

# MODEL 713 RDS ENCODER MANUAL ADDENDUM

**NOTE:** This amended Section V of the 713 manual contains updated instructions for Lantronix DeviceInstaller software, Version 4.1.0.3, supplied on the CD-ROM shipped with encoders from current production. The updated software must be used with current hardware, but is equally applicable to encoders from earlier production. This Addendum replaces pages 30 through 37 of Rev. A manuals, but is not paginated as it contains additional information and does not correlate with the manual's Table of Contents.

## Section V

### TCP/IP CONNECTIVITY

The Model 713 Encoder includes an RJ-45 Ethernet port, which may be directly connected to a local network or to the Internet. An Internet browser may be directed to the encoder's IP address to bring up an encoder "Home Page" and a Web-based data-entry screen. This 'network' data-entry screen is under password protection and can be used to program the Model 713 registers in the same 'fill-in-the blanks' manner afforded by the Windows® software supplied with the encoder.

In addition, the encoder's IP address may receive raw ASCII data from station automation to permit dynamic messaging; for example, song title and artist. Programming syntax of this ASCII data is covered in Section VI, beginning on Page 41. The purpose of this section of the Manual is to guide the user through IP connectivity issues.

**NOTE:** It is energetically recommended that the Model 713 Encoder be set up for either USB or serial (COM port) communications before attempting to 'network' the encoder. These more basic means of communicating are foolproof, compared with the complexity of a network connection.

### CONFIGURING THE LAN PORT

The encoder's LAN port is a self-contained subassembly that incorporates all the networking functions and protocols. Each subassembly has an initial, individual DNS, which may be reassigned by the user. This LAN subassembly is by Lantronix Corp. and is called their XPort™. This is what gives the Model 713 its network connectivity. More information on this 'embedded device server' can be found on the Lantronix Website:

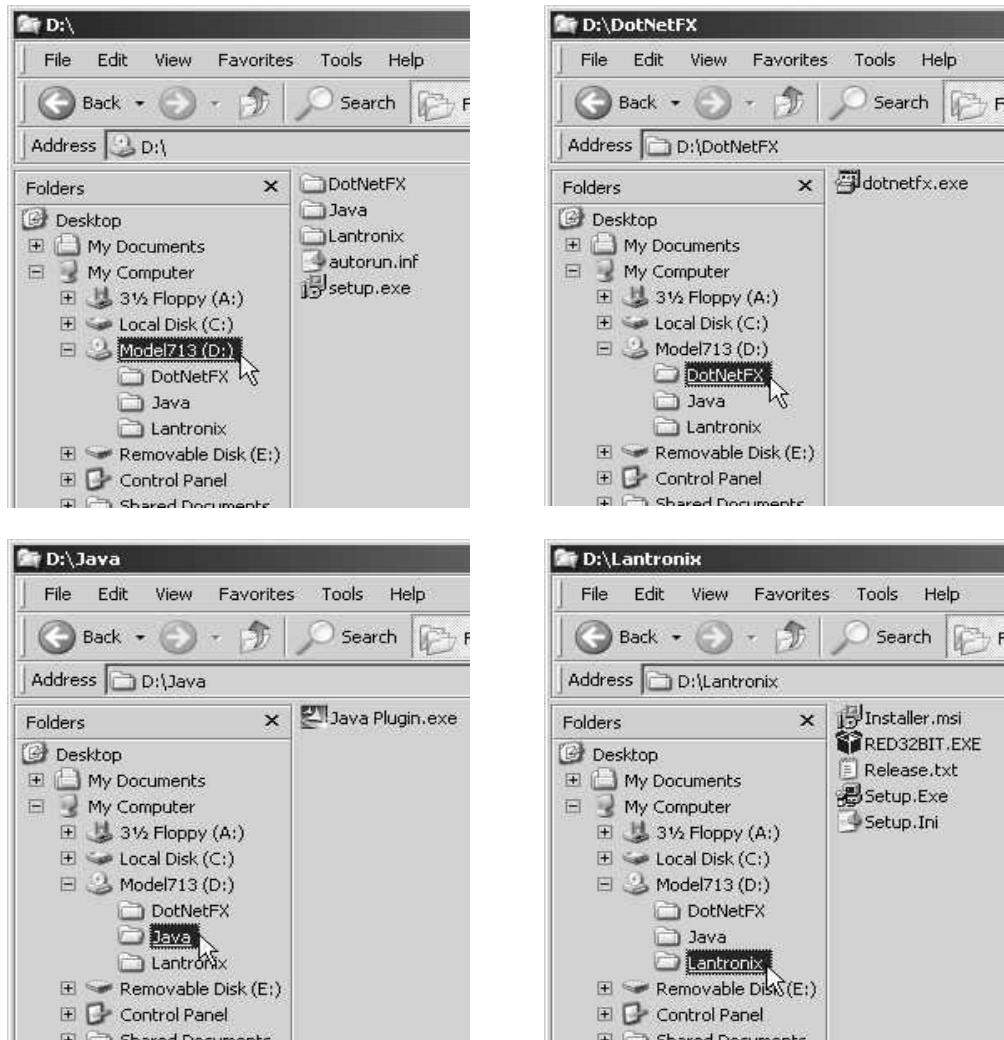
<http://www.lantronix.com/device-networking/embedded-device-servers/xport.html>.

