

MS-Connect 5100

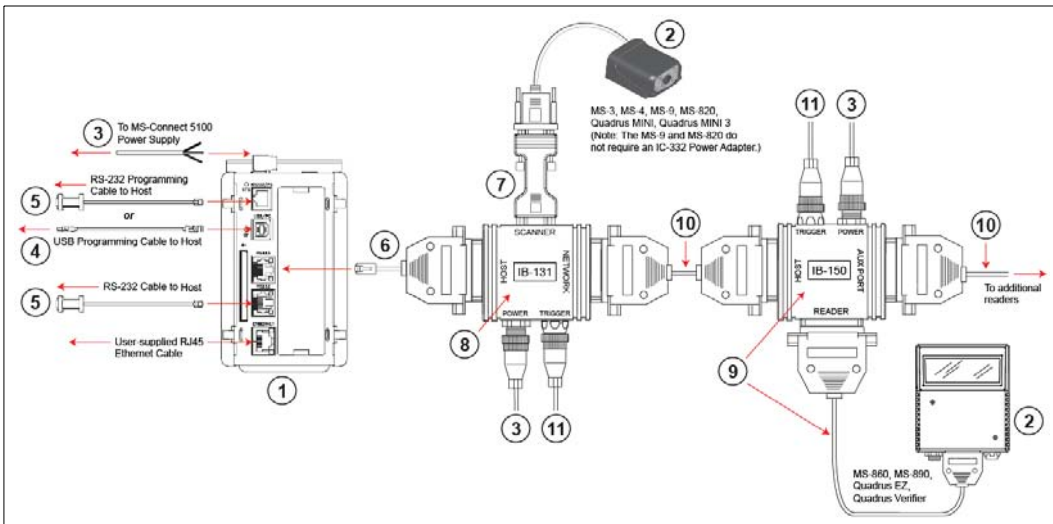
Quick Start Guide



Check Required Hardware

Step 1 — Check Required Hardware

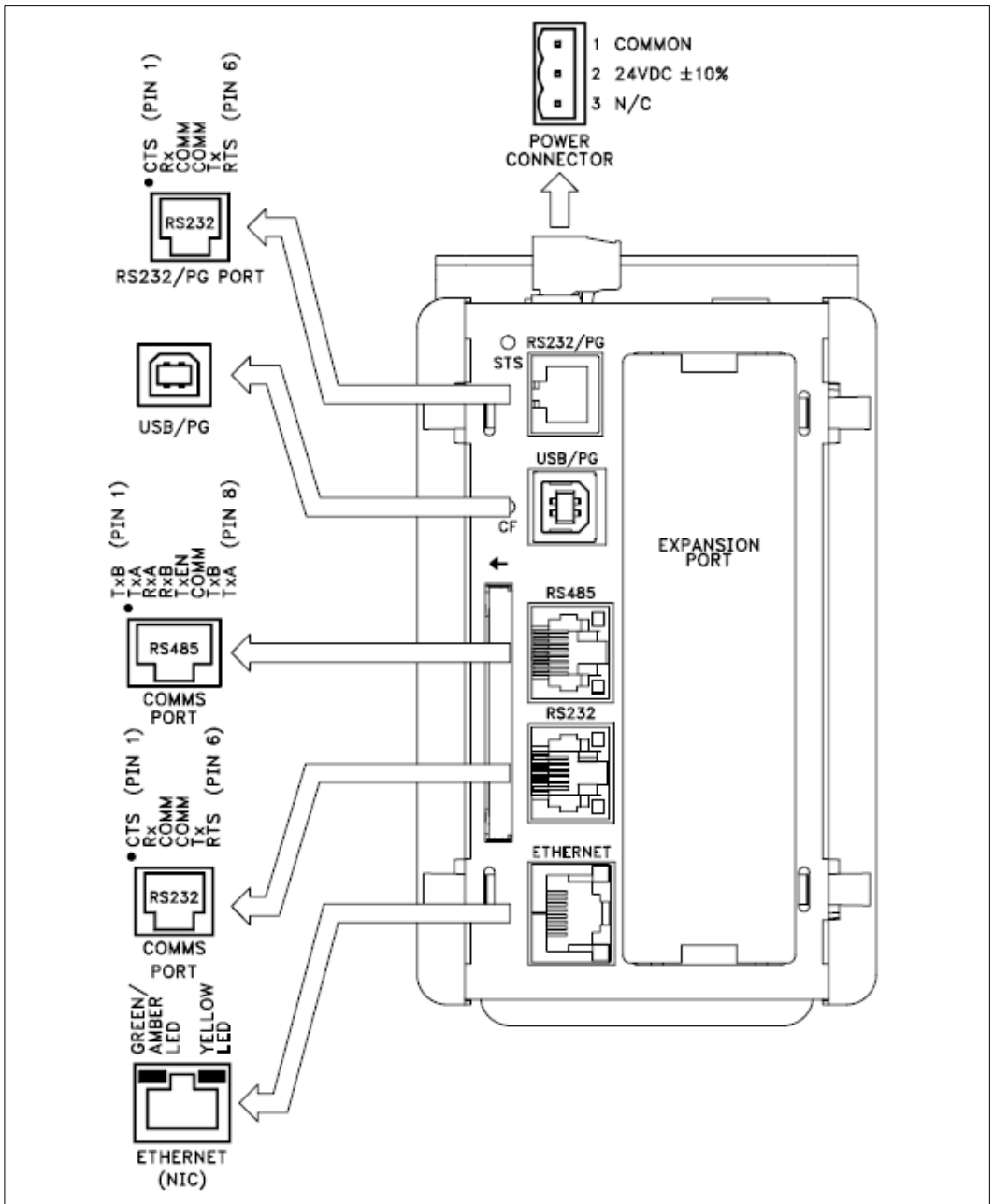
| Item | Description | Part Number |
|------|--|----------------|
| 1 | MS-Connect 5100 Enhanced Multidrop Concentrator | FIS-5100-0001G |
| 2 | Microscan Reader (one per Multidrop address) | FIS-XXXX-XXXXG |
| 3 | MS-Connect 5100 Power Supply (24VDC) Reader Power Supply (24VDC; one required per reader) | 97-100004-15 |
| 4 | Programming Cable, USB, Type A to Type B, 6 ft. | 61-000112-01 |
| 5 | RS-232 Host Cable, 9-pin to RJ12, 6 ft. | 61-000108-01 |
| 6 | MS-Connect 5100 Concentrator Cable, 25-pin to RJ45, 10ft., gender changer | 61-000113-01 |
| 7 | IC-332 Adapter (5-volt readers only) | FIS-0001-0035G |
| 8 | IB-131 Interface Box | 99-000018-01 |
| 9 | IB-150 Kit, with reader cable, 6 ft. | 98-000040-02 |
| 10 | Multidrop Cable, 10 ft. (Gender changer required to connect IB-131 and IB-150) | 61-100030-03 |
| 11 | Object Detector (optional) | 99-000017-01 |



