

TCP/IP DIM

Installation Guide

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Introduction

General

This manual contains procedures to install a TCP/IP DIM (TDIM) Module into the following consoles:

- Veeder-Root TLS-350 Consoles
- Red Jacket ProMax Console

If this is a new installation or if site preparation is necessary, refer to the console's Site Preparation and Installation manual, or contact your Veeder-Root representative for assistance.

TCP/IP Interface Requirements

Minimum system requirements for TDIM Module operation are listed below:

- Console system software: Version 15 or higher - Version 21 or higher is recommended
- Network connection to a PC requires a hub. Connecting to a hub requires a straight CAT 5 cable
- **Direct connection to a PC requires an ethernet crossover cable**
- Connection to a LAN or WAN
- Knowledge of networking

TCP/IP DIM Kit

- TLS-350/ProMax Console Kit (P/N 330020-425):
 - TDIM module (P/N) 332328-002
 - Wiring harness (P/N 330584-001)
 - Installation Guide (P/N 577013-858)

Contractor Certification Requirements

Veeder-Root requires the following minimum training certifications for contractors who will install and setup the equipment discussed in this manual:

Level 1 Contractors holding valid Level 1 Certification are approved to perform wiring and conduit routing, equipment mounting, probe and sensor installation, tank and line preparation, and line leak detector installation.

Level 2/3/4 Contractors holding valid Level 2, 3, or 4 Certifications are approved to perform installation checkout, startup, programming and operations training, troubleshooting and servicing for all Veeder-Root Tank Monitoring Systems, including Line Leak Detection and associated accessories.





Warranty Registrations may only be submitted by selected Distributors.



Related Manuals

576013-623	TLS-3XX/ProPlus/ProMax Series System Setup Manual
576013-879	TLS-3XX/ProPlus/ProMax Series Consoles Site Prep and Installation Guide

Safety Precautions

The following safety symbols are used throughout this manual to alert you to important safety hazards and precautions.

 <p>EXPLOSIVE Fuels and their vapors are extremely explosive if ignited.</p>	 <p>ELECTRICITY High voltage exists in, and is supplied to, the device. A potential shock hazard exists.</p>
 <p>TURN POWER OFF Live power to a device creates a potential shock hazard. Turn Off power to the device and associated accessories when servicing the unit.</p>	 <p>READ ALL RELATED MANUALS Knowledge of all related procedures before you begin work is important. Read and understand all manuals thoroughly. If you do not understand a procedure, ask someone who does.</p>

⚠ WARNING	
 	<p>You are working with a device in which potentially lethal voltages may be present.</p> <p>Death or injury may result if safety precautions are not followed.</p> <p>1. Read all instructions and warnings.</p>

TDIM Module Installation

Installation of the TDIM Module consists of:

1. Verifying the module's configuration,
2. Installing the module in the TLS-350 Console,
3. Setting up the module (page 7), and
4. Connecting the module to the local area network (page 11).

Verifying TDIM Module Configuration

Key components of the TDIM Module are shown in Figure 1.

 **IMPORTANT!** Write down the ethernet address from the label on the back of the TDIM board. You will need to enter this number for the TCP/IP board's hardware address in "TDIM Module's IP Address/ Configuration Setup" on page 11. Also record the rev of the board as it may be needed in setup.