## Support Software

The XPort™ comes with Lantronix DeviceInstaller software to help ‘find’ the Model 713 once it has been connected to the network. This software has been included on the Model 713 installation CD.

With the Model 713 installation CD in the computer’s CD drive, use Windows Explorer to navigate to the CD Drive (D:). Right-click the drive and select: Explore to view the CD contents.

In addition to the two Model 713 software auto-install files, there are three folders of support software from other vendors. All contents of the CD are shown below.



## Loading DeviceInstaller

Open the D:\Lantronix folder and double-click the file: lstarter.msi. If the computer you are using has seen much networking service, it well may have some version of the Microsoft “Dot-Net Framework” software already installed. If so, the Lantronix application will launch. Otherwise, you will see a notification window that the Microsoft application is required.

To install the Dot-Net Framework quickly and easily, first click: No (do not go to the Internet) in the message box, and then open the D:\DotNetFX folder and double-click: dotnetfx.exe. When asked whether to proceed, as shown here, click Yes and follow the steps for installation.



With .NET Framework installed, reopen the Lantronix folder and double-click: Installer.msi to launch the DeviceInstaller Setup Wizard.

Unless you have reasons to the contrary, accept the default installation options. However, you might want to make the utility available for Everyone, rather than Just Me, which is one of the first options.

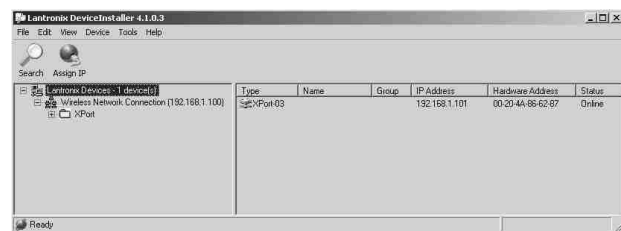
The Wizard does not place an icon on the Desktop, but when the time comes the program may be launched from the Start menu.

## Connecting the Encoder to the Network

The Model 713 must be specifically configured for whatever network it is connected to. If it is ultimately to be accessed by the Internet, it first must be connected to local network for this configuration. If there is no local network, one can easily be simulated with an inexpensive router. These are commonly used to connect two or more computers to a single DSL or cable modem, and generally have one WAN port and 4 or more LAN ports. One of these routers may be found at popular computer emporiums for \$40 or less, and unless the router will provide the bridge to the Internet it is not necessary to run any software that comes with it. Simply connect the computer to one router LAN port and the Model 713 to the other. In our illustration here, the 713 will be plugged into a spare LAN port on a wireless router to enable network access

With both the computer and the encoder connected to the network, launch the Lantronix utility: **Start** / All Programs / Lantronix / Device Installer, and then click: DeviceInstaller.