Multidrop Network Hardware

Note: The Multidrop configuration shown above is just one example of configuration options. Any combination of Microscan readers and interface boxes can be used in the Multidrop network. See Step 6, [Run ESP and Select Programming Port](#), for more specific information about the cabling for each MS-Connect 5100 port.

Step 1 — Check Required Hardware (cont.)



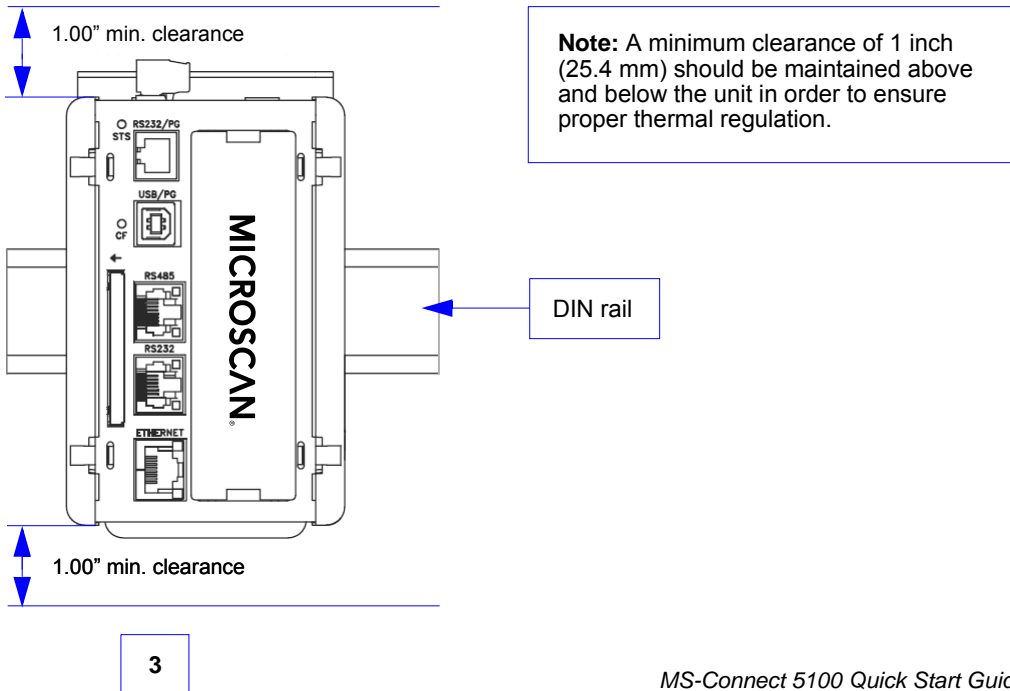
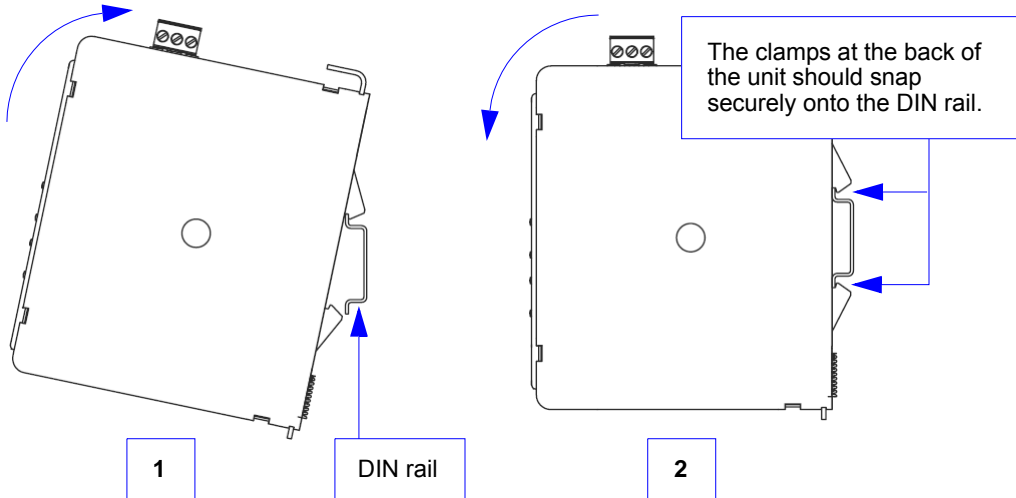
MS-Connect 5100 Port Pinouts

Step 2 — Install the MS-Connect 5100 Unit

Mount the MS-Connect 5100 to a DIN Rail

The DIN rail should be positioned horizontally so that the unit's ventilation holes are vertical in relation to cabinet orientation.

