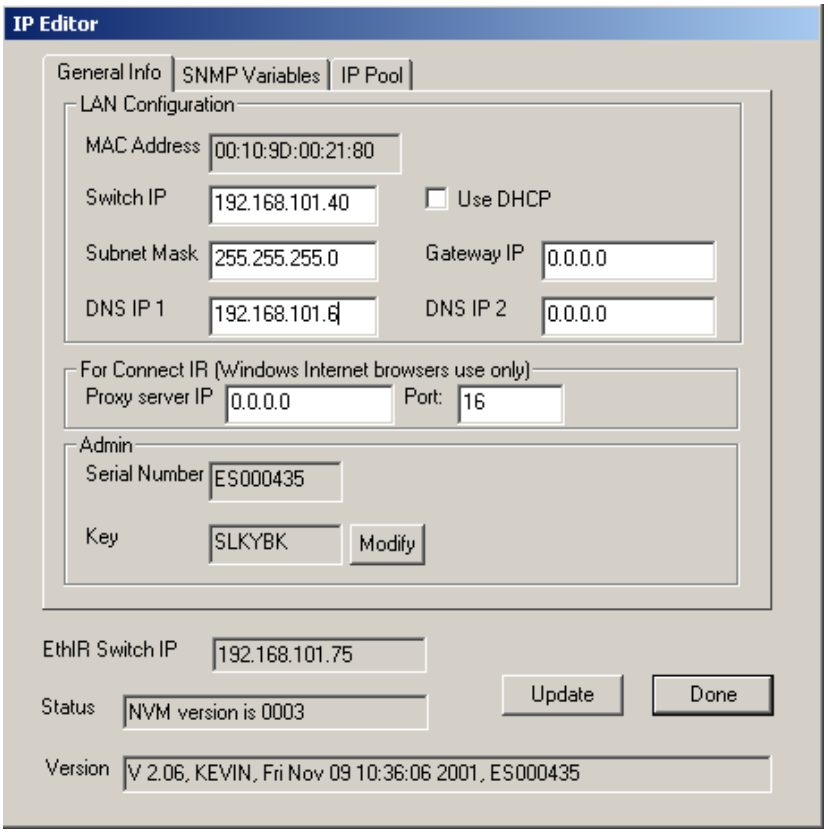


The above picture illustrates the discovery of three Switches.

The NVM Editor

General Info Tab

The General Info tab of NVM Editor contains configuration information required by the Switch. Select the appropriate Switches first using the Tool then click **Edit Configuration**. The **NVM Editor** dialog is displayed, as illustrated below:

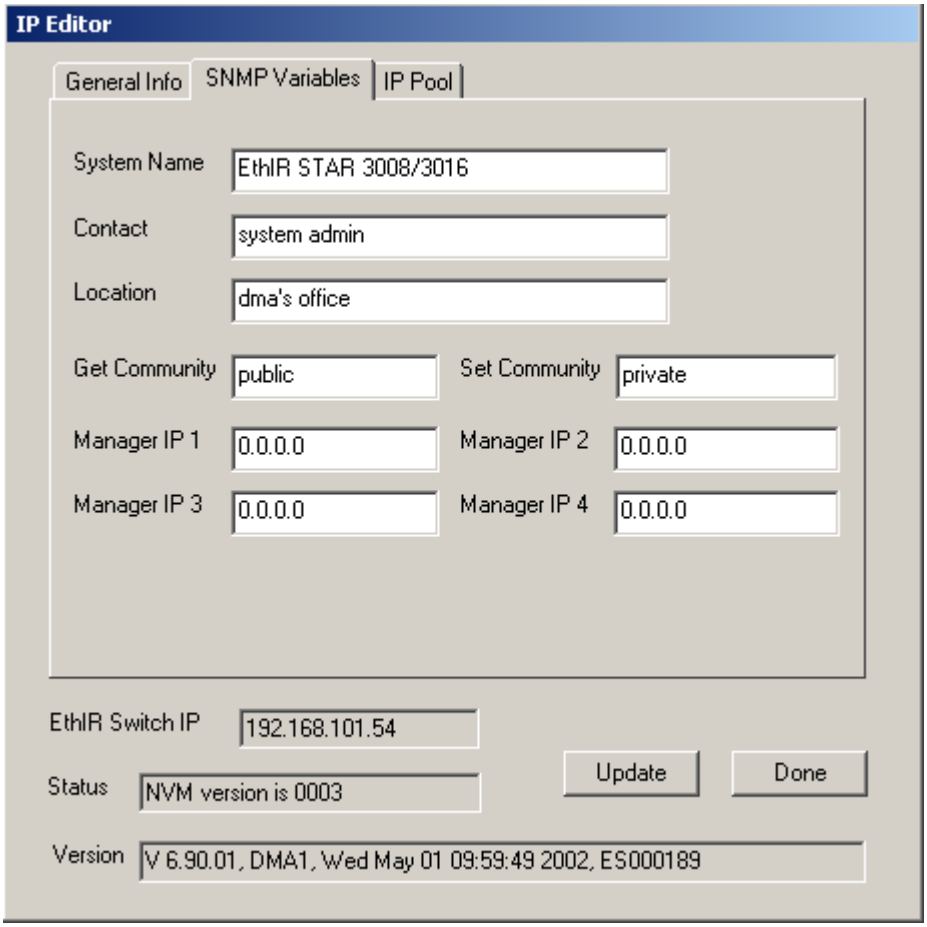


Settings include the Switch's IP address, Subnet Mask, and optional Gateway IP. The DNS IP 1 and 2 fields as well as the Proxy field have been included to support Internet connectivity for IR/PPP devices required to connect to the EthIR Switch. After all required tab fields are modified, click **Update** to update the IP information of the Switch. Clicking **Done** will reboot the switch if IP information is updated. If using the DHCP option, all IP entries (except the Proxy IP) will be obtained automatically.

Note: Do not change MAC Address..

SNMP Variables Tab

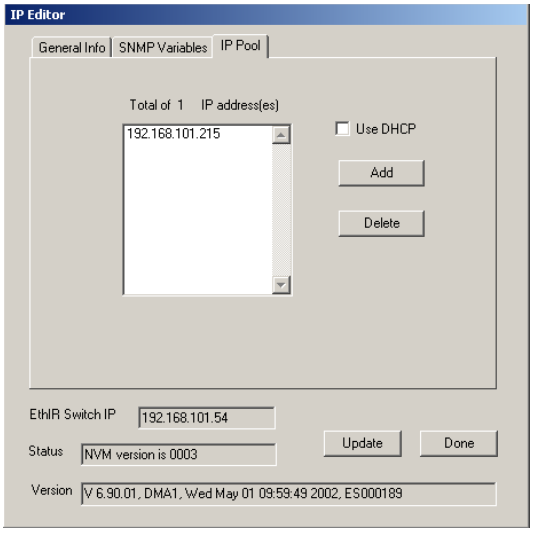
This tab contains information about SNMP, as illustrated below. The Switch supports, up to, four SNMP managers. If SNMP is not used, do not modify the information in this tab section. If SNMP is used, these fields should be set by your system administrator.



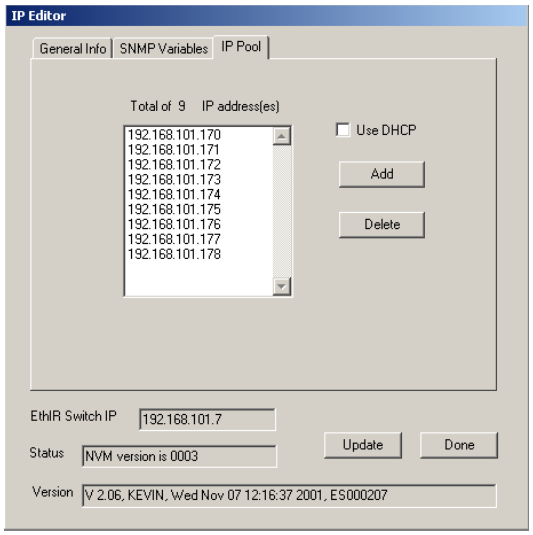
IP Pool Tab

This tab enables you to create a pool of dynamic IP addresses for assignment to IR/PPP devices as illustrated below:

Model ES101 / 301



Models ES208 / 216 / 608 / 616



If you intend to use any IR/PPP devices you must provide IP addresses in the IP Pool either manually or via DHCP. You can add or delete IP addresses to and from the pool respectively by clicking **Add** or **Delete** and then clicking the **Update** button. Alternatively, if DHCP Servers are available, invoking the **Use DHCP** on this screen will eliminate the need for managing IP Pool.

The IP Pool is preset to: 192.168.101.179 through 186 (on 8 port models ES208 and 608) and 192.168.101.179 through 194 (on 16 port models ES216 and 616). The one port ES101 / 301 IP Pool is initially empty since it is factory shipped with the DHCP option turned on. As a result, it requests an IP from the DHCP server for its IP Pool and will not be visible in the IP Pool list.

Once you set the appropriate information in this tab, the EthIR Switch automatically provides a IP Address from the IP Pool to any IR/PPP device that connects to the network via an EthIR Beam.

The fewer available IP addresses or available EthIR Switch infrared ports determines how many IR/PPP devices can connect to the system simultaneously. If you add less IP addresses than there are available ports, the number of IP addresses determines how many IR/PPP devices can connect to the system at any one time. For example, if your Switch supports up to eight infrared ports and you or a DHCP server provides only six IP addresses to this pool, then only six IR/PPP devices can connect to the Switch at any one time.