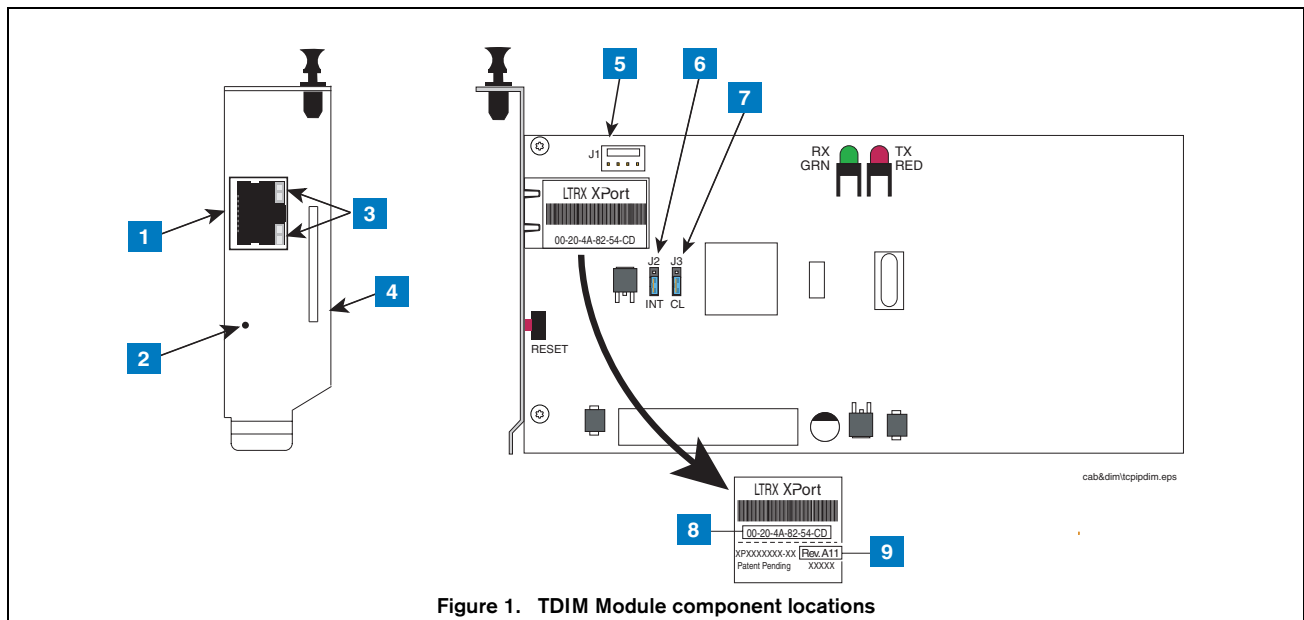


Figure 1. TDIM Module component locations

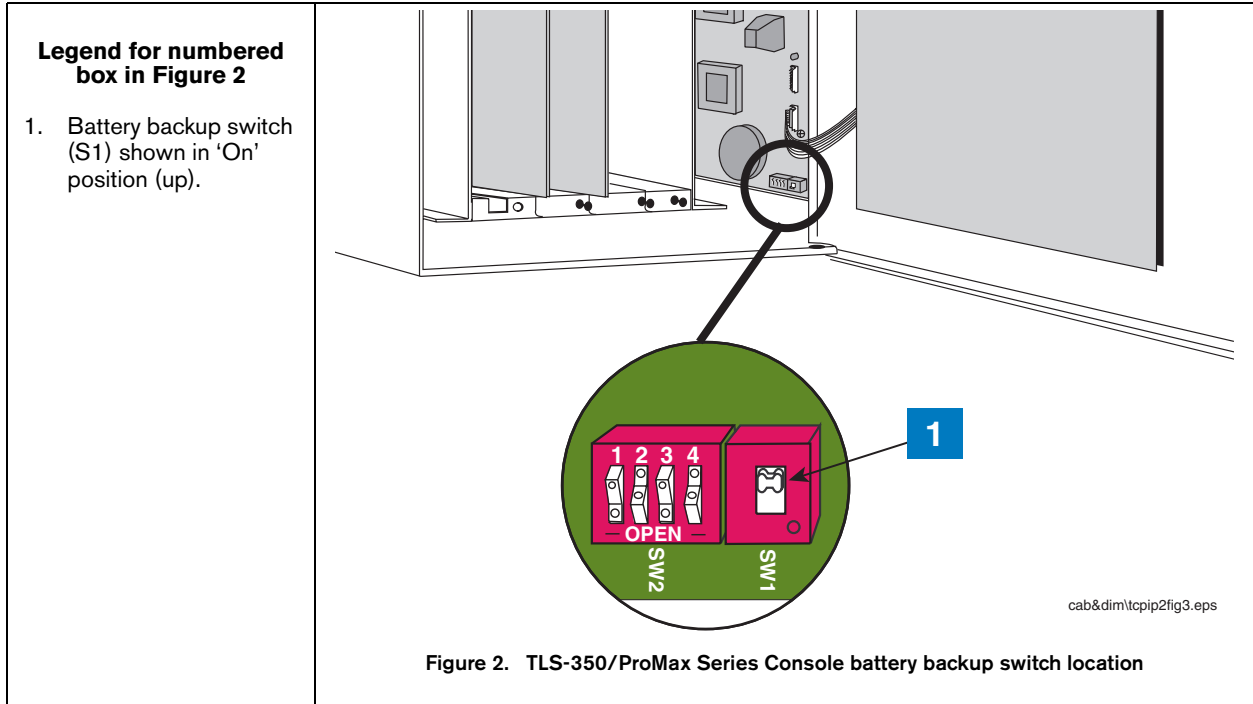
Legend for numbered boxes in Figure 1

1. RJ-45 Connector
2. Reset button access
3. Network connection/activity LEDs
4. Module end plate
5. J1 Connector
6. J2 Jumper - Interrupt
7. J3 Jumper - Chip Select
8. Write down the ethernet MAC address from the label on the LTRX XPort module (in this example, 00-20-4A-82-54-CD). You will need this address for the TDIM Module setup.
9. Also record the rev number (in this example A11). It may be needed for the TDIM Module setup.

Installing the TDIM Module in the Console



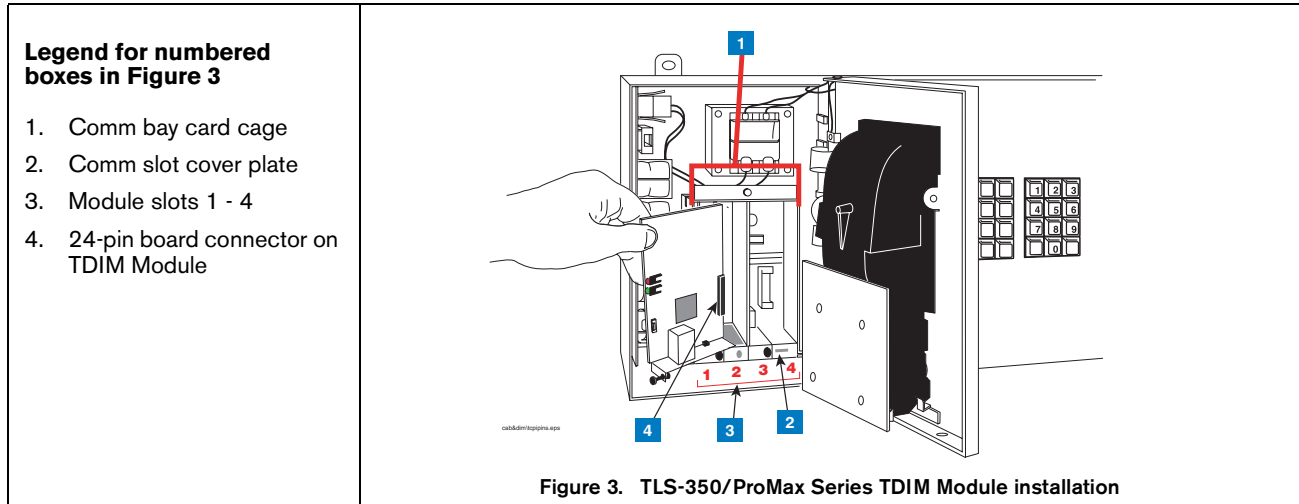
1. Open the left door of the console. Verify that the battery backup switch (SW1) is in the 'On' position (see Figure 2), then turn off power to the console.