Attach the MS-Connect 5100 to the DIN rail as shown below.



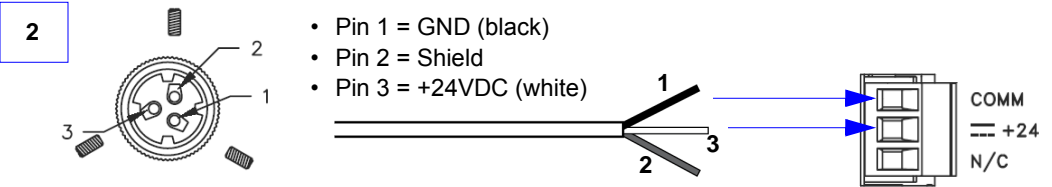
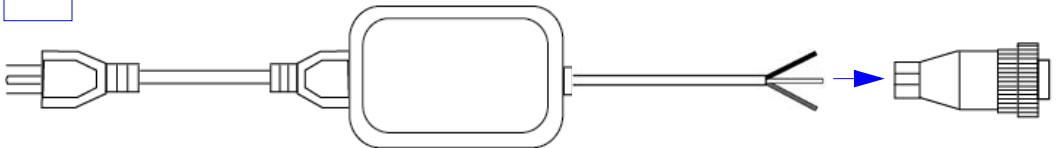
Step 3 – Connect Hardware for Multidrop

Power Connection Wiring

Once the MS-Connect 5100 unit has been physically installed in your application, the power supply can be wired to the unit.

The Microscan power supply (97-100004-15) comes with a standard Micro-Change connector. You must remove the Micro-Change connector from the end of the cable and wire the cable directly to the screw terminal block at the top of the unit.

- 1** Remove the Micro-Change connector and wire-strip the power supply cable.

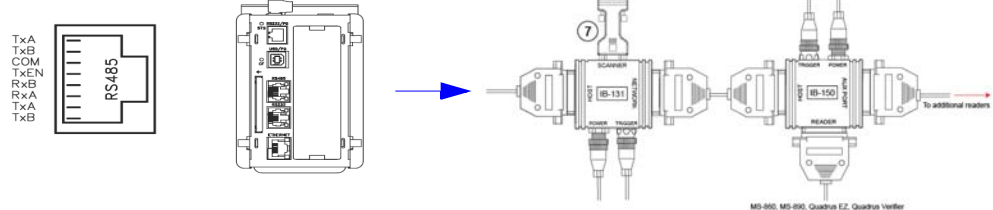


Multidrop Hardware Configuration

The MS-Connect 5100 can support up to 32 Microscan readers in Multidrop configuration.

Important: All readers must be configured for Multidrop before they can be added to the Multidrop network.

Use the RS-485 port for the Multidrop network.



Note: The Multidrop configuration shown above is just one example of configuration options. Any combination of Microscan readers and interface boxes can be used in the Multidrop network. See Step 6, [Run ESP and Select Programming Port](#), for specific information about the uses of each MS-Connect 5100 port.

Step 4 — Apply Power to the Multidrop Network

Once you have configured your hardware for Multidrop and securely connected all other cabling, you can safely apply power to the MS-Connect 5100 and the connected readers.

CAUTION: Be sure that all cables are connected **BEFORE** applying power to the system. Always power down **BEFORE** disconnecting any cables.

Important Notes

It is very important that the power supply is mounted correctly if the unit is to operate reliably. Please be sure to observe the following points:

- The power supply must be mounted close to the unit, with no more than 6 feet (1.8 m) of cable between the supply and the unit. Ideally, the shortest length possible should be used.
- The wire used to connect the unit's power supply should be at least 22-gauge wire. If a longer cable run is used, a heavier gauge wire should be used. The routing of the cable should be kept away from large contactors, inverters, and other devices which may generate significant electrical interference.
- A power supply with a Class 2 or SELV rating must be used. A Class 2 or SELV power supply provides isolation to accessible circuits from hazardous voltage levels generated by a mains power supply due to single faults. SELV is an acronym for "safety extra-low voltage". Safety extra-low voltage circuits shall exhibit voltages safe to touch both under normal operating conditions and after a single fault, such as a breakdown of a layer of basic insulation or after the failure of a single component has occurred.

Step 5 – Install ESP

Easy Setup Program (ESP) is Microscan’s proprietary setup and testing application. The purpose of **ESP** is to provide a quick and easy way to set up and configure Microscan products.

When the MS-Connect 5100 is connected to a host computer (Windows Vista, XP, or 2000), **ESP** can be used to configure Multidrop settings and set up communication with a host.

Install ESP

If installing from a Microscan Tools Drive:

1. Insert the Microscan Tools Drive.
2. Select **ESP Software** from the navigation bar at the left of the screen.
3. Click on **ESP Software** under the **Current Version** heading.
4. Click the **Run** button and follow the prompts in the **ESP Setup Wizard**.

Note: During installation, you may see an Internet Explorer Security Warning that states: “The publisher could not be verified.” If you see this warning, click **Run** to continue installation.