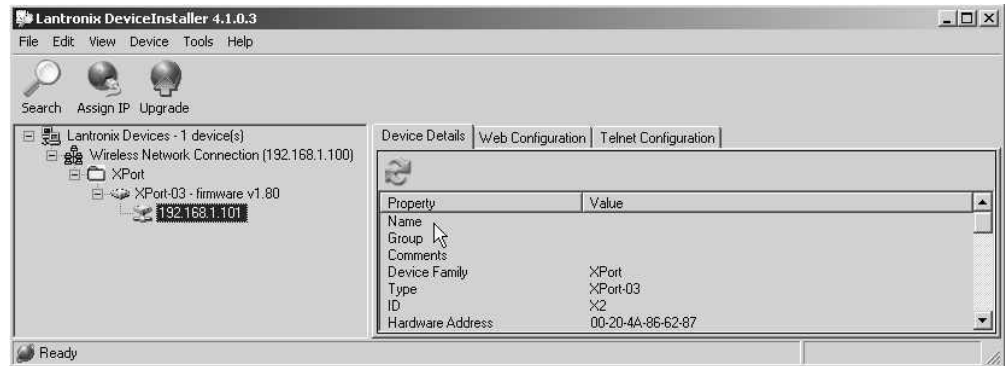
The DeviceInstaller will initially search for any Lantronix hardware connected to the network and display it as shown here. You may also click: Device/Search to refresh the list if the encoder is connected after the program is started.



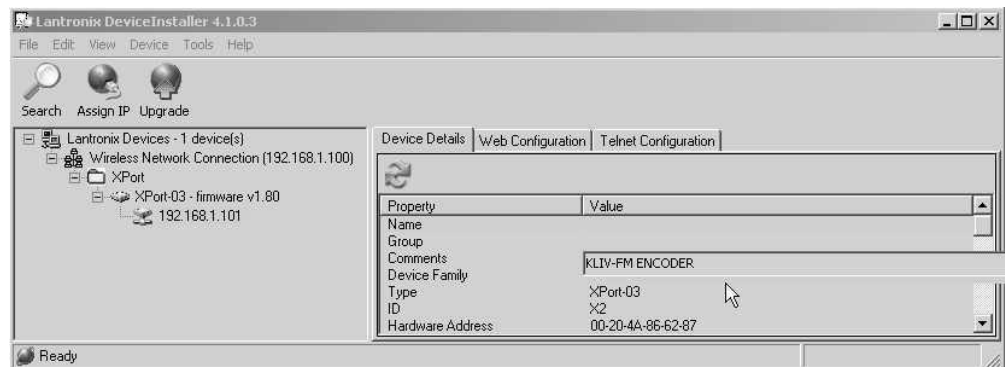
Note that our wireless router has automatically assigned an IP address to the 713, but DeviceInstaller will allow you to change this, and otherwise configure the 713 to your network, including assigning a name to this encoder to distinguish it from other encoders that may be on the same network.

## Assigning Device Properties

In the right-hand pane of the Lantronix DeviceInstaller screen, double-click the XPort icon to bring up the three tabs shown below.



To name the subject encoder, under the Device Details tab double-click to open an entry box. Type in a name to identify this encoder so that it can be easily recognized on the network as shown below.



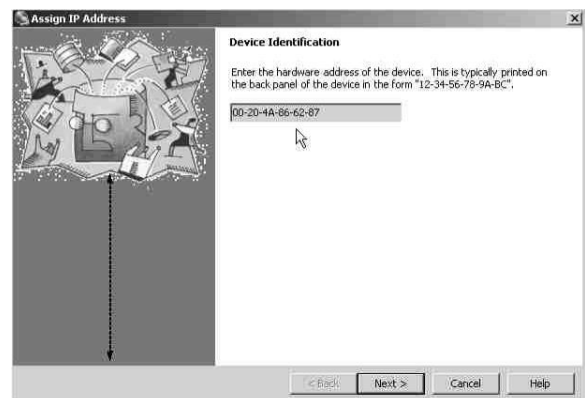
Click Enter to close the Name entry box.

You may also assign identifications to the Group and Comments fields in a similar manner, although only the Name assignment is normally required.

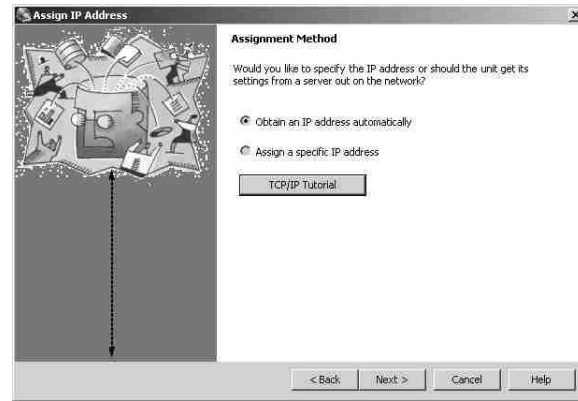
## Assigning the IP Address

If the IP address of the encoder needs to be reassigned, this should be done just prior to connecting the encoder to its designated network. If the address is reassigned while still connected to a router for initial programming, connectivity with this local (router) network may be lost before programming is completed.