2. Installing the TDIM Module in slots 1 - 3 (Preferred Location)

The TDIM module can be installed in any empty slot of the Comm Bay card cage, but the module's default settings require that it be installed in slots 1 - 3.

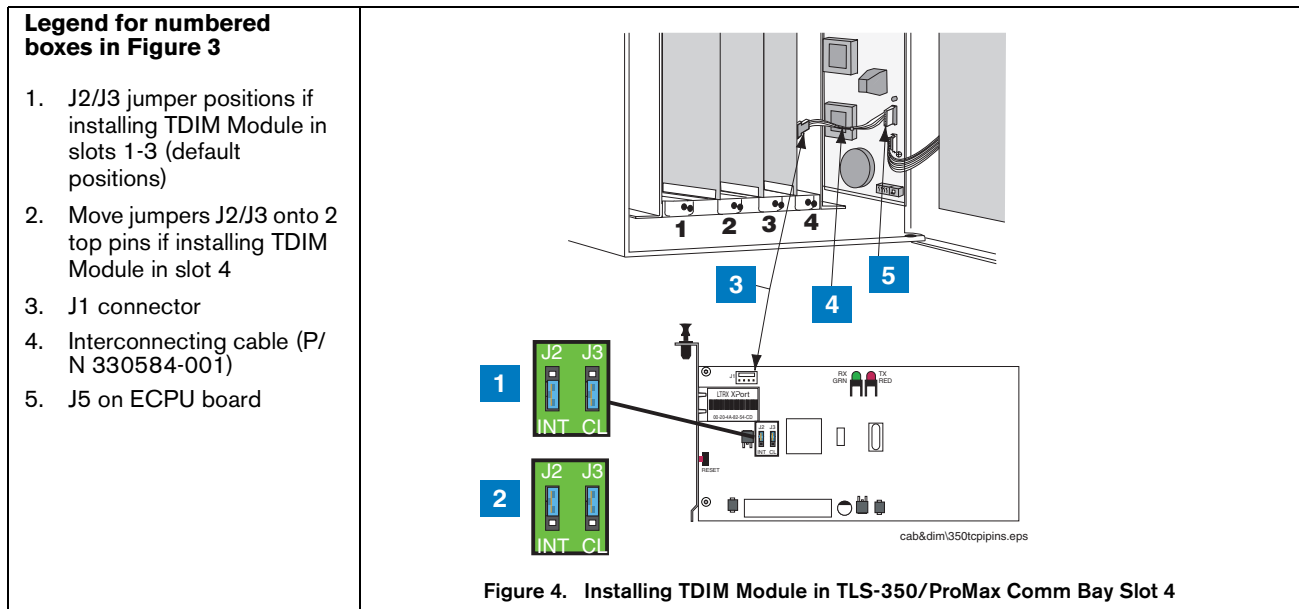
If your console has a snap connector which secures the cover plate in the card cage, pull it out and lift out the cover plate. If your console has "knockout" cover plates, open the printer door and insert a flat blade screw driver in the slot provided in the front of the cover plate you are removing and twist it to break the front set of metal securing tabs (ref item 2 in Figure 3). Once the front tabs are broken, carefully move the loosened end of the plate up and down until the rear set of securing tabs break. Remove and discard the cover plate. Slide the module into the open slot until the motherboard connector is snugly seated. Do not apply excessive force when installing the module. With your thumb, push in the black retaining fastener on the end plate until it snaps into the hole in the card cage.



Installing the TDIM Module in slot 4

If slots 1 - 3 are in use, or if you want to free up slots 1 - 3 for other modules, the TDIM Module can be installed in slot 4. To use slot 4, you must move jumpers J2 and J3 on the module onto the 2 top pins, and connect the cable (P/N 330584-001) from the kit (P/N 330020-425) to connector J1 on the module and to connector J5 on the console's ECPU board (see Figure 4). **Note: if the TDIM Module is installed in slot 4, the displayed slot number (X) will be 5.**

3. Verify that the RJ-45 plug in the module's bracket is accessible through the slot opening in the bottom of the console.
4. When you are finished, make sure any unused slots in the comm cage have a blank end plate installed. Leave the console door open.