If downloading from the web:

1. Go to the Download Center at www.microscan.com.
2. Create a new member account or, if you are already a member, enter your user name and password.
3. Navigate to the “Microscan Software” section of the Download Center (near the top of the page).
4. Click on the link showing the latest version of **ESP**. Extract the **ESP** installation files to a location of your choice on the host computer. *Note where your **ESP.exe** file is stored on your hard drive.*
5. At the end of the installation process, the following icon will appear on your desktop:



6. Click the **ESP** icon to start the program.

System Requirements for ESP

- 166 MHz Pentium processor (recommended)
- Windows Vista, XP, or 2000 operating system
- Internet Explorer 5.0 or higher
- 64 MB minimum RAM
- 40 MB minimum disk space
- 800 x 600 pixel minimum 256 color display

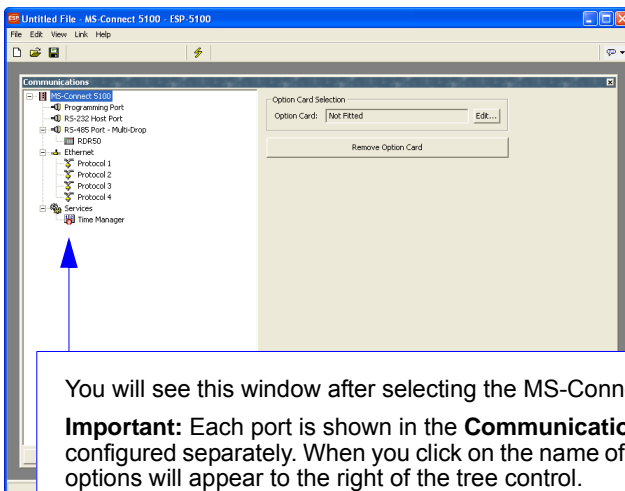
Step 6 — Run ESP and Select Programming Port

When you run **ESP**, you will see a model menu that looks like this:



Select the MS-Connect 5100 and click **OK**, or simply double-click the MS-Connect 5100 button to make your selection.

Note: The first time you select the MS-Connect 5100, the main view may take several seconds to load.

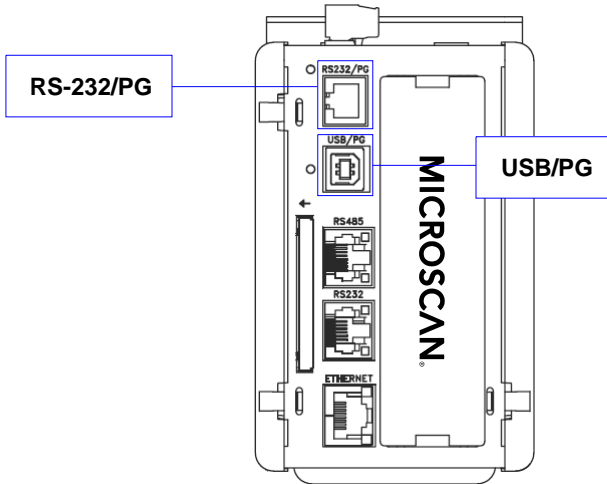


You will see this window after selecting the MS-Connect 5100.

Important: Each port is shown in the **Communications** tree control, and must be configured separately. When you click on the name of a port, that port's configuration options will appear to the right of the tree control.

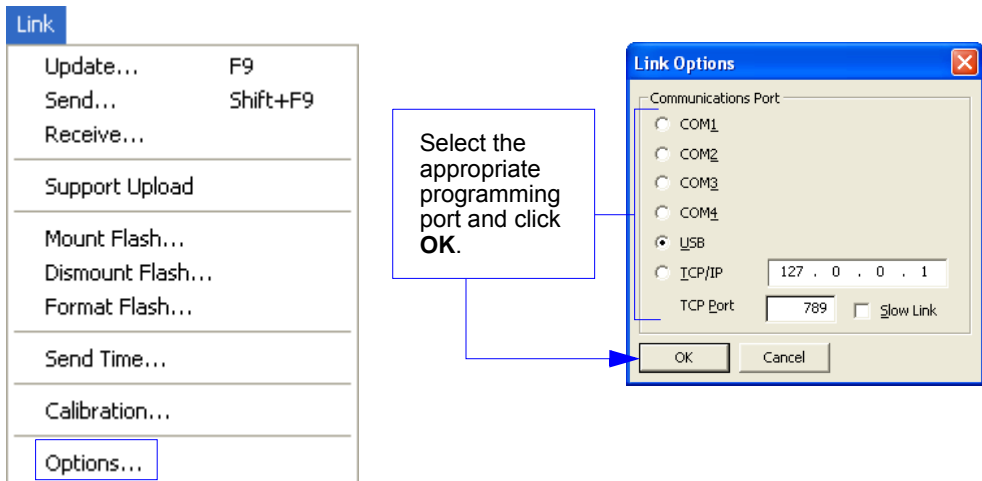
USB and RS-232 Programming Ports

The MS-Connect 5100 can be programmed via the USB port or the RS-232/PG port. The USB programming port allows you to send configuration settings to the MS-Connect 5100 via a standard USB connection. The RS-232 programming port allows you to send configuration settings to the MS-Connect 5100 via a serial connection.



Link Options

To select a programming port, click on **Link** in the menu toolbar, and select **Options**.



If using the USB programming port...

The first time you connect to the MS-Connect 5100 via **USB**, you will be prompted to install USB drivers on the host computer. This operation will require administrative permissions.