Click Assign IP at the top of the window to open the utility shown at the right. To identify the individual encoder, enter its 12-character Hardware Address, which appears on the DeviceInstaller main screen.



Click Next> to bring up the screen shown here, which will guide you through IP address reassignment. The utility can also prompt a router to assign an IP address automatically. You will also find a comprehensive tutorial on TCP/IP protocols, and the utility can even access the Internet for further help with this procedure.

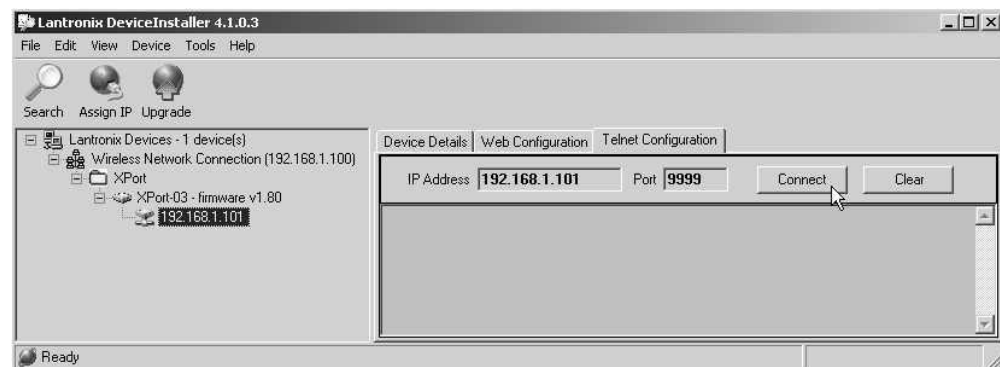


### Reassigning the Encoder's Network Communication Port No.

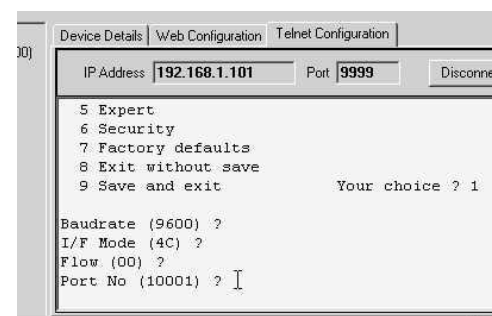
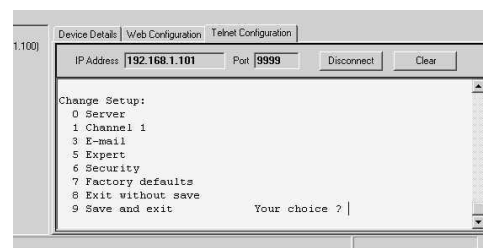
By default, the Model 713 encoder will have a network communications port assignment of 10001. The Network Data Entry screen, Configure RDS Encoder uses Port 10001, the System Setup screen, Configure RDS System uses Virtual Port 30718, and the TCP (*host exchange*) uses Virtual Port 80, the same as any typical Web browser. All these ports are IP ports and exchange data *packets*.

Some station automation systems require a different port number; the Port No. can be changed using the DeviceInstaller utility.

Click the Telnet Configuration tab at the top of the DeviceInstaller screen, and then click Connect.



Quickly press Enter to get to the setup screen shown below, left. Enter the number 1, and press Enter four times. This will position your cursor to the right of: Port No (10001) ?, as shown below, right.

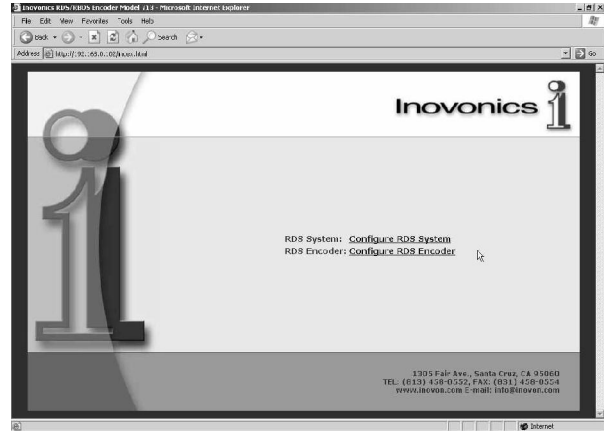


Type in an alternative port number, as may be required by your station automation. For example, the *dMarc Console* requires a port assignment of 4001 to communicate.