TDim Module Verifications

VERIFY BLANK DATA STRING FOR DIM

1. On TLS, press MODE key until SETUP MODE is displayed:

SETUP MODE
PRESS <FUNCTION> TO CONT

2. Press FUNCTION key until RECONCILIATION SETUP is displayed:

RECONCILIATION SETUP
PRESS <STEP> TO CONTINUE

3. Press STEP key to verify DISPENSER MODULE DATA STRING is blank:

DISP. MODULE DATA STRING

VERIFY SOFTWARE REVISION LEVEL OF SOFTWARE

1. Press MODE key until DIAG MODE is displayed:

DIAG MODE
PRESS <FUNCTION> TO CONT

1. Press FUNCTION key once:

SYSTEM DIAGNOSTIC
PRESS <STEP> TO CONTINUE

1. Press STEP key to view software revision level:

SOFTWARE REVISION LEVEL
VERSION XXX.X

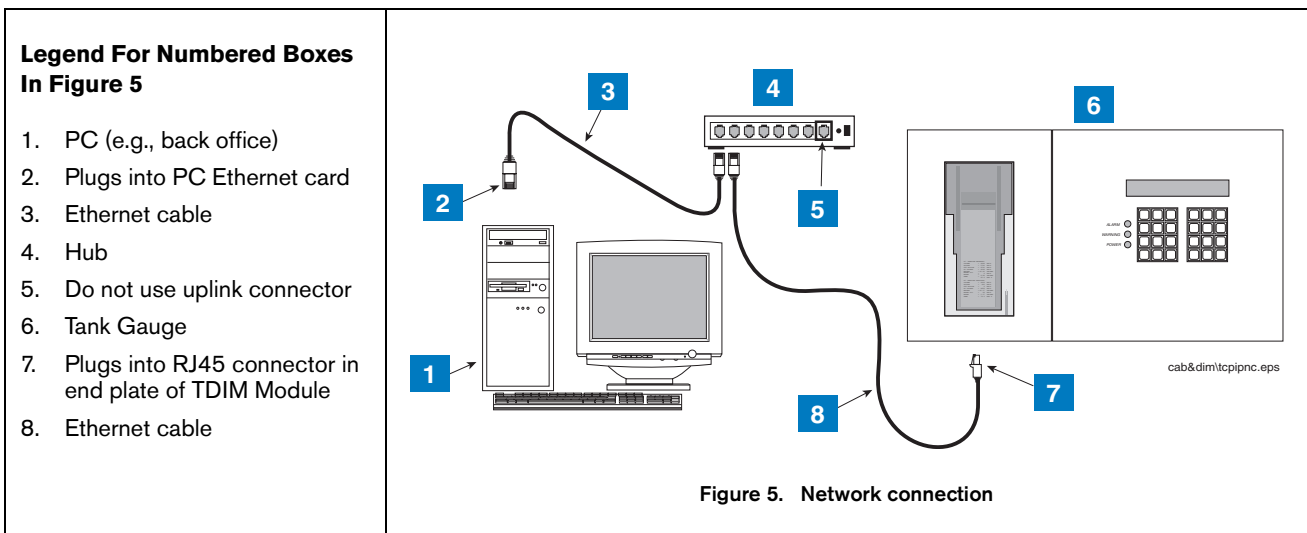
TDIM Module Initial Connection

After the TDIM Module is installed and set up in the console, it can be connected to a PC in two ways:

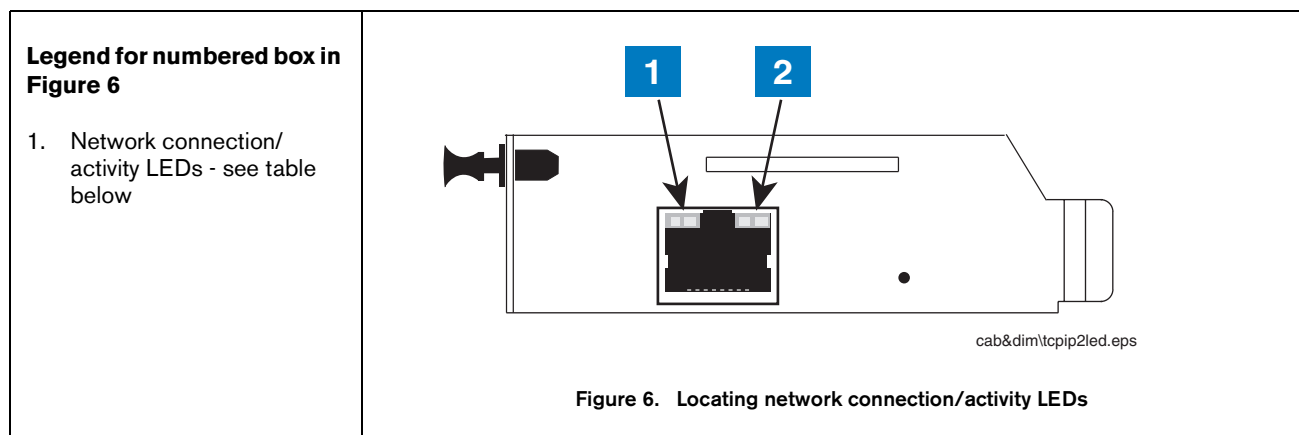
- Over a network (LAN, WAN), or
- Directly

CONNECTING TO THE TDIM MODULE OVER A NETWORK

1. Connect the PC to the TDIM Module as shown in Figure 5. Insert the RJ-45 plug of the network CAT 5 cable into the RJ-45 connector in the end plate of the TDIM Module.



