

### Connecting a Sixnet RTU as an Internet Client via a 3COM Telephone Interface

**Abstract:** This technical note explains the procedures used for installing, configuring and connecting a SIXNET RTU as an Internet client via the 3COM OfficeConnect 56K LAN Modem.

The 3COM OfficeConnect 56K LAN Modem allows users to share one routed analog connection to an Internet Service Provider (ISP). This type of connection allows SIXNET RTUs (VersaTRAK and SiteTRAK) to act as Internet clients, addressing servers through their IP addresses. The 3COM OfficeConnect 56K LAN Modem is connected to the computer's Ethernet port and through its telephone interface, logs onto the user's ISP. The SIXNET RTUs messages are wrapped into appropriate protocols to make the telephone link transparent. This telephone adapter has been tested by RETX.com, a SIXNET OEM customer that reads "time interval" power demand data into their central database from a large number of electric power meters connected to SiteTRAK remote data managers. With this Ethernet to telephone adapter, RETX can have 100% of their customers connected to their database as simple Internet clients. This scheme avoids the complexities and expenses associated with a "SCADA style" physical connection network and bypasses many security concerns expressed by their customers.

### Requirements:

In order to install the 3COM OfficeConnect 56K LAN Modem the user must have the following:

- A 3COM OfficeConnect 56K LAN Modem Unit
- A SIXNET VersaTRAK or SiteTRAK RTU with an Ethernet Port
- A dial-up Internet Service Provider (ISP) Account
- A computer equipped with a web browser that is both frames-capable and Javascript-enabled. **(Required for configuring the 3COM OfficeConnect 56K LAN Modem)**
- 10/100BASE-T Ethernet card in your computer
- TCP/IP Protocol Enabled (built in with Windows 98, 95, 2000, NT and ME )
- 386, 486, or Pentium processor (PC's only)
- CD-ROM Drive

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## **Internet Service Provider (ISP) Information:**

The 3COM OfficeConnect 56K LAN Modem must connect to a generic dial-up ISP. Commercial ISP's such as America Online, Prodigy, Netzero, and Juno use proportional dial-up, which means their own software and interface need to be used in order to establish a connection to their service. The 3COM OfficeConnect 56K LAN Modem uses its own dial-up wizard and therefore cannot be used with these types of ISP's.

## **Installation:**

**\*\*Do not connect more than one computer for the initial installation. After installation and configuration is completed additional computers may then be added.**

The following are step-by-step instructions to help you install your modem. You will need to temporarily connect your modem to a computer for configuration purposes.

- Step 1:** Turn off your computer.
- Step 2:** Connect one end of a straight-through Ethernet Cable into one of the LAN Modem ports labeled *LAN*. Connect the other end into the 10/100BASE – T Ethernet port on your computer. If you are using an Ethernet hub or switch, select the type of cable that is appropriate (straight-through or crosswired).
- Step 3:** Connect one end of an analog phone cable into the LAN modem port labeled *LINE*. Insert the other end of the phone cable into your phone jack.
- Step 4:** Plug in the power supply. Watch for the following front panel activities:
- PWR and AA LED's illuminate
  - Alert LED flashes momentarily as the unit undergoes a power-up self-test diagnostic
  - AA LED goes off, and only the PWR LED remains lit
- Step 5:** Turn on your computer.

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## **Configuration:**

Configuration for the 3COM OfficeConnect 56K LAN Modem is done through a web browser. The following are step-by-step instructions to help you configure your modem:

- Step 1:** Launch your Web browser. Enter <http://3com.oc.lanmodem> or <http://192.168.1.1> into the address field. A welcome message will appear. Click Continue to begin the configuration.
- Step 2:** The modem's internal clock is automatically synchronized to the date and time on your workstation.
- Step 3:** To restrict access to the LAN modem's configuration, you can enter a password in the password field, and in the confirm password field. If you do not want access restricted, leave both fields blank and click the *Submit* button to proceed to the modem's main configuration page.
- Step 4:** To configure your ISP connection, select the *ISP Wizard* button. Enter your ISP information. You can choose any name for the ISP Name. If you are not sure about the DNS server address, leave this field blank. After you click *Continue* a call is placed to your ISP and a message confirming proper configuration appears.