After all fields are modified, click the **Update** button to update the Switch's IP information.

Note: If you change the IP address of the Switch, you must reboot the switch by clicking **Reboot**. Any infrared communication during reboot will terminate.

Updating The Firmware

Periodically, Clarinet Systems engineers make improvements to the functionality of the EthIR Switch via firmware updates. These can be freely downloaded from Clarinet Systems web site.

To update the firmware in the Configuration Tool:

1. Initiate either an Ethernet communication session to the switch in need of updating as described in Configure via IP address on page 3-4.
2. Locate the EthIR Switches as described in Searching For EthIR Switches on page 3-7**.** Alternately, if you wish to manage only one Switch in your LAN system, you can click the **Find One Switch** button and enter the specific IP address of that Switch.
3. Select the Switch you want to update from the list of available switches on the Tool dialog. You can select multiple Switches by holding the control key and clicking on the desired Switches.
4. Once you select a Switch, the **Update Firmware** button will be enabled.
5. Click **Select File** to navigate to the file containing a image (wrp file) that was either downloaded or sent to you from Clarinet Systems. Click the **Update Firmware** button. If no file is selected, you are prompted to select a file. Once a file is chosen, all the selected Switches are updated in sequence. Once the upgrade is complete the switch is automatically rebooted.

Note: Try to update the firmware after work or at light traffic since the Switch will reboot itself after updating and any infrared sessions taking place will terminate. The update and reboot process takes about one minute for each Switch. If a group of Switches are selected, then the update will take one minute for each Switch in sequence.

Switch Security

All switches of EthIR LAN family contain security option that prevent unauthorized individuals to view and modify the switch configuration. This option can be enabled by click on the **Set Switch Password** button on the configuration tool. Once set, all configuration operation will require the user to enter the proper password to continue. The **Set Switch Password** button can also be used to disable password. If at any given time the switch password is lost, please free to contact Clarinet Systems Tech Support to obtain a default password for the switch.

Chapter 4
ClarinetIR

ClarinetIR™ is a freeware application, which provides network connectivity via infrared (IR) without the hassle and confusion of setting up and/or launching a dial-up network. With few simple clicks, the application can be installed onto your computer(s) and/or device(s) with ease. The uninstall feature also makes removal of application as simple as one, two, and three.

ClarinetIR™ comes in three different formats for three different types of systems. ClarinetIR for Windows PCs are designed mainly for Windows based laptops where the IR port is built-in and enabled by default. ClarinetIR for PocketPC supports Windows CE 3.0 based PocketPC devices. Lastly, the Palm version of ClarinetIR is also available for our users.

For the latest ClarinetIR™ download, information changes, and list of supported platforms please go to http://www.clarinetsys.com/.

APPENDIX A -

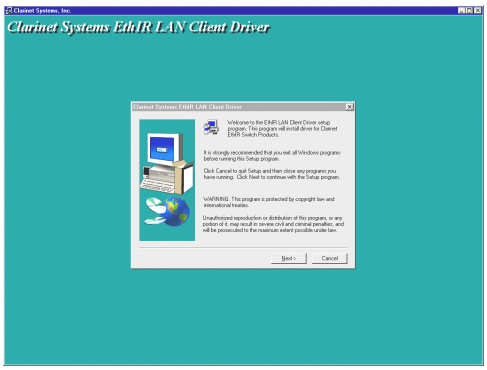
Installing Infrared Support for Windows 95

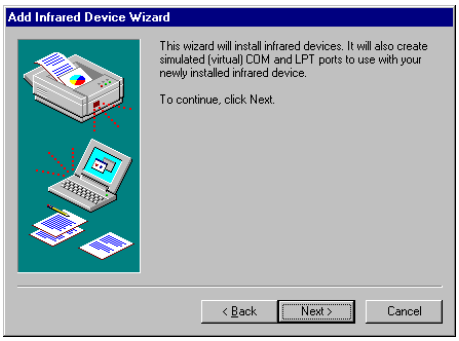
This section applies ONLY if IrLAN was not originally installed in your Windows 95 notebook (no Infrared icon in the Control Panel).

To install or update Windows 95 Infrared Drivers do the following:

1. Insert the CSI Media Installer CD. You will find the setup file in **`\Software\Infrared Support for Windows 95 notebooks without infrared ONLY\setup.exe`**.

2. At the Welcome Screen click **Next** to begin the installation process, which updates your notebook's hardware profile and adds the infrared device. Please skip to step 10 if your notebook's infrared hardware is already installed and operational.



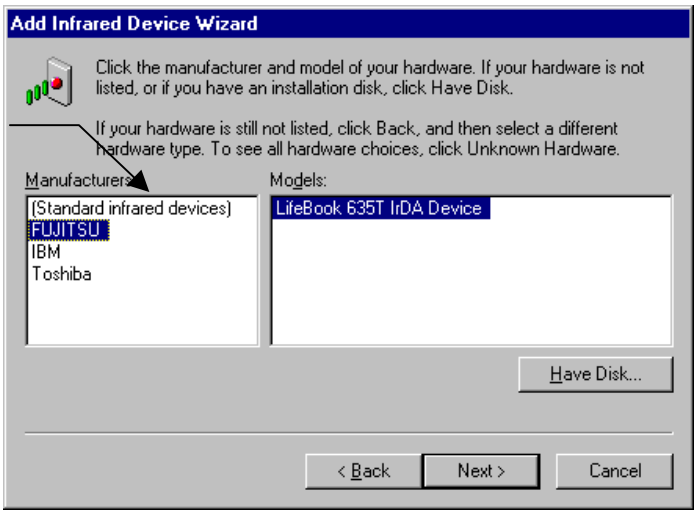


3. Click **Yes** if you agree to the License Agreement.

4. When the **Add Infrared Device** wizard is displayed, click on the **Next** button, and select the correct manufacturer and model of your portable computer as illustrated on the next page. It is important that you select the exact manufacturer; otherwise, your computer may connect at a speed significantly lower that 4Mbps. For example:

   - If your notebook is Fujitsu, click on it and then the correct model.
   - If your notebook is IBM, click on it and then the correct model.

If your notebook is not on the Manufacturers list, select **Standard Infrared Device**, then select **Built-in Infrared port on notebook or desktop** in the Models list.

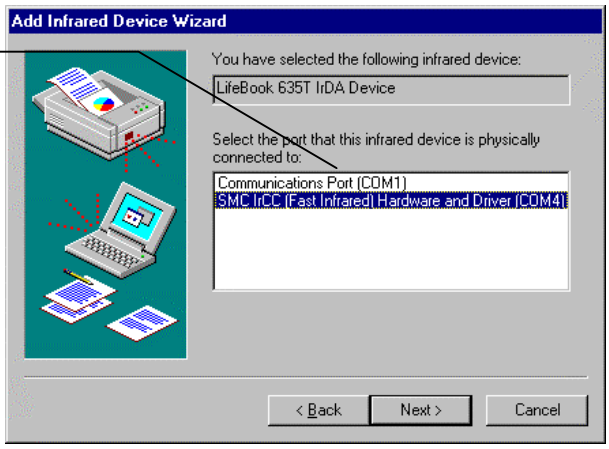


5. After making your manufacturer and model selections, click **Next**.

6. Select the COM port your notebook uses for Infrared.

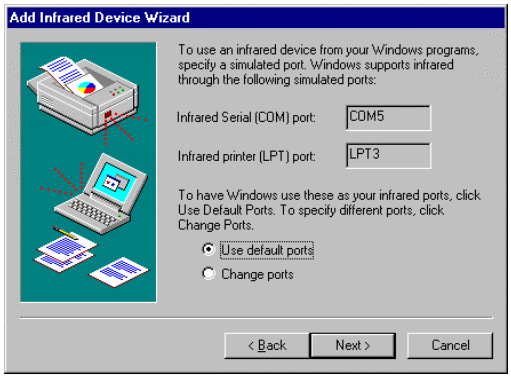
Example:

- If your notebook is Fujitsu 735, select SMC IrCC (Fast Infrared) Hardware and Driver (COM4).
- If your notebook is Toshiba 500 Serial, select Generic IR.



Note: When the Add Infrared Device Wizard prompts you to choose the IR-related communications port to which the IR device is physically connected, click that port in the list (do not select "Virtual" COM port if it appears). If you are uncertain which physical communications port the IR device is using, select the first COM port in the list (for example, COM1).

7. Click **Next**. (CAUTION: if the wrong COM port is selected a reinstallation of the drivers will be necessary).



8. When the **Add Infrared Device Wizard** prompts you to select the virtual COM and LPT ports, accept the default values as illustrated below and click the **Next** button.

9. After the wizard copies the IR communications driver files to the hard disk, the wizard displays two **New Hardware Found** messages:

   - Infrared Serial Connection (COM) port
   - Infrared printer (LPT) port.

   Note: If the **New Hardware Found** messages were *not* displayed, reboot your notebook and repeat steps 1 through step 9)

10. When the **Add Infrared Device Wizard** prompts you, click **Finish** to complete the IR device installation.

11. Start Up. Infrared Monitor must be launched each time you wish to use infrared communication. The setup program allows you to choose whether to launch the Infrared Monitor each time automatically upon startup by clicking **Yes** to the following question. If you do not want it to launch automatically each time click **No,** however, you will need to manually launch Infrared Monitor each time you wish to connect via infrared.