2. Locate the 2 LEDs on the top edge of the RJ-45 connector on the module's end plate (see Figure 6).



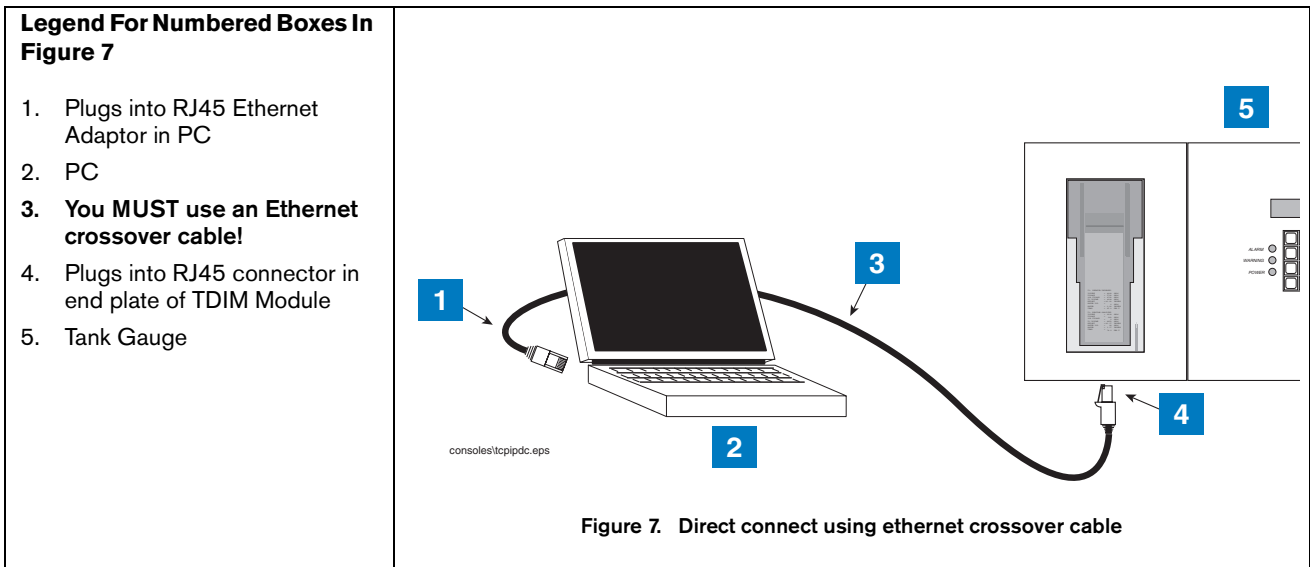
Depending on network connection speed (see table below), the left or right LED on the top edge of the RJ-45 connector should remain 'On' when a proper connection is made.

Link LED (Item 1 in Figure 6)		Activity LED (Item 2 in Figure 6)	
Color	Meaning	Color	Meaning
Off	No Link	Off	No Activity
Amber	10 Mbps	Amber	Half-Duplex
Green	100 Mbps	Green	Full-Duplex

After confirming a successful link between the PC and the TDIM Module, go to “TDIM Module’s IP Address/ Configuration Setup” on page 11.

CONNECTING TO THE TDIM MODULE DIRECTLY

Connect the PC to the TDIM Module as shown in Figure 7. Insert the RJ-45 plug of the ethernet crossover cable into the RJ-45 connector in the end plate of the TDIM Module. **Important! you must use an ethernet crossover cable.**



Locate the 2 LEDs on the top edge of the RJ-45 connector on the module’s end plate (see Figure 6 on page 7). Depending on the network card installed in the PC, the left or right LEDs on the top edge of the RJ-45 connector should remain ‘On’ when a proper connection is made.

Before entering the TDIM Module’s IP Address enter a static IP Address in your connected PC. IP Address setup procedures for both Windows 98 and 2000 are discussed in this section. Windows ME or XP procedures may be different. Please check those operating system’s manuals to verify their method of entering IP Addresses.

Setting Your PC’s IP Address for Direct Connect (PC with Windows 98 Operating System)

1. Connect your PC to the TDIM module as shown in Figure 7 above. Go to your PC’s Control Panel folder and double-click the ‘Network’ icon to display the Network screen (Figure 8)

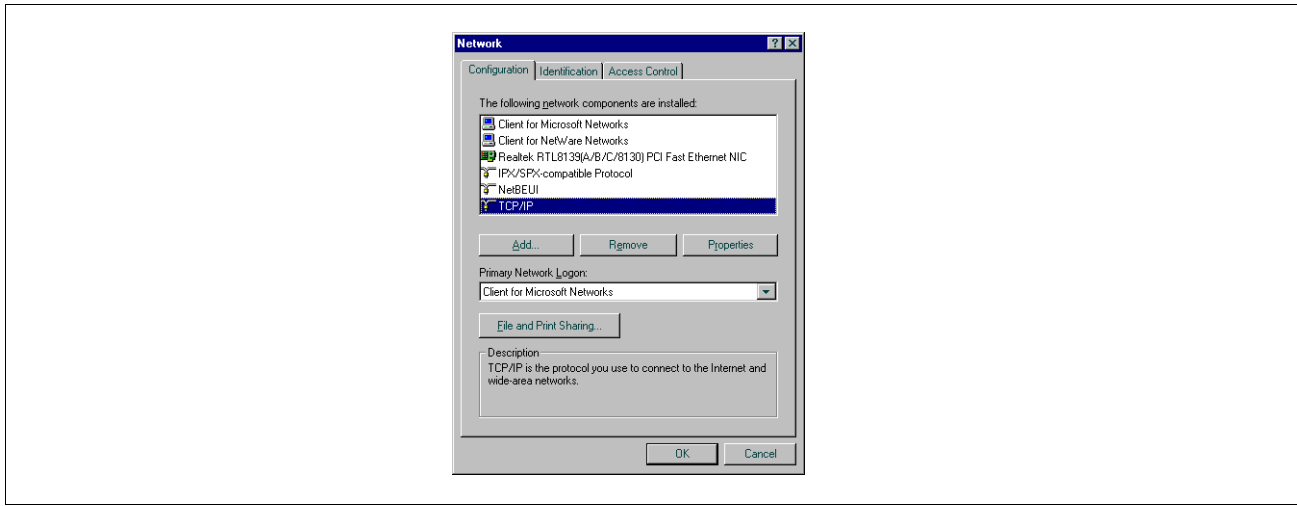


Figure 8. Network Screen

- In the 'The following network components are installed' window, highlight **TCP/IP** and then click the **Properties** button to display the TCP/IP Properties dialog box (Figure 9).

