

Imagenex Ethernet Setup Guide for the Model 837 DeltaT

Updated on March 16, 2005

Introduction

The Imagenex Model 837 DeltaT sonar system consists of an underwater sonar head connected via Ethernet directly (or indirectly) to a Windows[®] based computer.

This document covers the necessary setup procedures to enable your Windows[®] XP[®] based PC to communicate with the sonar.

Ethernet Cable

The included Ethernet cable specifications are:

- Cat 5e
- RJ-45
- 568B wiring scheme

If this cable needs to be replaced, ensure that the above specifications are met.

Configuration of Windows XP Ethernet Communications

For the DeltaT system, the following Address's are used

PC

IP Address	192.168.0.X
Subnet Mask	255.255.255.0

Where 'X' is a decimal number between 3 and 255. The number '1' is reserved for a network server, and '2' is reserved for the DeltaT sonar head.

The DeltaT sonar head has a statically assigned IP Address of **192.168.0.2** . This is the number to enter in the “.INI” file as shown in Figure 3

The Recommended PC's IP address and Subnet Mask on the PC are:

IP Address	192.168.0.3
Subnet Mask	255.255.255.0

On a Windows[®] XP[®] based machine, this is done as follows:

1. Navigate the Control Panel and double click “Network Connections”
2. Right click on the Ethernet interface you wish to connect with and select “Properties”

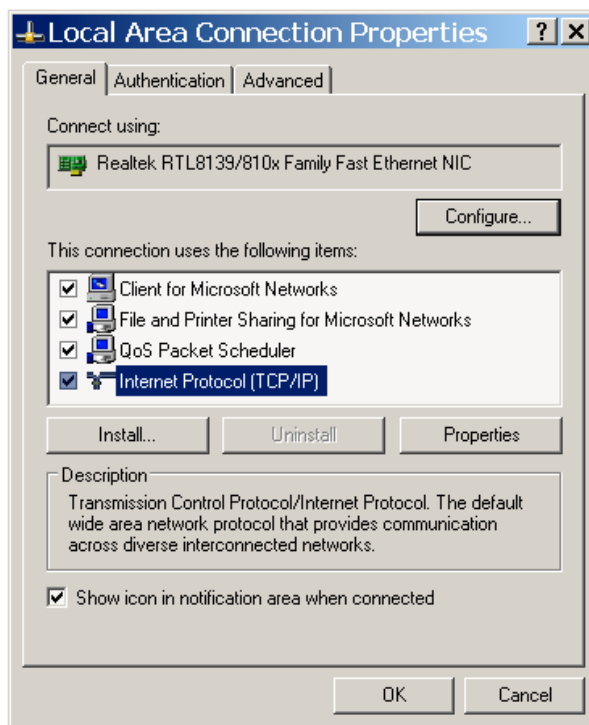


Figure 1 - Local Area Connection Properties Dialog Box

3. Select Internet Protocol (TCP/IP) and select “Properties”

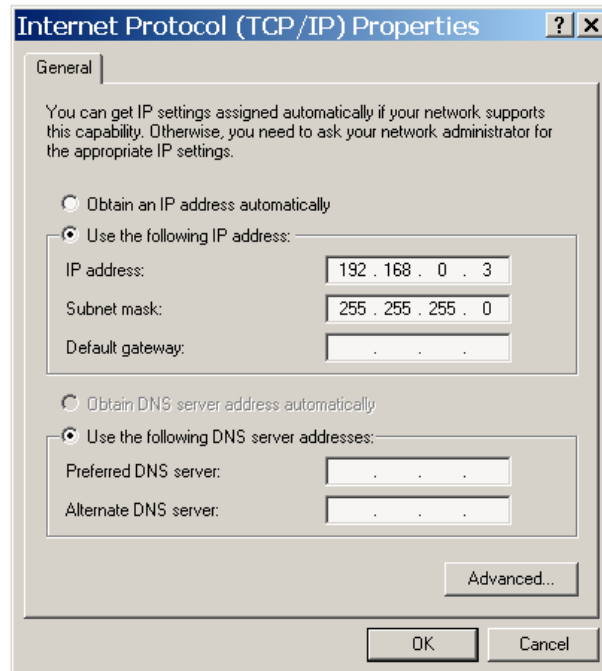


Figure 2 - TCP/IP Priorities Dialog Box

4. Enter the information shown above in Figure 2 and click “OK” to accept the changes.
5. Click “OK” again to accept the changes.

Now your computer is on the same “*Network*” as the sonar head. When starting the DeltaT.exe program, the IP address stored in the “DeltaT.INI” file is read and a connection will be established.