## **3COM OfficeConnect 56K LAN Modem WebWizard:**

The following is an overview of the major features available in the 3COM OfficeConnect 56K LAN Modem's WebWizard:

- Home:** Displays the modem's main configuration page.
- ISP Wizard:** This allows for the configuration of a new or existing ISP Connection.
- Manual Calling:** Allows for calls to be made and terminated manually by the user.
- Statistics:** Displays the statistics page where the user can view information about the system itself, the current call, the last call, the last 10 calls, and service provider information.
- Advanced:** Allows for the Local DNS Table to be displayed, searches for upgraded firmware, performs maintenance, and allows for the addition and configuration of virtual modems.

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**Password:** Allows for the modem's password to be changed as well as establish lock configuration over the LAN Modem's parameter settings.

**Service Providers:** Allows for the creation of a new Service Provider profile or to access existing Service Provider parameters.

**Workstation Configuration:** When the Workstation Configuration tab is selected, the following fields are displayed:

**Name:** This is the name assigned to this particular workstation on the LAN.

**IP Address:** This address is assigned to the 3COM OfficeConnect 56K LAN Modem. It is best to leave the default.

**Reserved:** If the user has workstations on their LAN with static IP addresses and other workstations on the same LAN with dynamic IP addresses, they should check this reserved box for the workstations with static IP addresses to ensure that they are not dynamically assigned to other workstations.

**Release:** Use this button to release this particular workstation from its Service Provider associations

**Data Call Parameters:** Allows for the efficient management of resources on the LAN. The default settings are often sufficient and may be left unchanged.

**Current Call Information:** Displays information regarding the current connection.

**LAN Parameters:** When the LAN Parameters tab is selected, the following fields are displayed:

**Name:** The name assigned to the LAN Modem.

**IP Address:** The default IP address assigned to the LAN Modem is set to 192.168.1.1. This IP address uniquely identifies the LAN Modem on the local network.

**Subnet Mask:** The default subnet mask assigned to the LAN Modem is 255.255.255.224. The subnet mask is the part of the IP address that distinguishes other machines on the same LAN.

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**Local Domain Name:** Lets the user enter a name that they would like to use for their local domain. This will be automatically translated into the users IP address. This field is not required. It should be left blank if the user is unsure about how to configure a local domain name.

**Enable DHCP Server:** When enabled, the Dynamic Host Configuration Protocol (DHCP) server automatically assigns an IP address to a newly attached Ethernet device on the network. To enable, select Yes. To disable, select No.

**Using DHCP: (NOTE: Before attempting any of the following consult your network administrator.)**

1. With DHCP Enabled: The default is to use the LAN modem as a DHCP server and configure the Ethernet devices as a DHCP client. This mode can be used if all the attached Ethernet devices support DHCP and the network does not already have a DHCP server. SiteTRAK modules support DHCP. VersaTRAK modules do not.
2. The DHCP server option on the modem must be disabled if your network already has a DHCP server or has devices that do not support DHCP, such as VersaTRAK RTUs.

**Enable NetBios filtering: *For Windows Users:*** NetBIOS is used by Windows 98, 95 and NT for local file and printer sharing. This protocol can make spurious DNS requests which can inadvertently cause the LAN Modem to establish unwanted calls to the Service Provider and subsequent charges to the users' phone bill. Three options are provided:

**Never Block:** This option disables the NetBIOS filter, allowing all NetBIOS traffic to pass to the WAN.

**Always Block (default):** This option blocks all NetBIOS traffic from being passed to the WAN.

**Block Call Initiation:** This option prevents NetBIOS calls from initiating automatic data calls. Note that once a call has been established, choosing this option may prevent a call from automatically timing out.

## **SIXNET RTU Configuration**

**VersaTRAK RTU:** To configure the VersaTRAK RTU, assign a fixed IP address to each VersaTRAK RTU.

**SiteTRAK:** To configure SiteTRAK, depending upon which configuration matches the LAN Modem configuration, either enable DHCP or assign a fixed IP address.

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## **Tests Performed**

Two VersaTRAK RTUs were used for testing. A “client” VersaTRAK was connected to the LAN modem and configured to exchange I/O with a “server” VersaTRAK. The “server” VersaTRAK was connected to a computer. This computer provided a continuous connection to the Internet.

An outgoing I/O request message from the “client” VersaTRAK signaled the LAN modem to dial and establish an Internet connection. I/O was exchanged successfully after the Internet connection was established.