12. Point the EthIR Beam at your notebook's infrared port. With the infrared drivers now loaded, Windows 95 recognizes the Clarinet EthIR Switch as the new hardware device. Windows 95 starts the Plug-and-Play installation process by installing the Microsoft IrDA LAN Driver and Clarinet EthIR LAN adapter for your notebook. At this point you may be prompted to insert the

Windows 95 CD-ROM to continue the installation process. Follow the prompts until the installation is complete. You will see the Infrared Monitor screen indicating successful IrLAN connection.

Note: If the IrLAN connection only runs at 115Kbps, verify the IR port specifications of your notebook to see what the maximum speed it can support by consulting the documentation that came with your notebook or contacting the manufacturer. If the IR port can only support a maximum of 115Kbs then you cannot upgrade to a higher speed. If the port specification can support Fast-IR (4Mbps), you can continue to use the 115Kbps connection but you should request the IR 4Mb Framer (device driver) from your notebook manufacturer and then update the Framer by performing the steps outlined in "APPENDIX E - Upgrading from 115Kbs to 4Mbs Speeds."

Binding TCP/IP Protocol for Notebook

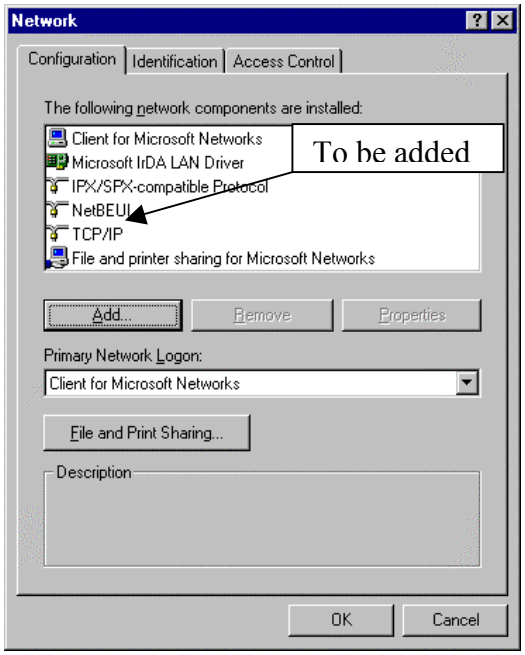
Clarinet EthIR Switch Client Driver enables the following protocols and clients on your portable computer:

- IPX/SPX
- NetBEUI

For the CSI Configuration Tool to work and TCP/IP based network environment, the Microsoft IrDA LAN Driver must be bounded to the TCP/IP protocol of your notebook. Typically this is done automatically. However, check your **Network** applet in the **Control Panel** to verify if the TCP/IP protocol was added.

1. Launch the **Network** icon in the **Control Panel** on your notebook. The system displays the Network panel illustrated on the right.

2. If the TCP/IP is not listed, click **Add** in the **Network** panel, then click **Protocol** and click **Add** in the **Select Network Component Type**. This will activate the **Select Network Protocol** panel. Select **Microsoft** in the **Manufacturers** list and select **TCP/IP** in the **Network Protocols**. Click **OK**.



3. You will see **TCP/IP -> Microsoft IrDA LAN Driver** is listed in the **Network** panel.

4. Once present, double click **Microsoft IrDA LAN Driver** in the **Network** panel. Select **Bindings**. Insure that **TCP/IP --> Microsoft IrDA LAN Driver** is checked on. Click **OK**. This returns you to the **Network** panel. Select **TCP/IP --> Microsoft IrDA LAN Driver**. Select **Properties**. An IP Address needs to be assigned.

5. To assign a static IP address, click **Specify an IP address**, then type in the IP address according to your corporate network policies. Click **OK**. The process is complete. You can close all of the panels. The static IP address approach allows you to assign a permanent IP address manually. Networked environments that did not use TCP/IP before should use this approach.

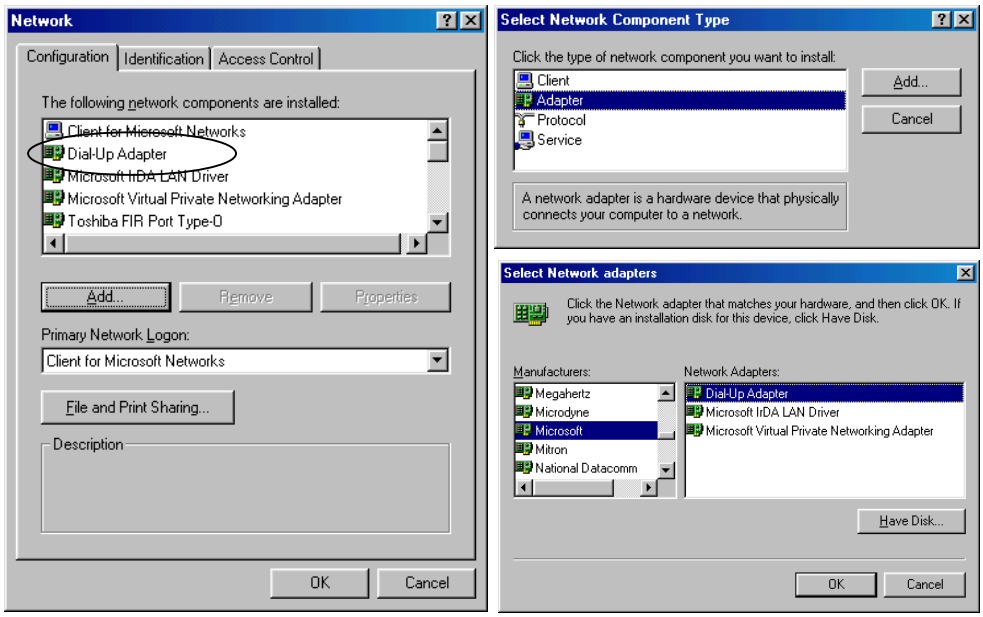
6. To assign an automatic IP address, you would instead click **Obtain an IP address automatically**. Click **OK**. The process is complete. You can close all of the panels. The automatic IP address approach allows the IP address to be configured automatically. It minimizes administration effort and allows reuse of the IP address. It is recommended for networks with DHCP.

For other configurations such as DNS, Gateway, etc., please see your system administrator.

APPENDIX B -

Verifying that Dial-Up Adapter is in your Network Configuration

In order to use ClarinetIR or Direct Cable Connection successfully, you must have Dial-Up Adapter in your network configuration. Go to **`Start\Settings\Control Panel`** and double-click the Network icon. If **Dial-Up Adapter** is not there you must click the **Add** button. In the **Select Network Component Type** dialog click **Adapter** and click **Add…** and choose **Microsoft** as the **Manufacturer** and **Dial-Up Adapter** from the **Network Adapter** list.

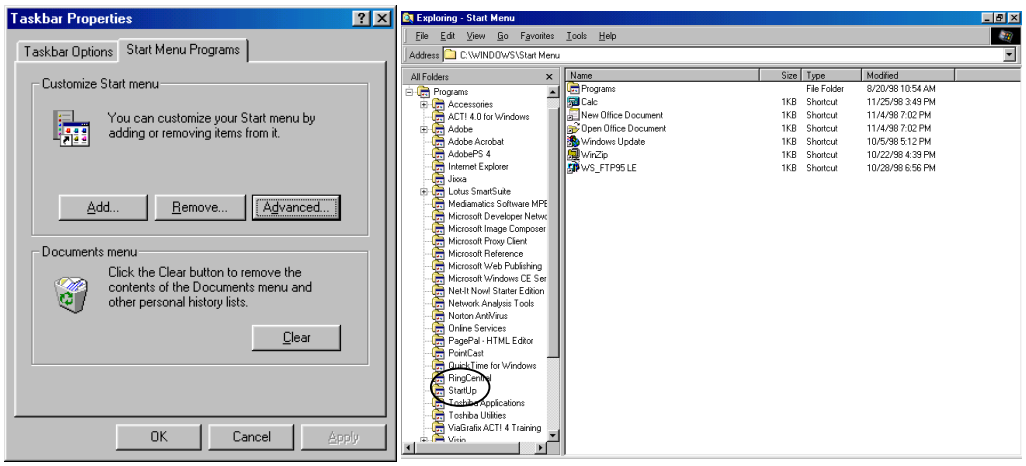


Note: Windows *may* prompt you to insert the Windows CD-ROM. If none is available, enter **`\WINDOWS\OPTIONS\CABS`** in the dialog path name.

APPENDIX C -

Disabling Puma Technology's IR Communication Software

If your laptop is equipped with Puma Technology's Tranxit communication software it must be disabled before continuing the configuration. If present, remove it from the **`Start\Program\Start Up`** folder and reboot. You can check this by clicking: **`Start\Settings\Taskbar & Start Menu`**. Click the Start Menu Programs tab.



Click the **Advanced** button. Expand the **Programs** icon in the left frame by clicking once on the plus sign (+). Find the **StartUp** folder in the expanded list and click on it once. Check the right panel for **Tranxit** icon. If you find it, click once on it and press the **Delete** key. If the icon is not there then this communication program has not been enabled and you can proceed with the installation. Close the dialog window and click **OK** for the **Taskbar** properties.