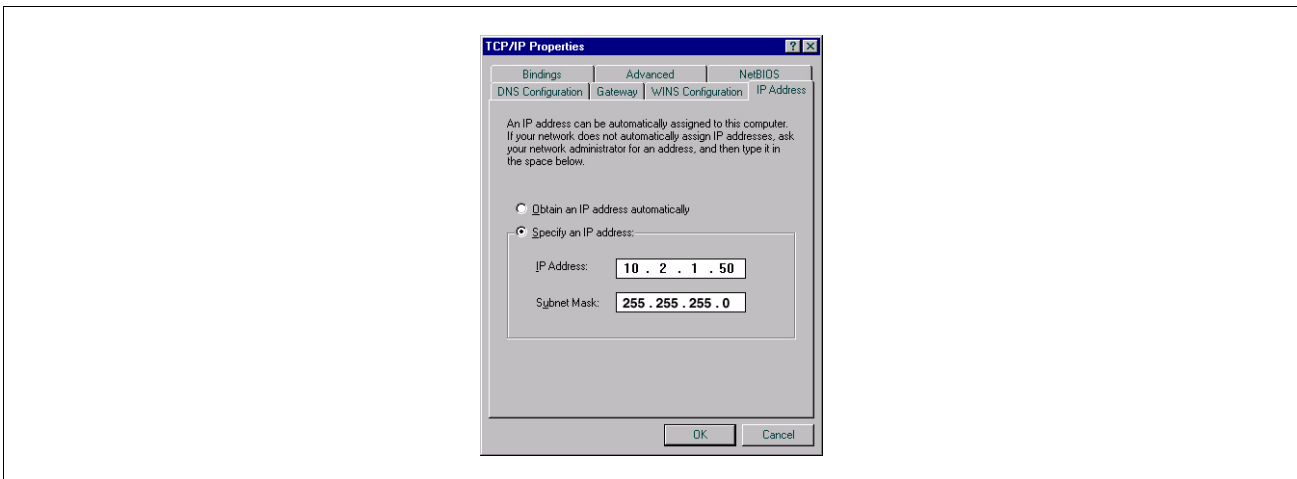


Figure 9. TCP/IP Properties dialog box

- Click the **Use the following IP Address** radio button and enter an IP Address and Subnet mask for your PC. You can use an IP address that is one digit off from the customer supplied IP Address you will assign to the console's TDIM Module. For example, if the IP Address for the TDIM Module is 10.2.1.51, you would enter 10.2.1.50 for the PC's IP Address. You also need to enter a Subnet mask. Use the same Subnet mask that is shown in Figure 9 above (255.255.255.0).

Note: Prior to reconnecting your PC to a network, you will need to select the **Obtain an IP address automatically** radio button as shown in Figure 9 above.

- You are now ready to enter the TDIM Module's IP Address.
- Proceed to page 11.

Setting Your PC's IP Address for Direct Connect (PC with Windows 2000 Operating System)

1. Connect your PC to the TDIM Module as shown in Figure 7 on page 8 above. Go to your PC's Control Panel folder and double-click the 'Network and Dial-up Connections' icon.
2. Select **Local Area Connection** and the status screen displays (Figure 10).