Once the entry is made, press Enter repeatedly until you reach the Change Setup: menu, then enter 9 to Save and exit.

## “BROWSER” NETWORK CONNECTION

With the encoder configured and connected to a network, addressing it can be as simple as typing the IP address of the encoder into a Web browser, such as Microsoft’s Internet Explorer. This will bring up the encoder’s own “Home Page,” shown here.



### Java Installation

If the Home Page does *not* appear, you will probably get a message indicating that the computer does not have Sun Microsystems’ Java infrastructure installed. We have provided this on the Model 713 installation CD, as shown on the second page of this Addendum. Open the Java folder and double-click: java.exe to install the needed routine.

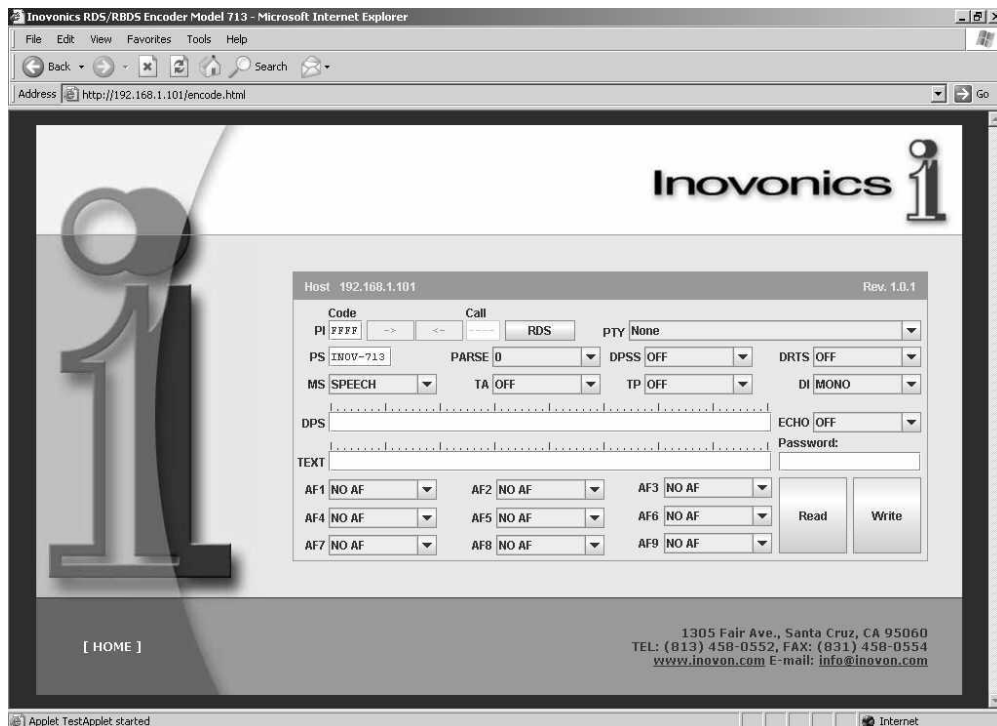
### Java Utility Implications

Web-based data entry is very convenient for the user, but this Java-powered method of addressing the 713 carries a certain amount of ‘overhead’ that may slow or otherwise compromise communication, particularly over a busy private network or the public Internet, where packets of data are frequently received out of sequence.

For this reason we have provided a fallback communications utility that essentially provides a ‘virtual COM port’ for using the Model 713 Encoder software over any network with a great deal of ‘robustness.’ This alternative is detailed under: CREATING A ‘VIRTUAL COM PORT’ later in the Addendum.

Accessed through a browser, the encoder Home Page gives the user two choices. RDS System: Configure RDS System, is a system ‘housekeeping’ page. RDS Encoder: Configure RDS Encoder, directly addresses the Model 713. Click: Configure RDS Encoder to bring up the screen shown on the next page.

This screen nearly identical to the one shown on Page 23. As data entry was covered in great detail under THE DATA ENTRY SCREEN, beginning on Page 22, it will not be repeated here. Please refer back to that discussion for instructions in filling-in the data-entry screen.