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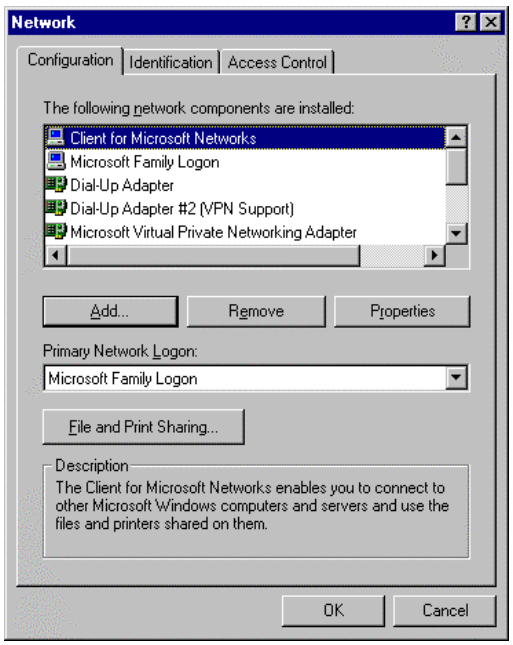
APPENDIX D -

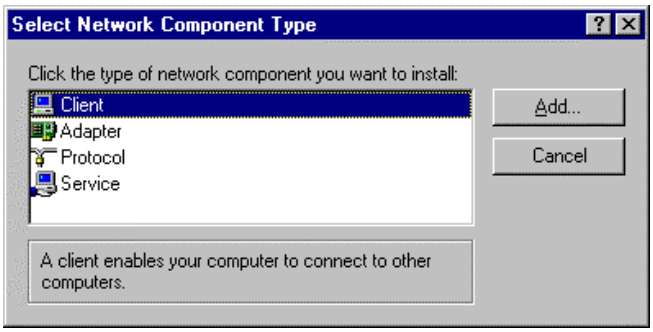
Browsing the Network Neighborhood Windows 95/98

If you cannot find the **Network Neighborhood** icon on your desktop or in your Windows Explorer, you will need to install **Client for Microsoft Net-works**.

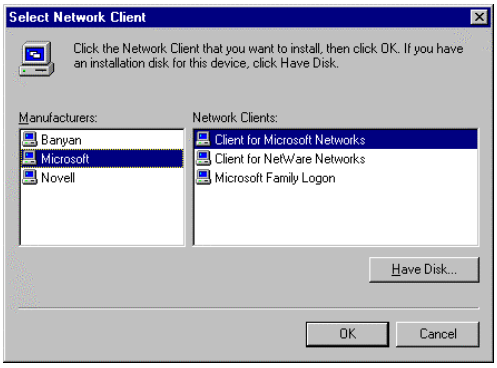
1. Double click the **Network** icon in the **Control Panel**.



2. Click **Add** button. In **Network Component Type**, select **Client**. Click the **Add** button.

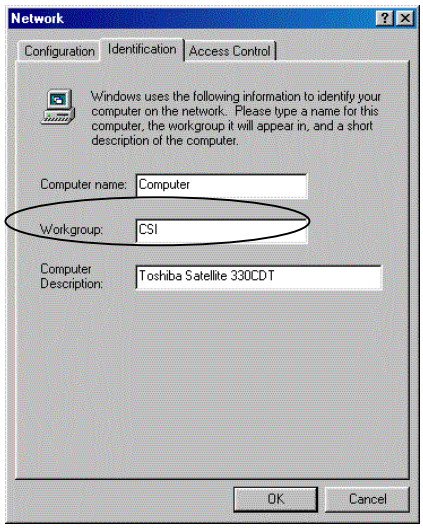


3. In **Manufacturer** box, choose **Microsoft**. Then choose **Client for Microsoft Networks**. Click **OK**.



4. Now configure the network identification properties for the workgroup name.
   Note: If you wish to participate on a Windows NT network and use services such as network browsing and shared resources.

5. Click on the **Identification** tab in the **Network Properties** dialog.



6. Enter the name of the workgroup and click **OK**.

7. Click **OK** again. Windows will begin installing the client. You *may* be prompted to insert the Windows 98 CD-ROM. If none is available, enter **`\WINDOWS\OPTIONS\CABS`** in the dialog path name.

8. Windows will reboot your system.

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APPENDIX E -

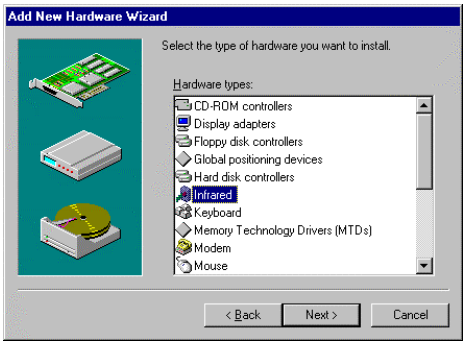
Upgrading from 115Kbps to 4Mbps Speeds

The following procedures apply only to Windows 95 in general and the following manufacturers in particular: Compaq, Fujitsu, Hewlett Packard, Sharp, Sony, Toshiba. In order to upgrade you'll need an updated framer for your Windows 95 notebook. Consult your hardware manufacturer for an updated driver. Download and copy the appropriate framer file onto your hard drive. Then follow the instructions as outlined:

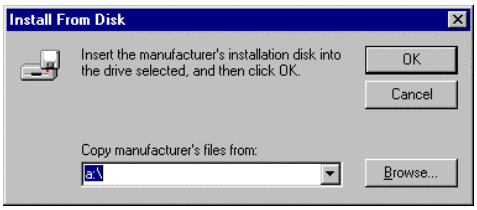
1. From `Start\Settings\Control Panel` click **Add New Hardware** and click **Next**.

2. When prompted to have Windows detect the new hardware you wish to install check the **No** radio button and click **Next** (as illustrated on the next page).

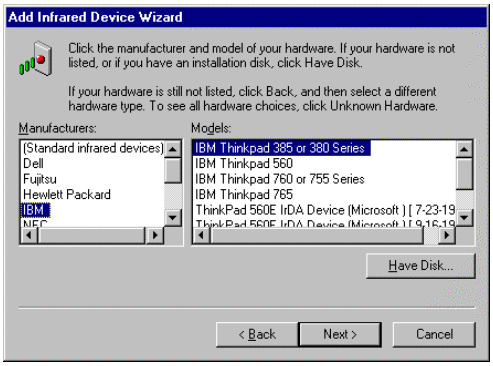
3. Select **Infrared** as the hardware you wish to install from the Hardware types window and click **Next**.



4. You will see the Wizard display a dialog box informing you that it **will install infrared devices**. Click **Next** and be sure the **Infrared Driver for Windows 95** disk is inserted in the floppy drive. Click **Have Disk** in the **Manufacturers/Model** dialog box. Type the path **a:**\, and click **OK**.



5. Select the correct manufacturer and model for your notebook and click **Next**.
Note: If it's not printed on the notebook housing you can check the documentation, which came with it or the bottom of your notebook for the model.

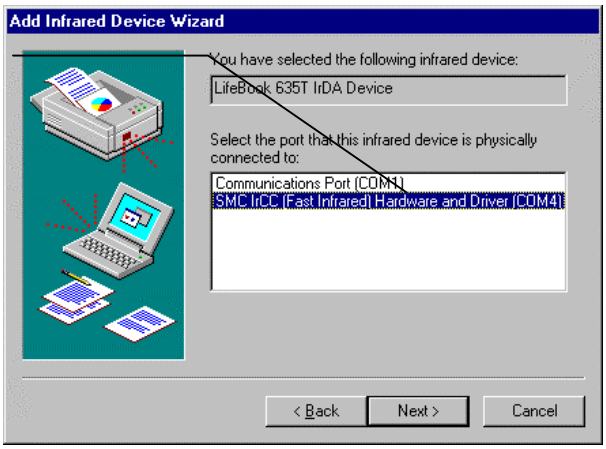


6. Select the COM port your notebook uses for Infrared.
Note: When the **Add Infrared Device Wizard** prompts you to choose the IR-related communications port to which the IR device is physically connected, click that port in the list (do not select *Virtual* COM port if it appears in the list. If you are uncertain which physical communications port the IR device is using, select the first COM port in the list (for example, COM1). Then click **Next**.

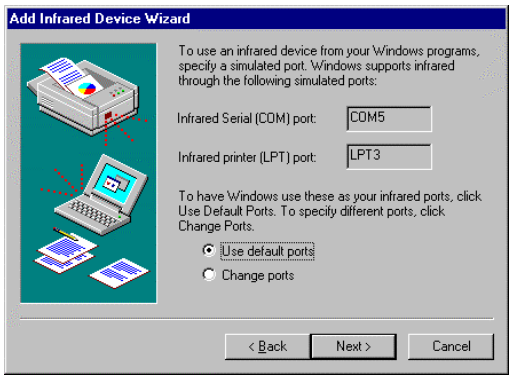
CAUTION: if the wrong COM port is selected a reinstallation of the drivers will be necessary.

Example:

- If your notebook is Fujitsu 735, select SMC IrCC (Fast Infrared) Hardware and Driver (COM4).
- If your notebook is Toshiba 500 Serial, select Generic Ir Serial Port (COM3).



7. When the **Add Infrared Device Wizard** prompts you to select the simulated COM and LPT ports, accept the default values as illustrated below and click the **Next** button.



8. When the **Add Infrared Device Wizard** prompts you, click **Finish** to complete the IR device installation.

PLEASE BE CERTAIN TO RESTART YOUR COMPUTER. Once re-started the **Infrared Monitor** should come up and display that the connection is good at 4Mbs

Fast-IR speed. If it still runs at 115Kbs it is likely that the wrong COM port had been select from step 6. Return to step 1 at the beginning of this section and repeat the process.