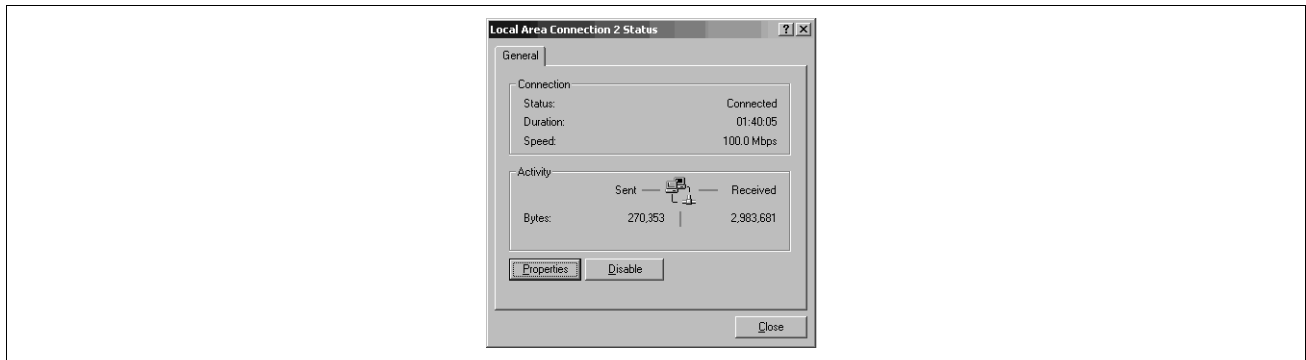


Figure 10. Local Area Connection Status Screen

3. Click the **Properties** button and the Local Area Connection Properties screen displays (Figure 11).

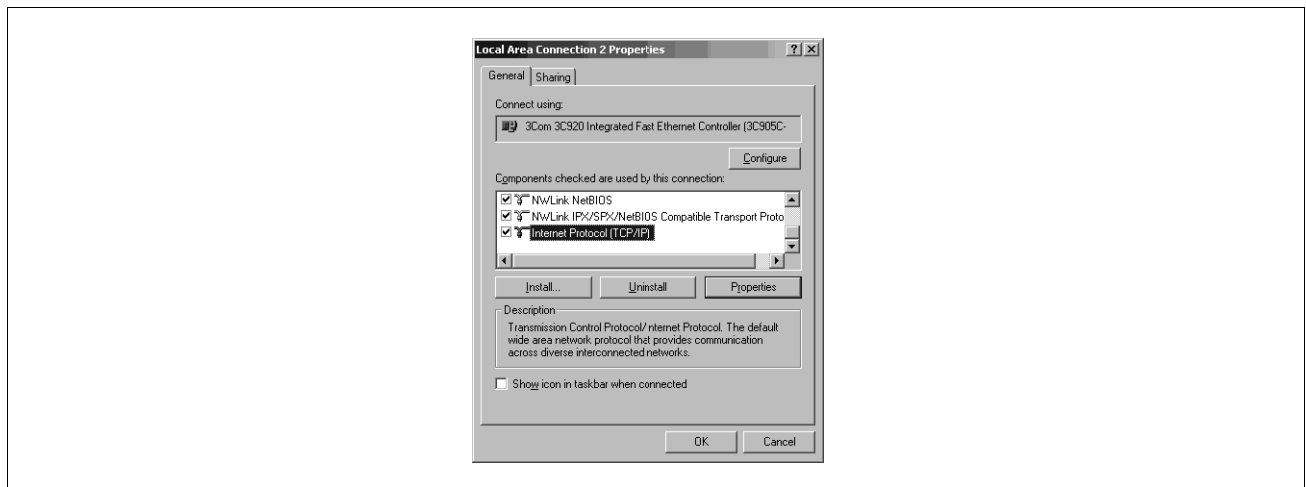


Figure 11. Local Area Connection Properties Screen

4. In the 'Components checked are used by this connection' window, highlight Internet Protocol (TCP/IP) and then click the **Properties** button to display the Internet Protocol TCP/IP Properties dialog box (Figure 12).

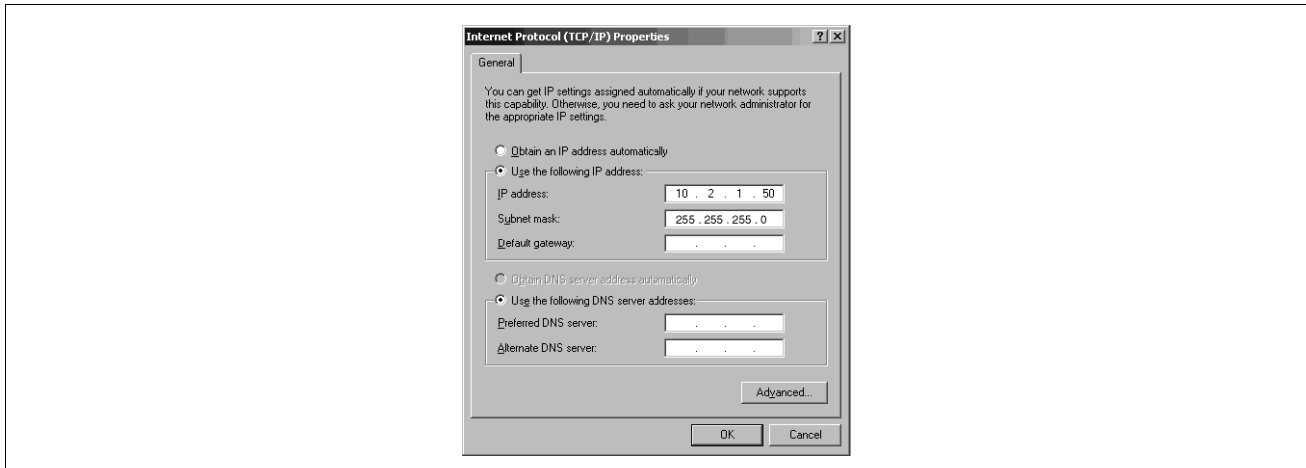


Figure 12. Internet Protocol TCP/IP Properties dialog box

- Click the **Use the following IP Address** radio button and enter an IP Address and Subnet mask for your PC. You can use an IP address that is one digit off from the customer supplied IP Address you will assign to the console's TDIM Module. For example, if the IP Address for the TDIM Module is 10.2.1.51, you would enter 10.2.1.50 for the PC's IP Address. You also need to enter a Subnet mask. Use the same Subnet mask that is in the example in Figure 12 above (255.255.255.0).

Note: Prior to reconnecting your computer to a network, you will need to select the **Obtain an IP address automatically** radio button as shown in Figure 12 above.

- You are now ready to enter the TDIM Module's IP Address.

TDIM Module's IP Address/Configuration Setup

ARP and Telnet are utilities available in Windows operating systems and are used in the TCP/IP addressing procedure:

ARP - ARP is a TCP/IP protocol used to convert an IP address into a physical address (called a DLC address), such as an Ethernet address. A host wishing to obtain a physical address broadcasts an ARP request onto the TCP/IP network. The host on the network that has the IP address in the request then replies with its physical hardware address. ARP will only work when the console and PC share the same subnet.

Telnet - Telnet is a terminal emulation program for TCP/IP networks such as the Internet. The Telnet program runs on your computer and connects your PC to a server on the network. You can then enter commands through the Telnet program and they will be executed as if you were entering them directly on the server console. This enables you to control the server and communicate with other servers on the network.

NOTE: In addition to the IP address configuration instructions provided in this manual, it may also be possible to use the Lantronix device installer found in the Lantronix website (www.lantronix.com) to configure your TDIM Module's IP address.

ENTERING THE TDIM MODULE'S IP ADDRESS

With the PC connected to the TDIM Module as discussed above, perform the steps below.

1. At the DOS command prompt type (the spaces between words and letters in all entries must be entered as shown or the address will not be successfully assigned):

```
arp -s y.y.y.y 00-20-4a-xx-xx-xx
```

(where *y.y.y.y* is the IP address of the TDIM Module (see your network administrator) and *00-20-4A-xx-xx-xx* is the number from the label on the back of your TDIM Module [see Figure 1 on page 3]).

Press Enter.

The module's IP address is added to the ARP table and the screen will return to the DOS command prompt. Type `ARP -A` at the DOS command prompt and press Enter to view the contents of the ARP table and verify the presence of the TDIM Module's IP Address. Cold start the TLS Console.

2. At the DOS command prompt type:

```
telnet y.y.y.y 1
```

Press Enter.