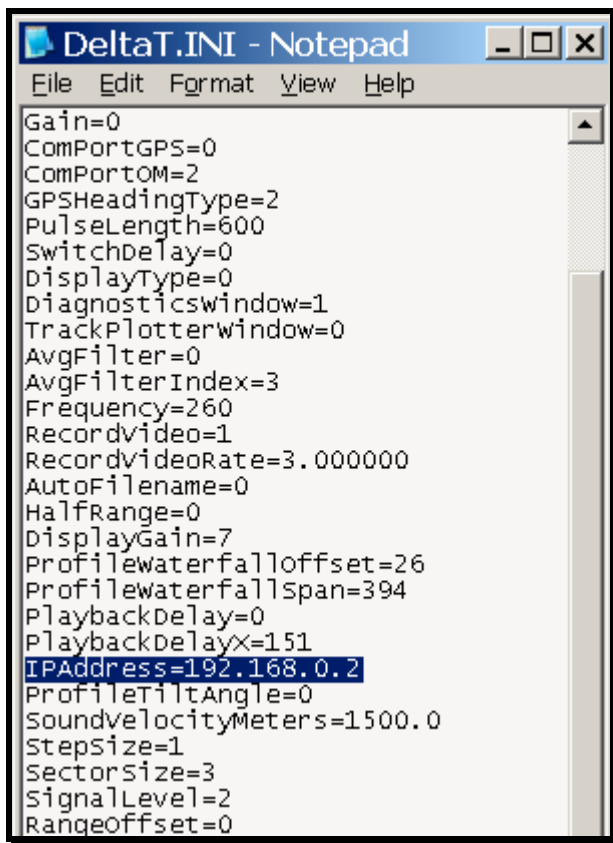


Figure 3 - DeltaT.INI file excerpt

The sonar head has a statically assigned IP Address of **192.168.0.2** . Enter this number in the “DeltaT.INI” file.

The sonar head will run fine. However, if communication to the head does not function properly, try these suggestions:

1. Disable any network bridges that are present

- A network bridge allows a separate port, such as “USB”, or “Firewire” to piggyback the Ethernet connection.
- Under “Network Connections”, if there is a network bridge icon, disable it.

Under “Network Connections”, right-click on the Ethernet card and select properties.

2. Clear unnecessary network protocols

- De-select all services except for “*Internet Protocol (TCP/IP)*”

3. Remove any firewalls present (Note that Windows® XP® has a rudimentary firewall built into it. Disable this one first).

- Select the “Advanced” Tab. De-select the Firewall option (if present).

Click on “Configure” (in the “General” tab) and a new dialog box will appear.

4. Set Link speed to “Auto” or “10Mbps”

- In the “Advanced” tab, select “Link Speed / Duplex Mode” and set to either “*Auto Mode*” or “*10 Full Mode*”.

5. Disable any power saving that shuts down the Ethernet card.

- In the “Advanced” tab, select “Link Down Power Saving” and set to “*Disable*”.
- In the “Power Management” tab, de-select any power saving option.

Sharing an Ethernet Device with the Sonar and Internet

If the computer will be using the same Ethernet card for both the sonar and Internet uses (**NOT** at the same time), set the card for the sonar using the above procedures. When using the Internet, you will need to reset the IP, Subnet, Default Gateway, and DNS Server to correspond to your Internet Service Provider. On most modern systems, this may be as simple as setting the system to “Obtain settings Automatically” This will set the computer to use the DHCP protocol.

The DeltaT sonar head has a statically assigned IP Address of 192.168.0.2 . To re-use the sonar, the above procedures **MUST** be followed

Appendix A – Setting up a Direct Connection

This is the simplest way to connect to an Imagenex Ethernet Sonar System (**IESS**) to a computer (**PC**) as shown in Figure 4. In this configuration, there is simply a direct connection between the **IESS** and the operating PC. Note that the PC has a static IP address of “192.168.0.157”.