APPENDIX F -

Notebook and Handheld PC Configurations

Configuration Options

Please read through the application section of this chapter before performing any configurations. This section describes how to:

1. Configure your notebook PC running IrLAN with Windows 95 or Direct Cable Connection (DCC) or ConnectIR with Windows 95/98/2000.
2. Configure your Windows CE handheld PC or palm-size PC.
3. Configure your Apple MacOS Powerbook.
4. Configure your Palm Organizer (IIIx, IIIxe, V, Vx, or VII).

Before You Begin — Needed Changes to Your System

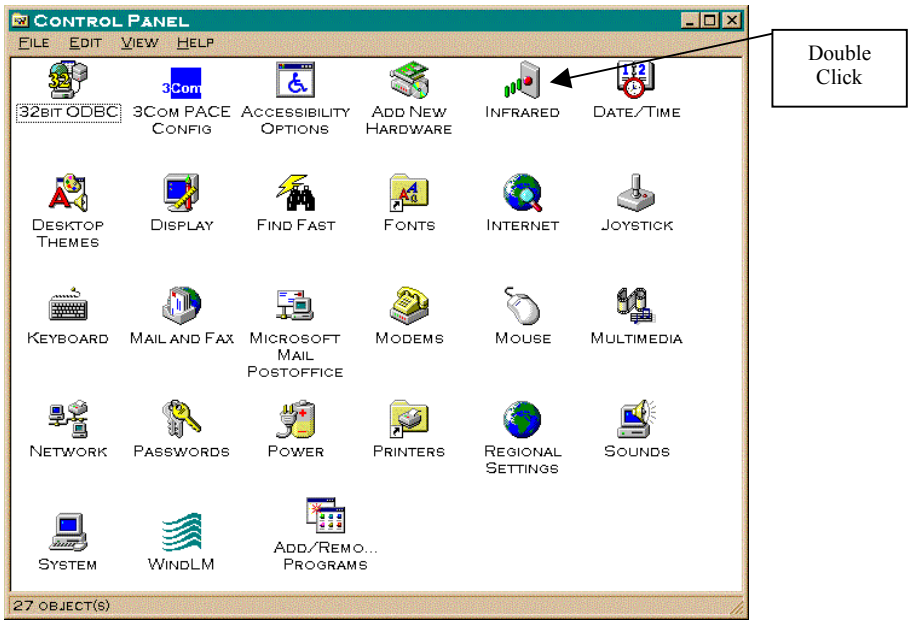
The following pages discuss the steps needed for a successful notebook connection to a network via EthIR LAN. There are a few changes necessary to achieve this. Some of these steps may require your Windows CD-ROM in order for the system to copy the needed files (unless the CAB files have been copied to your hard disk). Also, some of these changes require a reboot. It may be helpful to do all these steps at one time. Please refer to the page number outlined for each of the following steps and read it carefully first, then perform the needed task.

Remove any Ethernet PCMCIA adapter cards from your notebook.
Verify that Dial-Up Adapter is installed in your network configuration (APPENDIX B)
Disable Puma Technology's IR Communication software (APPENDIX C)
Configure Infrared Monitor for IrLAN with Windows 95 (Page F-2)
OPTIONAL: Specify workgroup to enable Network Neighborhood browsing and file sharing (APPENDIX D)

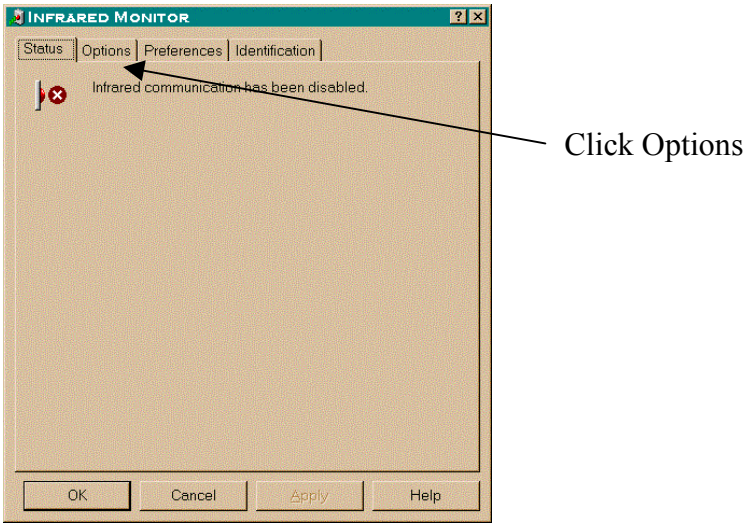
Using IrLAN with Windows 95 Notebooks

In most cases, your portable computer is already configured for use with Clarinet Systems' EthIR LAN. As mentioned on the previous page, only minor setup on your part is required to enable the **Infrared Monitor** as follows:

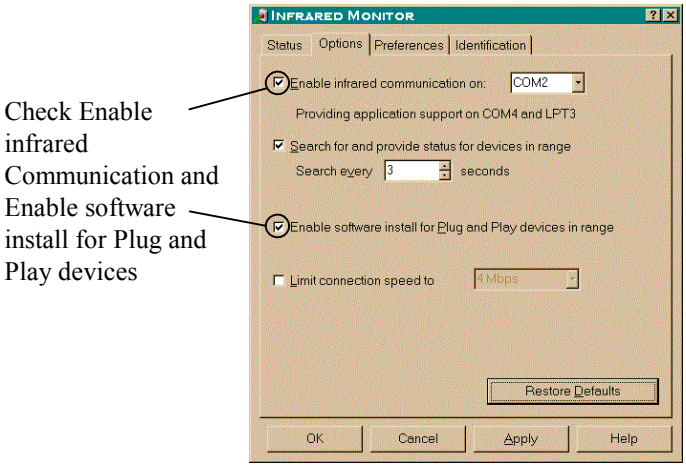
1. Open the Infrared Application Program in Windows 95—In the **`Start\Settings\Control Panel`**, double click the Infrared Icon as illustrated below (If you don't see the Infrared Icon, skip this section and go to APPENDIX A)



2. To enable your **Infrared Monitor**, click **Options**, as illustrated below



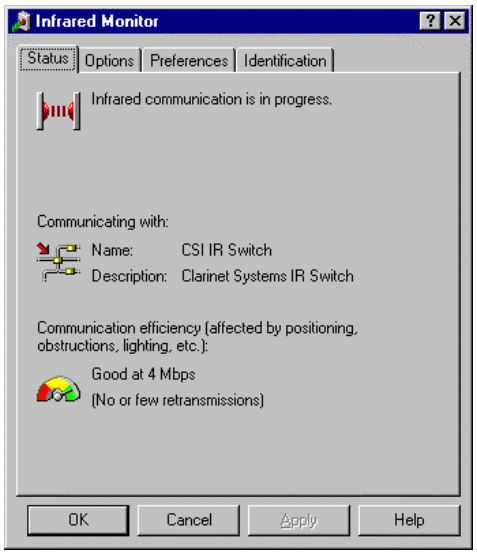
3. Check the box **Enable infrared communication on….** and **Enable software install for Plug and Play devices in range**.



4. Click **Apply** then return to the **Status** tab to see connectivity taking place. Your portable computer is now configured and ready for use with the Clarinet EthIR Beam. Point the EthIR Beam towards your notebook's infrared port. With the infrared drivers now loaded, Windows 95 recognizes the Clarinet EthIR Switch as the new hardware device. Windows 95 starts the **Plug-and-Play installation** process by installing the **Microsoft IrDA LAN Driver** and **Microsoft IrDA LAN Adapter** for your notebook. At this point you may be prompted to insert the Windows 95 CD-ROM to continue the installation process. Follow the prompts until the installation is complete. You will see the **Infrared Monitor** screen indicating successful IrLAN connection. See Chapter 2 for information on positioning your notebook computer with the EthIR Beam.

5. If the IrLAN connection is successful but only runs at 115Kbps verify your IR port specification for your notebook. If the port specification is 115Kbps then the notebook installation is complete. If the spec is 4Mbs and you are only able to connect at 115Kbps, you should request the IR 4Mbs Framer (device driver) from your notebook manufacturer and then update the Framer (see APPENDIX E) and repeat this section again. In the meantime, you can continue to use 115Kbps. The installation is complete.

The following figure illustrates the activated Infrared Monitor screen with successful IrLAN connection.



To interact with your network, you will need to configure the **Microsoft IrLAN Adapter** in your **Network Configuration** panel with the appropriate TCP\IP information.

Consult your network administrator for that information.

Using Direct Cable Connection with Windows 98 Notebooks

In lieu of the software the following directions can be followed and the same connectivity can be achieved. Please read through this entire section of the User Guide before configuring your system.

> **Note**: The ClarinetIR software, which ships with the EthIR LAN system automatically, configures your notebook to access the LAN and Internet.