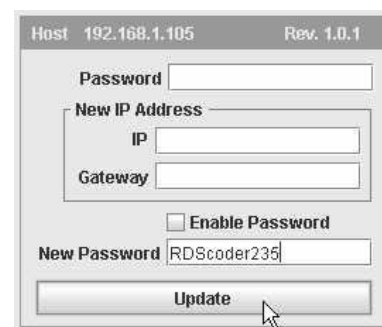
The primary utility of this screen is to set the static IDs and ‘flags,’ and to enter ‘set-and-forget’ scrolling-PS and RadioText messages. It does not afford the file management capability of USB and COM port connections using the specialized Windows® software provided with the Model 713.

### Password Protection

The data-entry screen has a field for typing-in a password to protect the networked encoder from unauthorized access. The password is case sensitive and may use any combination of letters and numbers, as in the example shown here. Once this password has been uploaded to the Model 713, the screen’s Write and Read buttons will not allow communication to and from the encoder, respectively, once password protection has been enabled.



Go back to the Home screen and click: Configure RDS System. This will open a box on the Configure screen where the password may be typed in. The upper Password box is for an existing password, if one had already been assigned. A new (or first) password is entered in the New Password box. Check the Enable Password box to allow the change, and the click the Update button to complete the operation.



This box also has a space to type in a New IP Address. The encoder IP and the Gateway of the network router may be entered here without having to use the Lantronix DeviceInstaller utility.

## CREATING A 'VIRTUAL COM PORT'

As mentioned earlier, the Java utility necessary for an Internet browser interface may communicate very slowly or not prove completely reliable when encoder programming data is split into packets and transmitted out of sequence. The 'virtual COM port' method of addressing the encoder requires that the Model 713 Encoder software be resident, but this method ensures that the link between the computer and the encoder remains a fixed 2-way connection for the duration of data transmission.

### Loading the Redirector Program

The virtual COM port is established using the Lantronix Redirector software supplied on the installation CD (see the earlier discussion). Use Windows Explorer to open the Lantronix folder and double-click: RED32BIT.EXE.

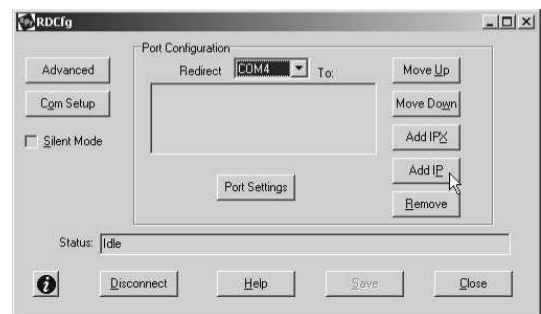
This will initiate the Redirector installation Wizard shown on the right. Unless there are reasons to do otherwise, follow the installation instructions, which include shutting down and restarting the computer.



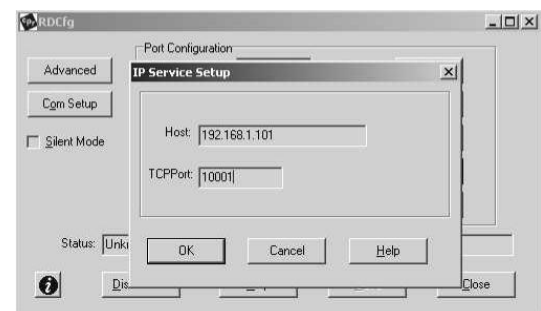
When the Redirector program is resident, start its Configuration utility with: Start / All Programs / Lantronix Redirector / Configuration as shown at the right.



This will bring up the RDCfg window for selecting one of the computer's COM ports for our purpose. For our example here we can choose COM4. As this will be a 'virtual' port, simply select a COM port that is *not* associated with a fixed application (internal modem or a hard-wired serial connector). Clicking: Com Setup will show a list of available ports. Ports that are 'grayed-out' will be permanent assignments of the computer.



Next, click: Add IP to bring up a second, IP Service Setup window. Type in the IP address of the encoder into the Host box. In the TCP Port box, enter 10001, which is the default TCP port assignment of the Model 713. With the as-





signments entered as shown, click: OK to close the IP Service Setup Window.

Back in the RDCfg window, click: Port Settings. Make sure that the Raw Mode box is checked. Click: OK, then Save, OK and Close.

When the Model 713 Encoder software is started, go to: COMM Port devices and make sure that COM4, the virtual port, is selected, with a baud rate of 9600, as shown at the right.

If the encoder has a network connection, it should only be necessary to click: Read From Encoder to bring up the contents of the registers, as pictured below.