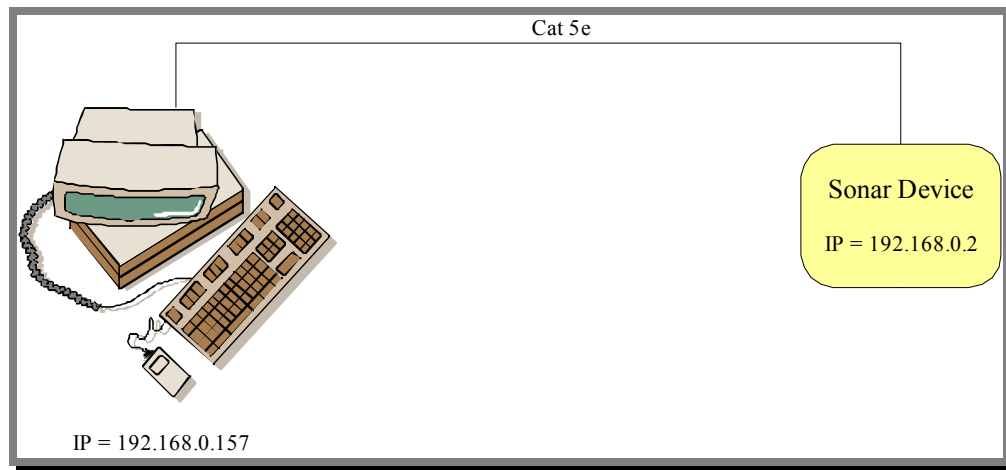


Figure 4 - Connecting the IESS via Direct Connection

Appendix B – Setting up a LAN

To connect an Imagenex Ethernet Sonar System (**IESS**) to a Local Area Network (LAN), refer to Figure 5. The advantage of this setup is that the **IESS** may be operated from any computer that is connected to the LAN. Note that the server computer must be running Windows[®] XP[®] PRO in order to set up a LAN. This is because only XP[®] PRO contains the necessary DHCP server component to auto-configure the client PC's. The server also has a static IP address of "192.168.0.1" and no other PC on the network may have this IP. Currently, the **IESS** does not support DHCP and is simply "piggy-backing" the network by using an IP that is on the same Subnet Mask as the LAN.