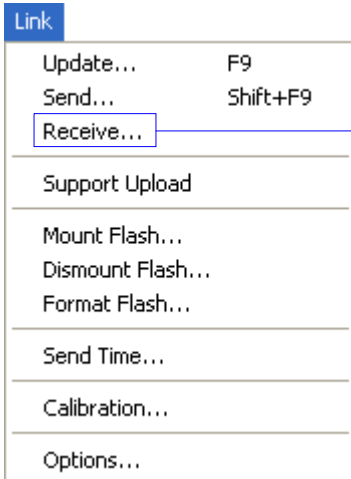
Log in and select “Install from Specific Location” on the “Found New Hardware” Wizard, then follow the prompts to locate and install drivers.

Note: When **ESP** is installed, the MS-Connect 5100 USB drivers are automatically placed on the host hard drive along with **ESP** installation files.

Example Location: “C:\Program Files\Microscan\ESP-5100\Device”.

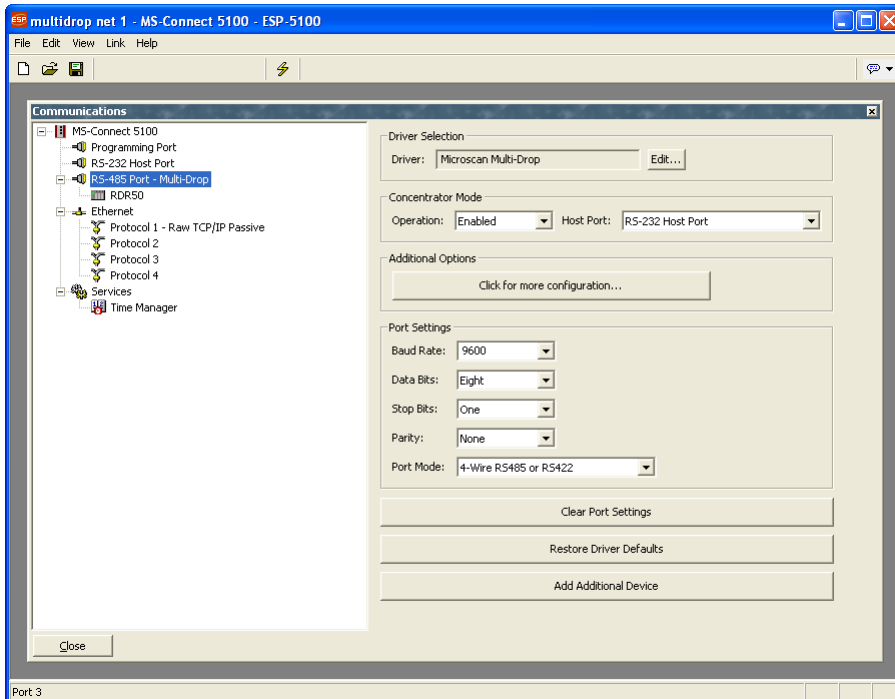
Link Receive

To receive configuration settings from the MS-Connect 5100, select **Receive** from the **Link** menu.



The **Receive** function will load the MS-Connect 5100's configuration profile in **ESP**.

Once the MS-Connect 5100's configuration profile has transferred, the unit's default Multidrop settings will be loaded to the **RS-485 Port** view in **ESP** as shown below.



Update

When you make new configuration changes, you can use the **Update** command to activate only those changes in the MS-Connect 5100.

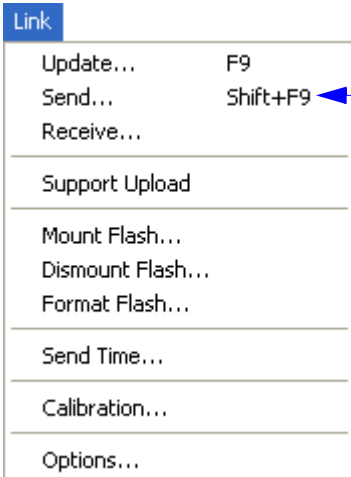


Update sends only the most recently changed configuration parameters to the MS-Connect 5100. The **F9** key can also be used to send the **Update** command, as well as this icon in the toolbar:



Send

The **Send** command transfers all settings to the MS-Connect 5100.



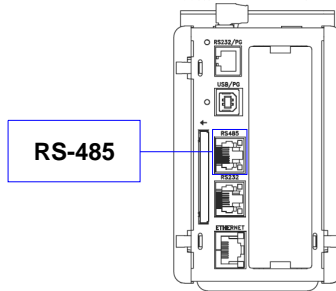
Send transfers all current configuration settings to the MS-Connect 5100. **Shift+F9** can also be used to initiate the **Send** command.

Important: Use the **Send Time** function to match the time and date in the MS-Connect 5100 with the time and date of the host computer sending commands.