This section describes:

- How to configure your Windows 98 notebook to connect to the Clarinet EthIR Switch via Direct Cable Connection (DCC).
- How to start and end a connection once configuration is done

Before You Begin — Needed Changes to Your System

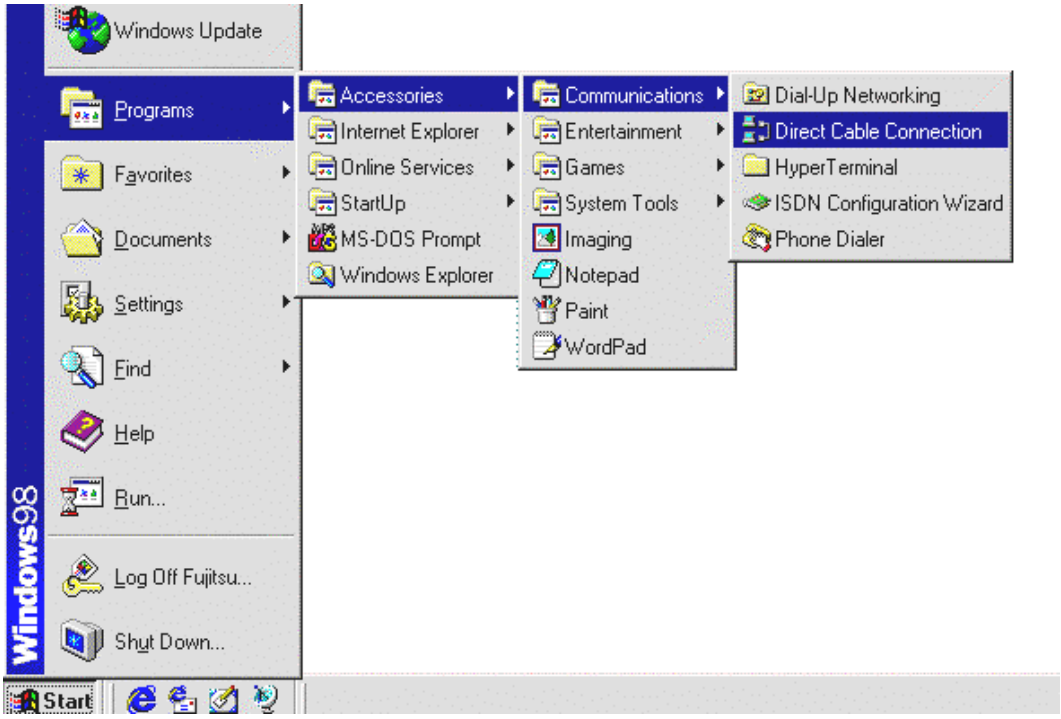
The following pages discuss the steps needed for a successful connection to a network via **Direct Cable Connection** (DCC). There are few changes necessary to achieve this—some of which may require your Windows CD-ROM and a system reboot. It may be helpful to do all these steps necessary all at one time. Please refer to the page number outlined for each of the following sections and read it carefully first.

- Remove any Ethernet PCMCIA adapter cards from your notebook
- Install **Direct Cable Connection** – DCC (pageF-5)
- Verify that Dial-Up Adapter is installed in your network configuration (APPENDIX B)
- If using Puma Technology's IR software see "Disabling Puma Technology's IR Communication Software" (APPENDIX C)
- Configure Infrared Monitor for DCC (page F-7)
- **OPTIONAL**: Specify workgroup to enable Network Neighborhood browsing and file sharing (APPENDIX D)

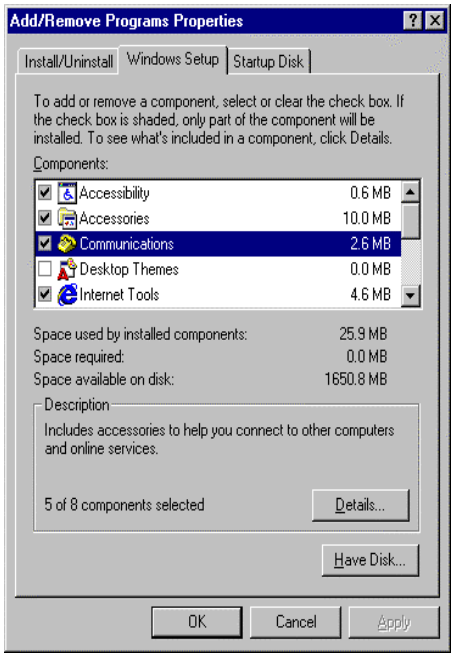
Install Direct Cable Connection

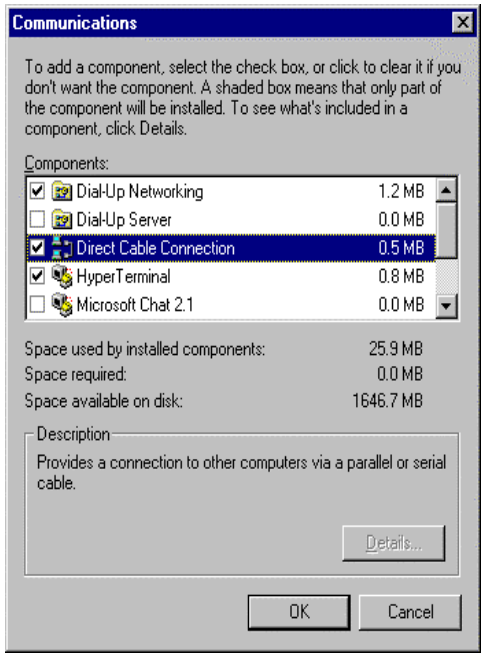
The first step is to check that Direct Cable Connection is installed in your Windows 98 notebook.

1. Select Start\Programs\Accessories\Communication\ from the task bar. If Direct Cable Connection is installed, you will see it as illustrated below.



2. If the Direct Cable Connection is already in this menu, skip the following steps and go to next section, Configure Infrared Monitor for Direct Cable Connection, on pageF-7. If there is no Direct Cable Connection in this menu, double-click on **Add/Remove Program** icon in `Start\Settings\Control Panel`. The system displays the following **Add/Remove** dialogs:



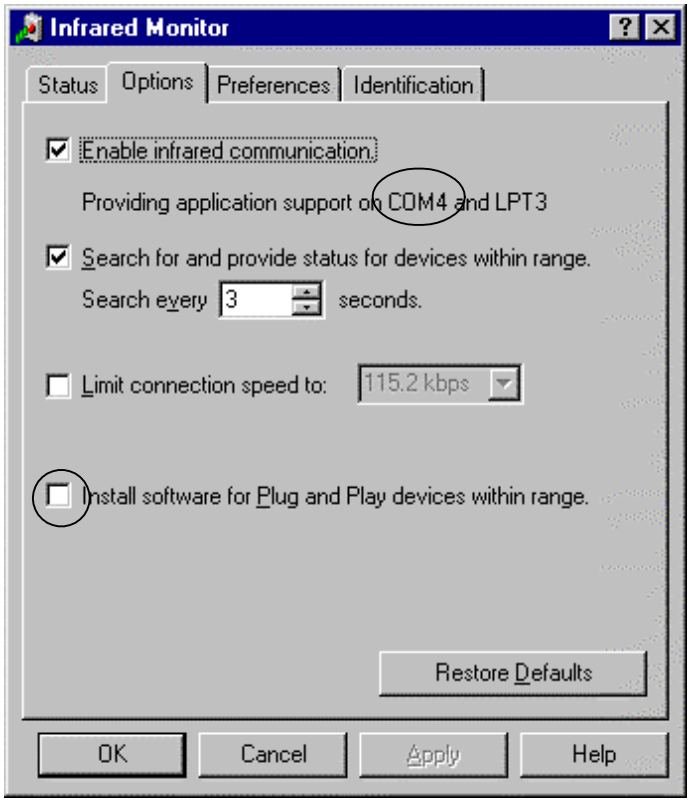


3. Click on **Windows Setup** tab, choose **Communications** then click on **Details** button.

4. Check the item **Direct Cable Connection**, as illustrated above, and then click **OK**. Click **OK** again in the next window. Windows 98 *may* ask for the Windows 98 CD-ROM to be inserted into your CD-ROM drive. If the CD-ROM is not available enter **`\WINDOWS\OPTIONS\CABS`** in the path line of the dialog box.

Configure Infrared Monitor for Direct Cable Connection

1. Double-click the Infrared icon under **`Start\Settings\Control Panel`**, select Options tab and uncheck the Install software for Plug and Play devices within range as illustrated below. Note the COM port under Enable infrared communication. This is the virtual COM port, which your notebook's IR port uses. In this example, the IR port uses COM4 (Refer to Configure Direct Cable Connection for the First Time, step 2, on page F-9).

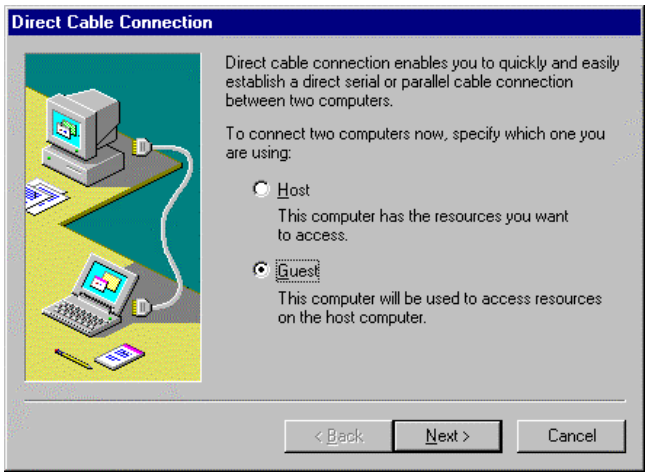


2. Click OK

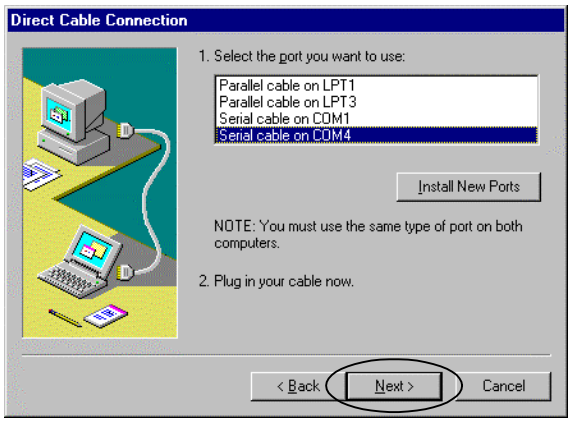
Configure Direct Cable Connection for the First Time

Configuration needs to be done only once. For successive connectivity using DCC you need only follow the steps under "Connecting to and Disconnecting From the Network" section.