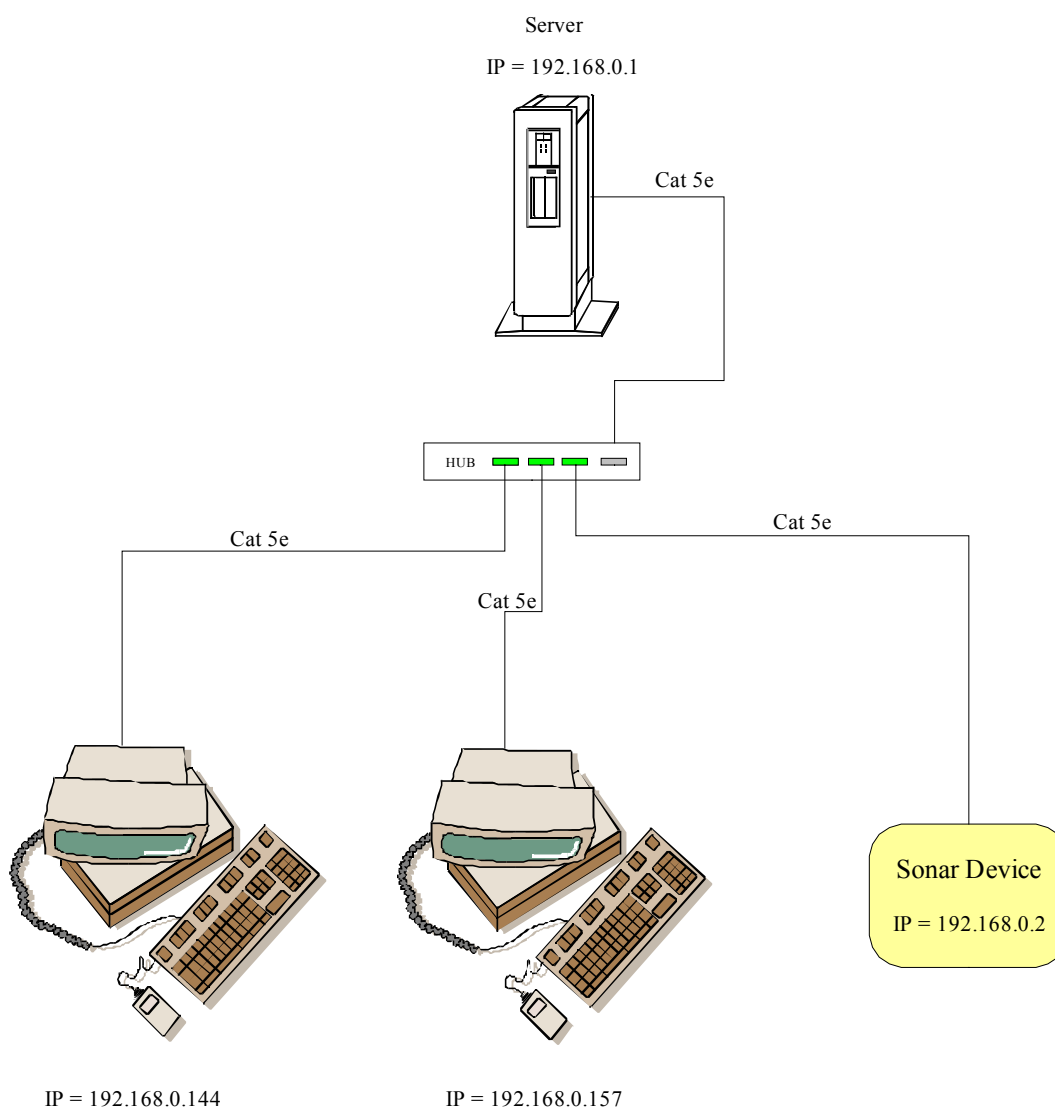


Figure 5 - Connecting the IESS via a LAN

Appendix C – Setting up a Networked LAN

To connect an Imagenex Ethernet Sonar System (**IESS**) to a networked Local Area Network (LAN), refer to Figure 6. This setup consists of two LAN's interconnected via a router. The router acts as a server to the LAN that is directly connected to the **IESS**. The advantage of this setup is that the **IESS** may be operated from any computer that is connected to either LAN. The server has a static IP address of (for example) "172.16.0.1". The router essentially has two sides. One side is configured as a client ("172.16.0.127") and the other side is configured as a server ("192.168.0.1"). Currently, the **IESS** does not support DHCP and is simply "piggy-backing" the network by using an IP that is on the same Subnet Mask as the LAN.

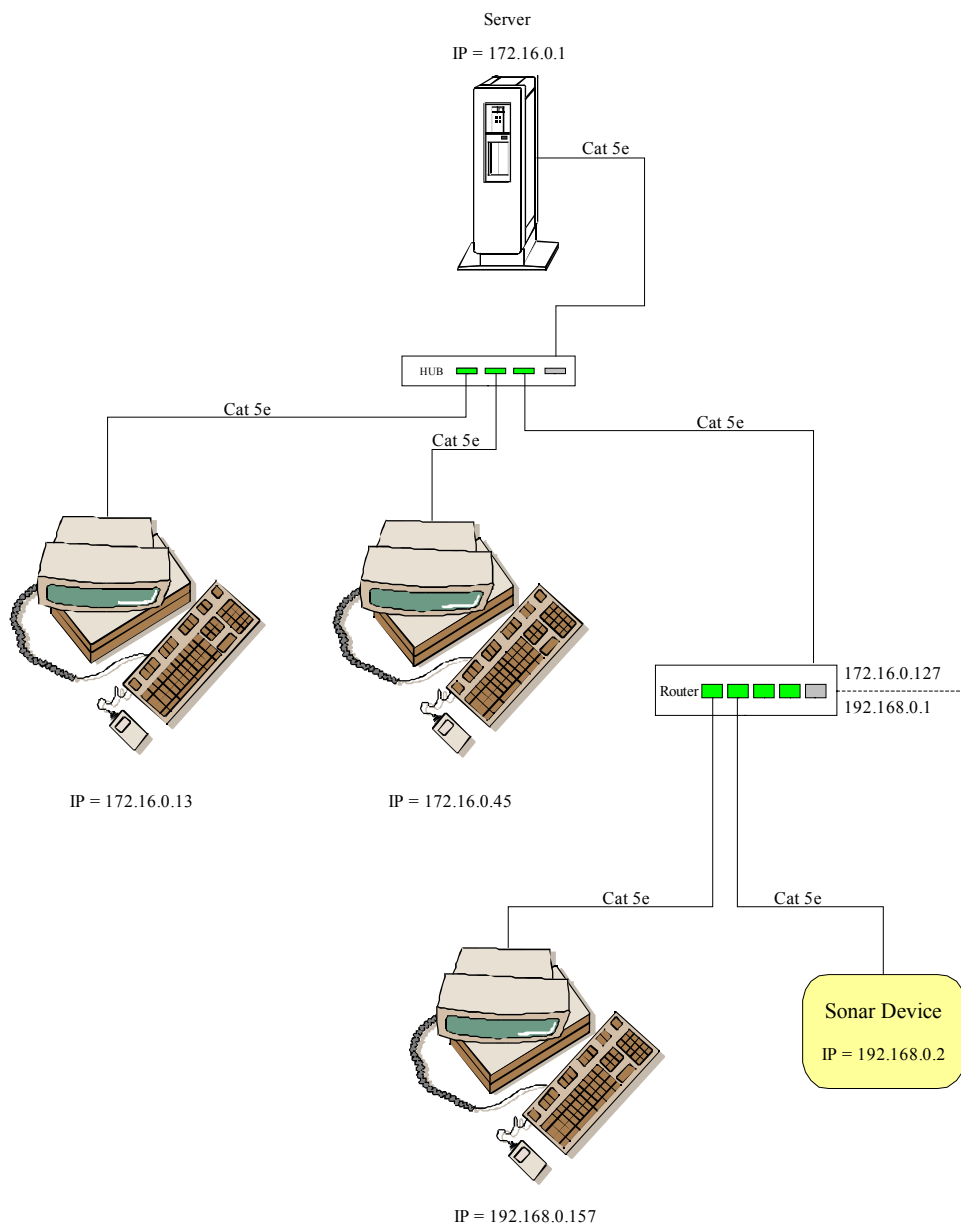


Figure 6 - Connecting the IESS through a multiple LAN