The following message will appear:

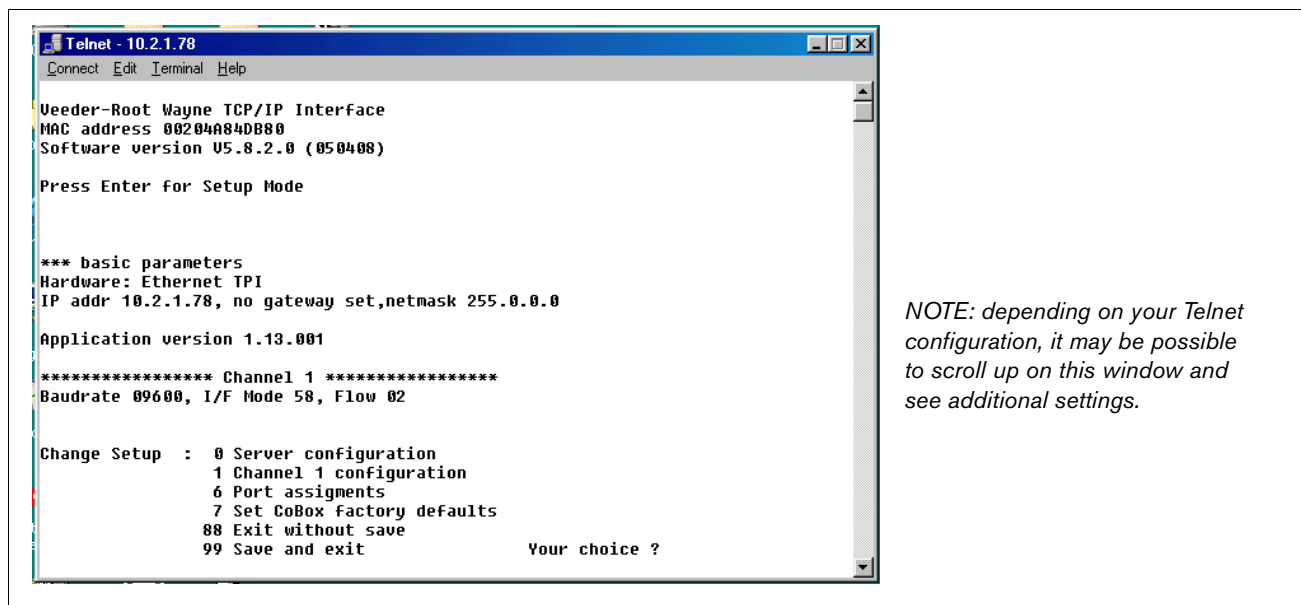
```
Connecting to y.y.y.y...could not open a connection to host on port 1. Connect failed or could not open connection to Y.Y.Y.Y.
```

Press OK to close the pop up screen. Close the Telnet screen. The screen will then display the DOS command prompt.

3. At the DOS command prompt type:

```
telnet y.y.y.y 9999
```

Press Enter as soon as the Telnet screen appears, press Enter again (NOTE: Telnet screen will time-out if you do not press Enter within approximately 4 seconds after the Telnet screen appears). The Telnet Setup menu will appear on the screen (see Figure 13).



NOTE: depending on your Telnet configuration, it may be possible to scroll up on this window and see additional settings.

Figure 13. Telnet Setup Menu

Enter the required TDIM Module's configuration settings shown in Table 1.

Note: to accept a setting already in the Telnet Setup menu, press Enter to accept the value and skip to the next selection.

4. After completing the TDIM Module's configuration, connect the module to the customer's network.

NOTE: Make changes to server configuration and channel 1 configuration only!

Press 9 and Enter to save settings and exit Telnet. A Telnet screen will pop up a warning of lost connection. Press OK and continue.

Table 1.- Telnet Setup Menu Settings

Menu Selection	Setting
BASIC PARAMETERS - to access, select Change Setup option 0, press Enter	
IP Address (of console)	(obtain from your network administrator)
Gateway	(obtain from your network administrator)
Netmask	(obtain from your network administrator)
Telnet config password	(N)
CHANNEL 1 - to access, select Change Setup option 1, press Enter	
Baud rate	9600
I/F Mode	58
Flow	00 (Version 15 - 20 software), or 02 (Version 21 and later software)

AFTER CONFIGURING THE TDIM MODULE

When using an ethernet crossover cable to configure the TDIM Module, and programming is completed, connect the console to the network.

TDIM Troubleshooting

Table 2 below contains basic troubleshooting steps for a disabled DIM alarm:

Follow the action steps in the left column, and depending on the result in the right two columns (YES or NO), go to the next action step indicated. The grayed-in steps contain either end results (E) or steps for further action (A).

Table 2.- Disabled DIM Alarm

This alarm means that the DIM module has stopped communicating with central processing unit of the console. There are limited number of actions you can take to resolve this problem without having to replace the DIM board.			
STEP	DESCRIPTION	YES	NO
1	[press the ALARM TEST button] Does the alarm go away?	E1	3
2	Are the software revision number and created date displayed in the screen? Note alarm string message: 'E1:','M2:...' etc. [MODE] -> DIAGNOSTIC [FUNCTION]-> SYSTEM DIAGNOSTIC [STEP]-> DIM DIAGNOSTIC DATA [ENTER] -> DIM software revision screen. [TANK/SENSOR]-> until screen is displayed for the DIM with the alarm by matching 'E1', 'M1' you noted.	3	A1
3	Does the alarm return after 2 minutes? Turn the console power 'off' and then back 'on'.	4	E1
4	Are Channel 1 settings of Telnet Setup menu correct?	A1	E2
A1	Replace the DIM.		
E1	The DIM is working properly.		
E2	Program Channel 1 settings		

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