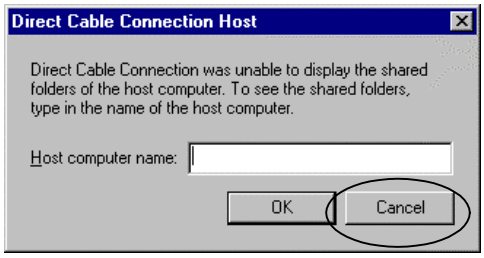
1. Select **`Start\Programs\Accessories\Communication\Direct Cable Connection`** from the task bar. The **Direct Cable Connection** window will open as shown below. Choose **Guest** then click the **Next** button.



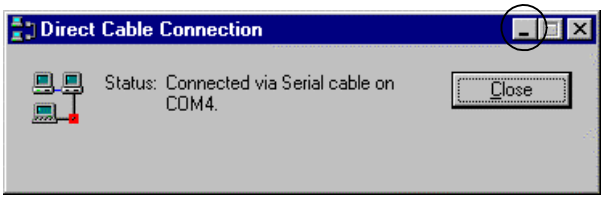
2. DCC will build a list of available ports for you to select from. Select **Serial cable on COM4** and click **Next** button. COM4 is the virtual communications port which your notebook's IR port is using.



3. Click **Finish** button. Make sure the EthIR Beam is pointed at your IR port. The system will connect and will ask for the host computer name as shown below. Do not enter a name. Instead, click on **Cancel**.



4. Your notebook is now configured for Direct Cable Connection. ***Do not click Close***. Rather, *MINIMIZE* the dialog unless you wish to terminate the connection.



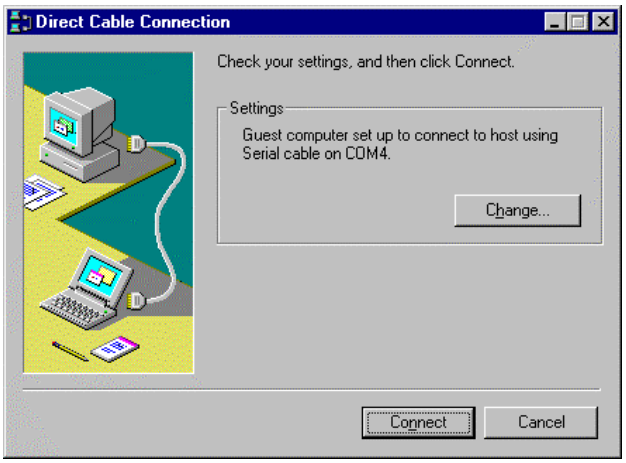
Connecting to and Disconnecting from the Network

The ClarinetIR software allows you a simple point and click solution to get connected with DCC. If this software is not available then the following instructions can help you achieve the same goal:

To connect the notebook to the network using Direct Cable Connection:

1. Face your notebook infrared port directly toward any EthIR Beam connected to the EthIR Switch.

2. Establish a remote connection by running DCC from the **Start** menu or desktop shortcut. A window pops up to display the status of the connection.



3. With your configured settings in place a dialog appears asking you to **Connect** as Guest on COM4. Click **Connect**.

4. Another window will ask for the host computer name. Choose **Cancel**.

Note: Once a session starts successfully, the status window displays a **Close** button. ***Do not*** click the close button *unless* you wish to terminate your DCC network session. To disconnect a DCC network session, click **Clos**e.

Note: In their network configuration, mobile users may have mapped drives from other networked sites or have settings to log on to a network other than the one they are trying to establish a connection with. Should error dialog boxes appear, simply click **Cance**l. The reason is that a domain name has been specified in the Networks configuration. There is no requirement to have this enabled in order to successfully use DCC.

Using Direct Cable Connection with Windows 2000 Notebooks

In lieu of the software the following directions can be followed and the same connectivity can be achieved. Please read through this entire section of the User Guide before configuring your system.

This section describes:

- How to configure your Windows 2000 notebook to connect to the Clarinet EthIR Switch via Direct Cable Connection (DCC).
- How to start a connection once configuration is done.

1. Go to **`Start\Settings\Network and Dial-Up Connections`** and double click on **Make New Connection**.

2. The following dialog box will appear, click **Next** to start the **Network Connection Wizard**.

3. For connection type, choose **Connect directly to another computer**, and
4. click **Next** to continue.

5. Configure your computer to connect as Guest, click **Next** to continue.

6. Select your Infrared port, click **Next** to continue.

7. Select the option **For all users**, click **Next** to continue.

8. Choose a name for you new Infrared connection, we suggest EthIR LAN. Click **Finish** to complete the process.
9. Once you have successfully created your new connection, Windows will bring you to the connection screen so you can begin using your new connection. You do not need a user name and password to connect to your EthIR Switch because the EthIR Switch ignores these fields. Prior to pressing the **Connect** button, make sure your EthIR Switch is configured properly and there is an EthIR Beam pointed towards the Infrared port on your notebook.

10. During the connection process, Windows will try and use protocols that are unnecessary to connect to your EthIR LAN. Place a check mark in the box next to, **Do not request the failed protocols next time** this will prevent

you from seeing this message in the future. Click **accept** to begin accessing your network.

Configuring Windows CE Handheld PCs

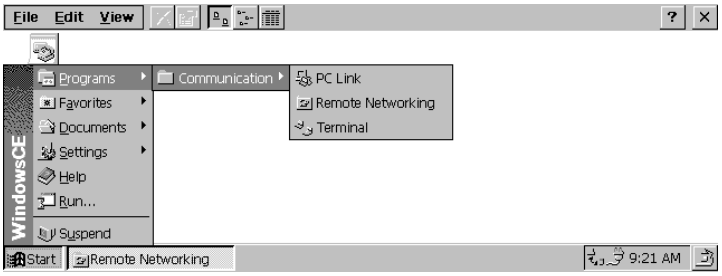
This section describes

- How to configure your HPC to connect to the Clarinet EthIR Switch.
- How to start and end a connection once configuration is done.
- How to specify the HTTP proxy server in Pocket Internet Explorer.

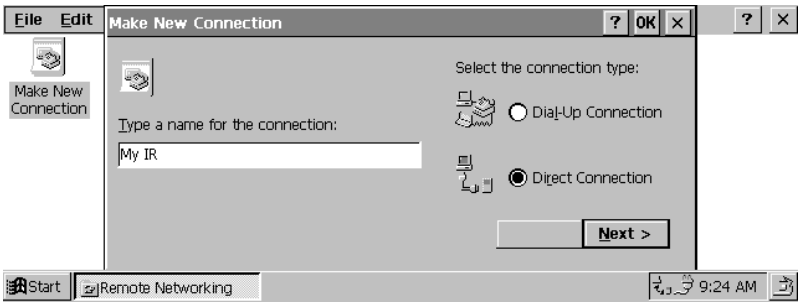
Adding Direct Connection to Remote Networking

Each Windows CE HPC is bundled with a Microsoft Windows CE communication package that enables you to add and configure a new connection to a remote networking system. Follow the following step to add a new remote connection:

1. Select **`Start\Programs\Communication\Remote Networking`** menu from the task bar, as illustrated below.

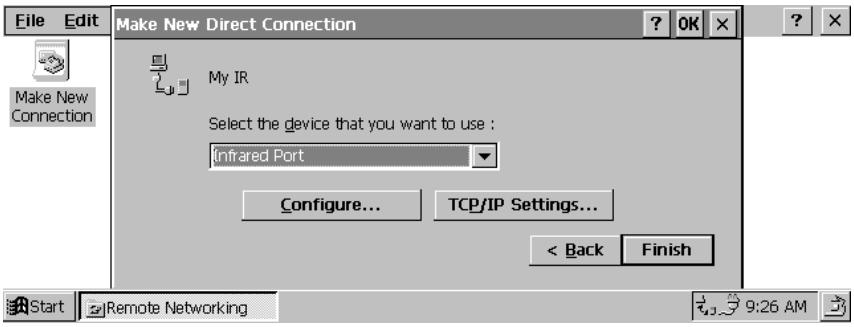


2. Double click on **Make New Connection**, which brings up the **Connection Configuration** dialog. Enter a name for the new connection and specify it as a direct connection, as illustrated below.



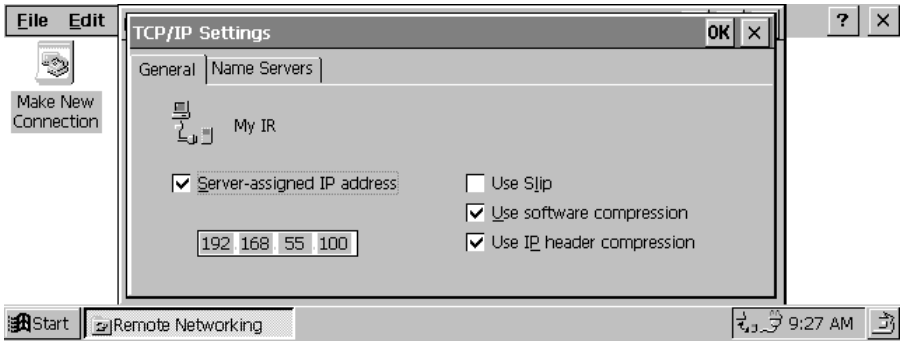
3. Click **Next** to display the **Make New Direct Connection** dialog. Select **Infrared Port** as the device. Typically, each HPC has a built-in infrared.