Step 7 — Configure RS-485 Port Settings

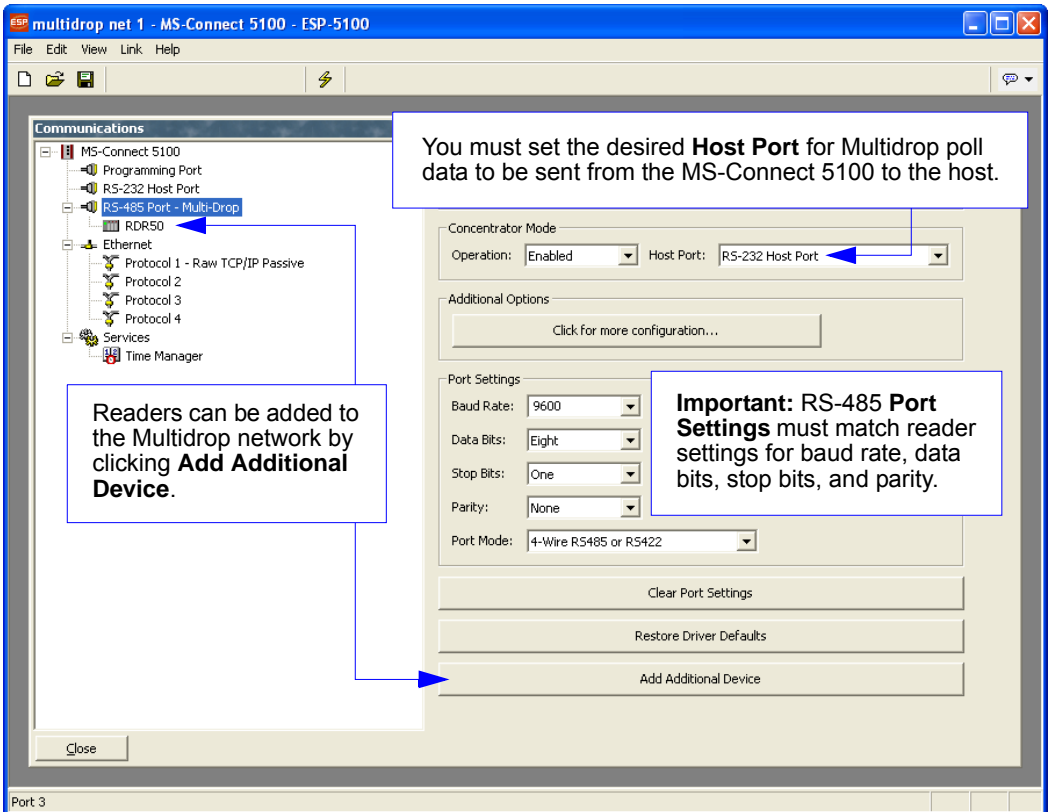
RS-485 Multidrop Port

The RS-485 port polls the addresses on the Multidrop network for data.



RS-485 Port Settings

The RS-485 view in **ESP** is automatically populated with the MS-Connect 5100's Multidrop settings when you use the **Receive** command.



Additional Options

For additional RS-485 communications options, click the **Click for more configuration...** button in the **Additional Options** section of the RS-485 communications view. The **Additional Options** dialog will appear.

The screenshot shows the 'Additional Options' dialog box with the following settings and callouts:

- Protocol:** Host Protocol: Point-to-Point (dropdown), LRC Enabled: No (dropdown). Callout: **Host Protocol** defines the type of connection to the host. **LRC Enabled** lets you turn **Longitudinal Redundancy Check** on or off.
- Time and Date:** Time Stamp: Hrs:Min:Secs (dropdown), Date Stamp: MM/DD/YYYY (dropdown), Separator: SPACE (text), Location: After Code (dropdown). Callout: **Time Stamp** and **Date Stamp** allow you to append the time and date to symbol data that is decoded and displayed.
- Transmit Framing:** Line Preamble: ^M (text), Line Postamble: ^M^J (text), Include Address: Yes (dropdown). Callout: **Separator** lets you determine the ASCII character that will separate the time and date stamps from symbol data. **Location** allows you to determine whether you want the time and date stamps to appear before or after symbol data. Callout: **Include Address** allows you to append the reader's Multidrop address to the beginning of each reader's data output.
- Receive Framing:** Intercharacter Timeout: 250 ms (text), Line Terminator: NUL (dropdown), ASCII (checkbox).

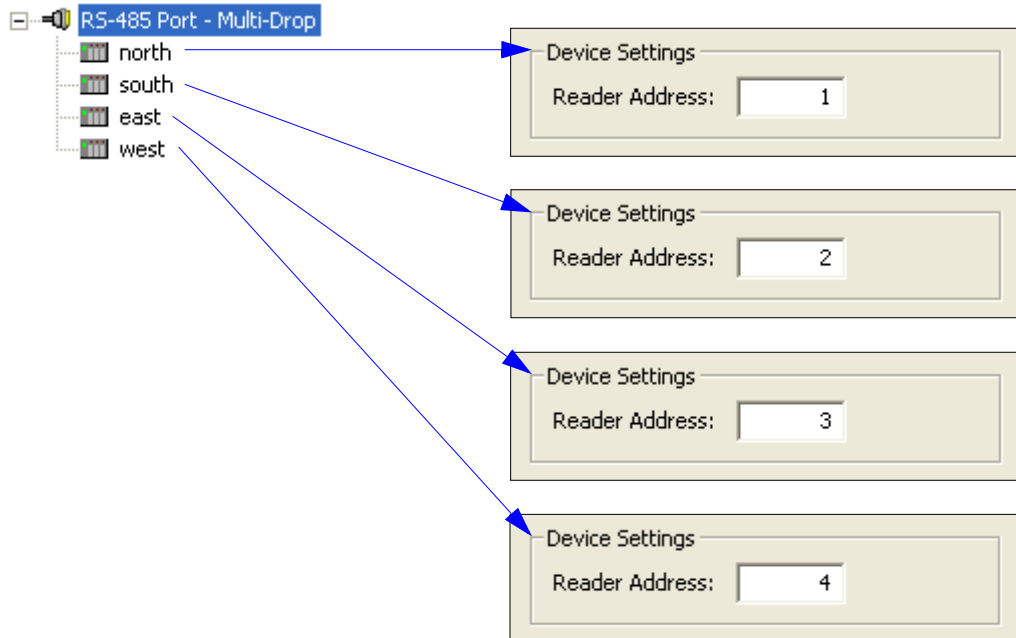
Buttons: OK, Cancel

Intercharacter Timeout allows you to set the amount of time that must pass before the end of a read cycle. **Line Terminator** is the end-of-message character that must be sent at the end of a message stream to or from the MS-Connect 5100 or host device.

Add Devices

The MS-Connect 5100 supports up to 32 Microscan readers in a Multidrop network. After all devices (readers) in the network have been added, you must assign a station number (Multidrop address) to each.

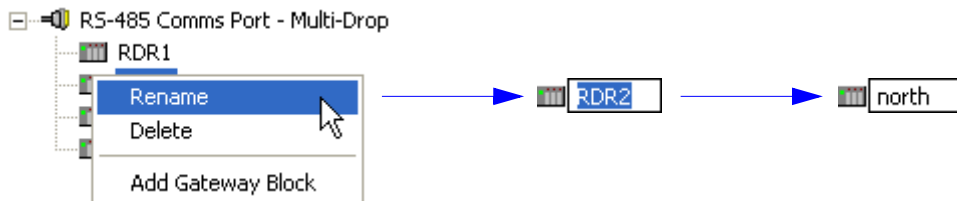
Each reader must be assigned its own Multidrop address when it is added to the network.



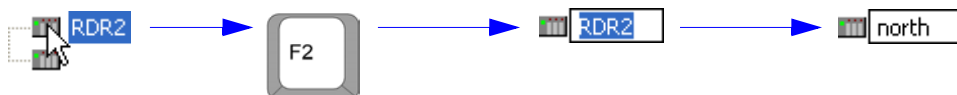
Renaming a Device

You can rename each device shown in the tree control to reflect specific characteristics of your application, as in the example shown below. There are two ways to rename a device:

- Right-click the device icon and select **Rename**, then type the new name.



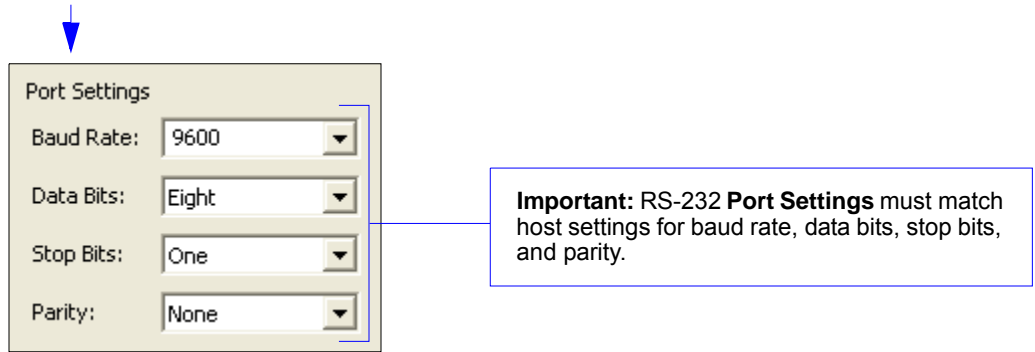
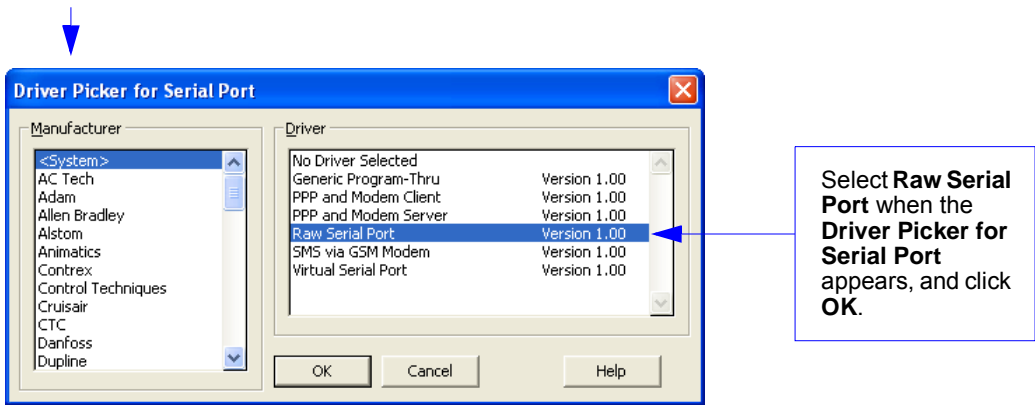
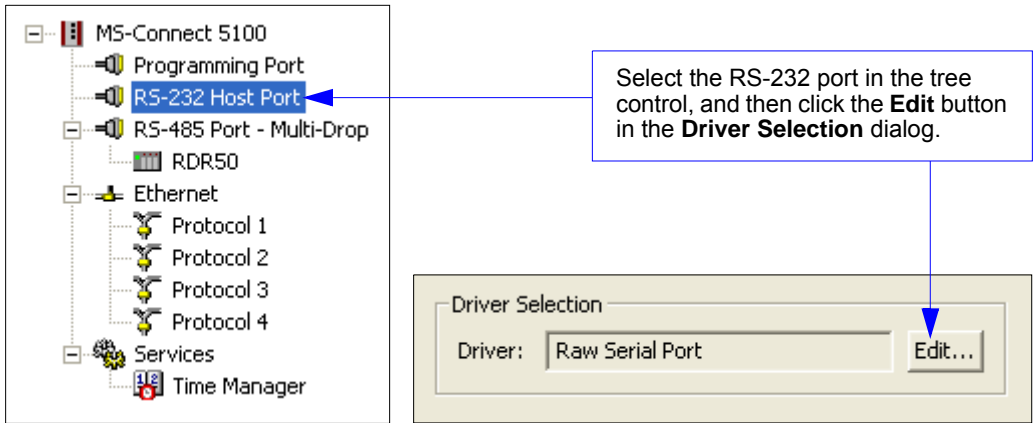
- Or, select the device and press the **F2** key, then type the new name.