Note: It is unnecessary to click the Configure button because no change is required to the default settings in Device Properties.

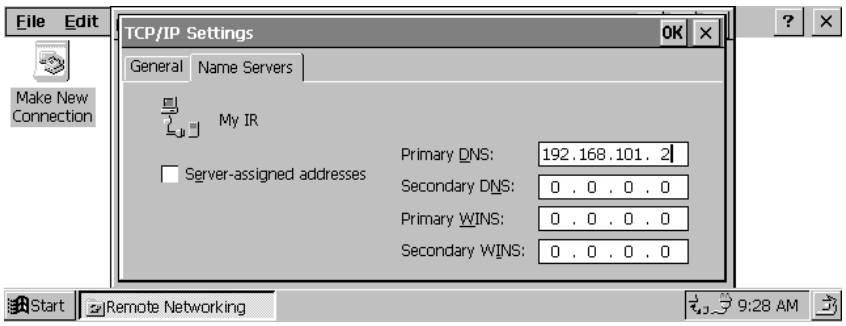


4. Click **OK** to return to **Make New Direct Connection** dialog and click on **TCP/IP Settings…**. Currently, Clarinet supports the specification in the **General TCP/IP** dialog box. Again, *no change is required* although it would be helpful to understand what is entailed in these dialogs.

Note: Support of some of the items is negotiated as the connection session begins. The EthIR Switch from which the EthIR Beam is extended automatically assigns the IP address of your HPC. SLIP protocol is not supported. Software compression and IP header compression are negotiated. The EthIR Switch assigns the HPC IP address. Compression is not supported.



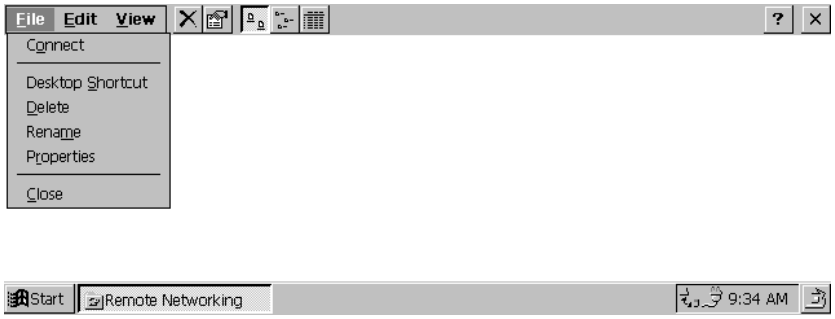
5. Click on the **Name Servers** tab.



6. The domain name server are configured in the Switch and do not have to be configured into the CE device. The Switch passes all information to the CE device.

7. Click **OK** to finish the configuration of the new connection.

Hint: To make your tasks easier to accomplish, consider creating a Desktop Shortcut: Click on the **Make New Connection** icon and select **`File\Desktop Shortcut`** in the **Remote Networking** applet.



Connecting to and Disconnecting from the Network

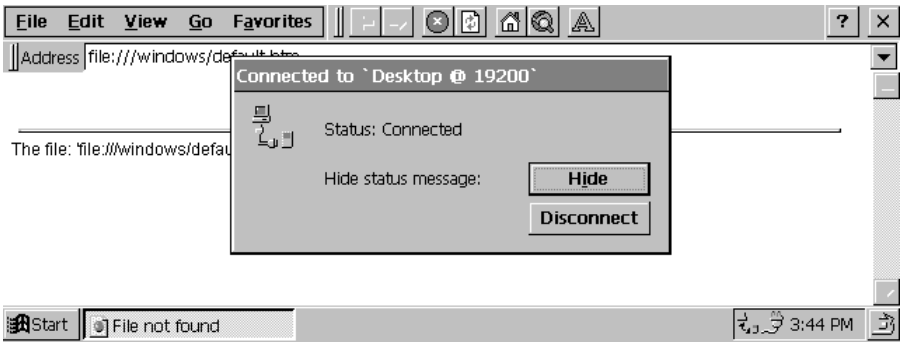
To connect a Windows CE handheld device to the network through the Clarinet EthIR Switch:

1. Face your device's infrared port directly toward any EthIR Beam connected to the Switch.
2. Establish a remote connection by double clicking on the **IR** icon in the **Remote Networking** applet or click its shortcut on your desktop. A **Connection** window pops up to display the status of the connection.

Note: As events occur, they are displayed in the status window, such as handshaking and user authentication. Audio notice is provided once a session successfully starts or fails to start.

3. If an error occurs while a connection is being established, the device repeats the connection attempt four times as displayed in the pop-up status window. Wait until all four attempts fail before taking further action. If all four attempts fail, repeat steps 1 and 2.

Troubleshooting Note: A common connection failure occurs when incorrect IP addresses are entered into the IP Pool or are IPs that are already in use by other users on the network.

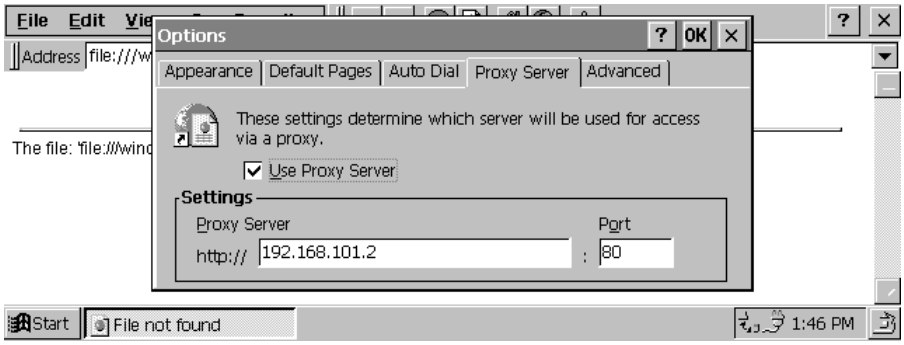


4. Once a session starts successfully, the status window displays two buttons: **Hide** and **Disconnec**t. Consider hiding the pop-up window. A connection indication icon resides on the task bar. Clicking on the icon displays the connection dialog once again.

5. To disconnect a network session, click **`Start\Programs\Communication\Remote Networking`** and click the **IR** icon and click **Disconnec**t.

Specifying an HTTP Proxy Server

Although an option exists in the EthIR Switch to point to a proxy server, this information is not passed on to Windows CE devices. It must be entered manually. To specify where the HTTP proxy server resides, select the menu item **`View\Options`** in Internet Explorer. When specifying the proxy server, enter the IP address instead, as in the example illustration below.



Using IrLAN with Apple MacOS Powerbooks

In most cases, Apple Powerbooks running MacOS 8.5 or later (including models G3, 2400, and 3400 as well as early versions of the iMac) are already configured for use with Clarinet Systems' EthIR LAN. Only minor changes on your part are required to enable the Infrared communication as follows:

1. From the **`Apple Menu\Control Panel`** pull down menu, launch **AppleTalk**. You have three connection options: **Ethernet built-in**, **Infrared Port (IrDA)**,
2. and **Remote Only**. Choose Infrared as your connection method.

3. Next, configure your TCP/IP settings according to your networking scheme. This is done in the **TCP/IP** applet, again from the **`Apple Menu\Control Panel`**, pull down menu, and launch **TCP/IP**.

4. In the TCP/IP applet, specify the connection method (again, Infrared Port (IrDA)). If your network supports DHCP server services then select DHCP as your configure method. If not, select manual and obtain the appropriate configuration settings from your network administrator.

5. Point a properly configured EthIR Beam towards your PowerBook's infrared port. The **AppleTalk** dialog will monitor connection and disconnection of infrared transmission.

Configuring Palm Organizers

Supports Palm Organizers (Palm IIIx, IIIxe, V, Vx, and VII) with OS 3.3 or greater installed. Network synchronization to a partner computer via the network using the EthIR Switch, allows Palm users complete mobility without having to be physically cradled to the computer. To setup a Palm that has already been locally synchronized to a partner notebook for infrared network synchronization, perform the following:

1. In the **Home** menu click **Prefs**. In the upper right corner click the down-arrow for the **Prefs** pull-down menu and make the following changes:

Connection:	IR to a PC/Handheld
Network:	Choose any service except Windows RAS
✓ User Name	leave blank
✓ Password	leave blank
✓ Connection	IR to a PC/Handheld

2. In the **Home** menu, click the **HotSync** icon and choose the **Modem** option. The name of your connection service will appear directly below the HotSync graphic. Disregard the phone number entry. Click the **Option List** button (bottom-left button on the bottom panel). Change as follows:

Modem Sync Perfs:	Network
LANSync Prefs:	LANSync
Primary PC Setting	Enter NetBIOS name of partner computer or leave blank. Enter the IP address and subnet assigned to the partner computer. If DHCP assigned, enter at lease the first 3 octets (e.g. 192.168.101)
Connection Setup	IR to a PC/Handheld

3. On the partner computer, right click on the **HotSync** icon on the system tray and insure that **Network** is checked on. Point the Palm's infrared port toward an EthIR Beam and tap the **HotSync** icon. Synchronization should take place. To sync locally via a cradle at any time simply choose the **Local** option and sync. *No changes have to be made*. To sync via infrared just choose **Modem** again.