Step 8 — Adjust Host Port Settings

RS-232

You must adjust the RS-232 host port to send polled data in the proper format.
To adjust the RS-232 host port:

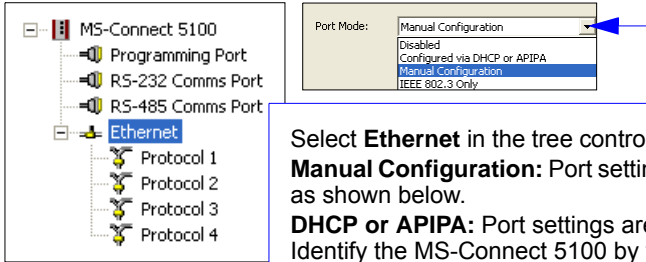


Ethernet TCP/IP

You must adjust the Ethernet host port to send polled data in the proper format.

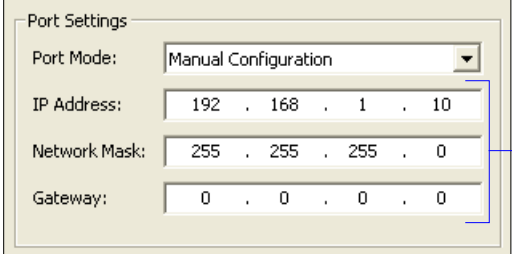
To adjust the Ethernet TCP/IP host port:

1



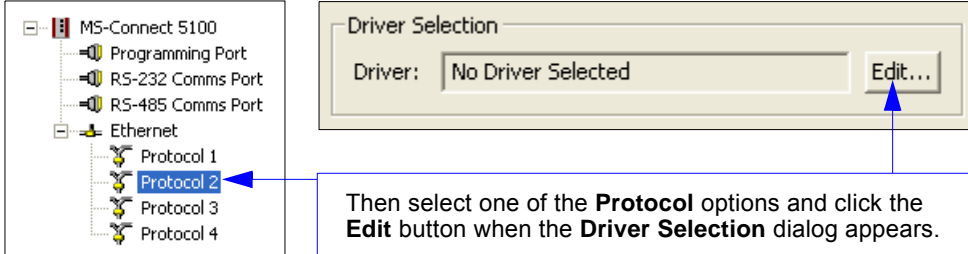
Select **Ethernet** in the tree control and then select Port Mode. **Manual Configuration:** Port settings are manually configured as shown below. **DHCP or APIPA:** Port settings are configured automatically. Identify the MS-Connect 5100 by the MAC address.

2



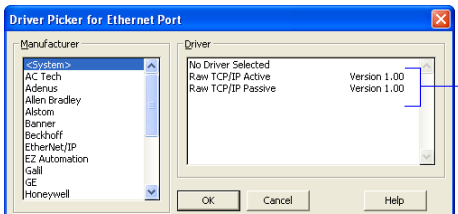
Enter the IP Address, Network Mask, and Gateway Address.

3



Then select one of the **Protocol** options and click the **Edit** button when the **Driver Selection** dialog appears.

4



Select **Raw TCP/IP Active** or **Raw TCP/IP Passive** to determine how the connection is established. **Note:** In **Active**, the MS-Connect 5100 establishes a connection with the host, and in **Passive**, the host establishes the connection.

If you are using **Active TCP/IP**, enter the **IP Address** and **TCP/IP Port** of the host before saving changes to the MS-Connect 5100.

If you are using **Passive TCP/IP**, enter the TCP port number where the host will establish its connection.

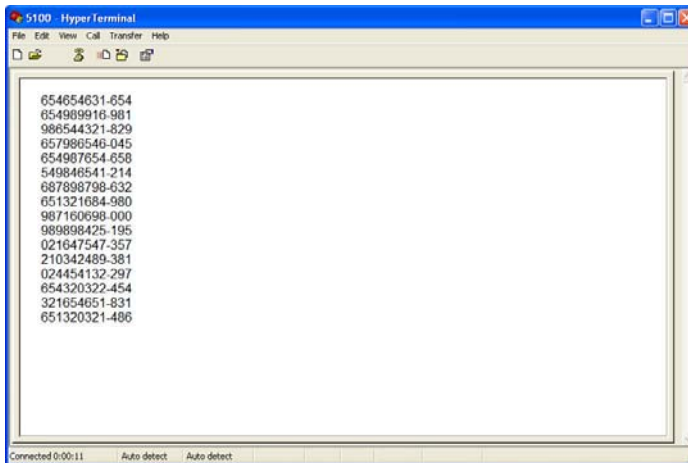
Step 9 — Configure the Reader

Every application is unique, and each Microscan reader has different configuration requirements. Refer to the user manual for the Microscan reader or readers being used in your application.

Important: All readers must be configured for Multidrop *before* they can be added to a Multidrop network.

Step 10 — Begin Active Operation of Network

Once all ports and devices are configured, you can begin capturing data.



For information about the Microscan products that can be used with the MS-Connect 5100, consult the documentation on your Microscan Tools Drive or visit www.microscan.com.