Application Note
IMO XGB PLC XG5000 Program

This document guides you through the setup of proprietary vendor specific software installed on you PC. Your supervisor may provide you with additional or alternative instructions.

The document consists of standard instructions that may not fit your particular solution. Please visit our support website for latest revisions of documentation and firmware:

http://www.secomea.com

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1. Prerequisites for This Guide

The following guide will assist you to setup a remote and online connection to the IMO equipment placed on the customer site using your IMO XG5000 Program software installed on your PC.

Prerequisites for this guide are:

- You have an operational LinkManager installed on your PC with a GateManager certificate that allows you to connect to the SiteManager agents.

- You have the IMO software installed.

- You have the IMO device agent installed and configured on the SiteManager at the remote site, and there is access between the SiteManager and the IMO PLC.
  - A Serial attached PLC (Such as the XGB XECDR32H/DC) must be configured with agent device type **IMO/Serial** on the SiteManager.
  - A network attached PLC (Such as the XBL-EMTA Module for XGB) must be configured with agent device type **IMO/Ethernet** on the SiteManager.

If any of these prerequisites are not met, you should contact the person / department responsible within your own company or at the company responsible hereof.
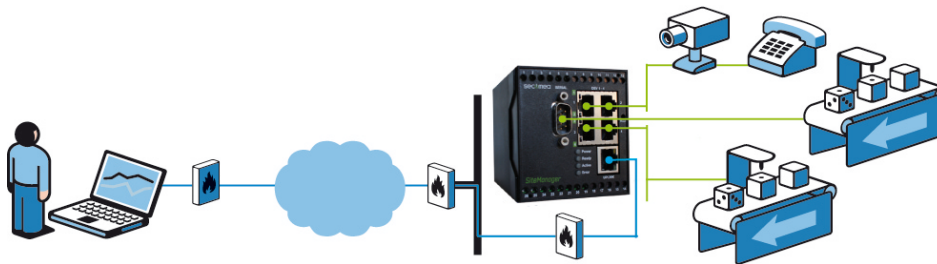
System Overview

The communication path is as follows:

XG5000 Program → **LinkManager** → GateManager → SiteManager → PLC.

This guide will elaborate on the components marked with **bold.**

The following system overview depicts a SiteManager 3134 at the customer location:
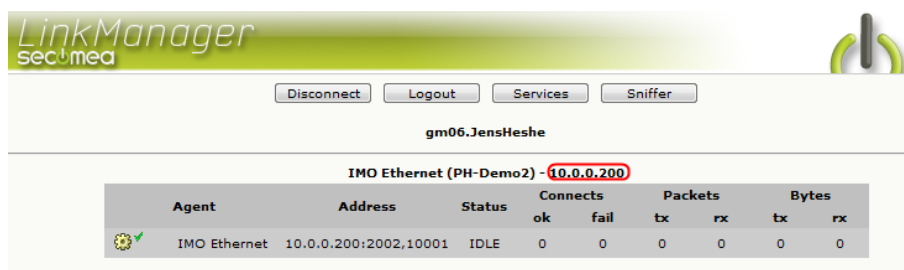

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2. TCP Ethernet Access

The following describes how to connect the IMO XG5000 Program to an IMO PLC that is attached to a SiteManager via Ethernet. The description shows a XBL-EMTA module attached to the PLC.

Note: A network attached PLC must be configured with agent device type **IMO/Ethernet** on the SiteManager.
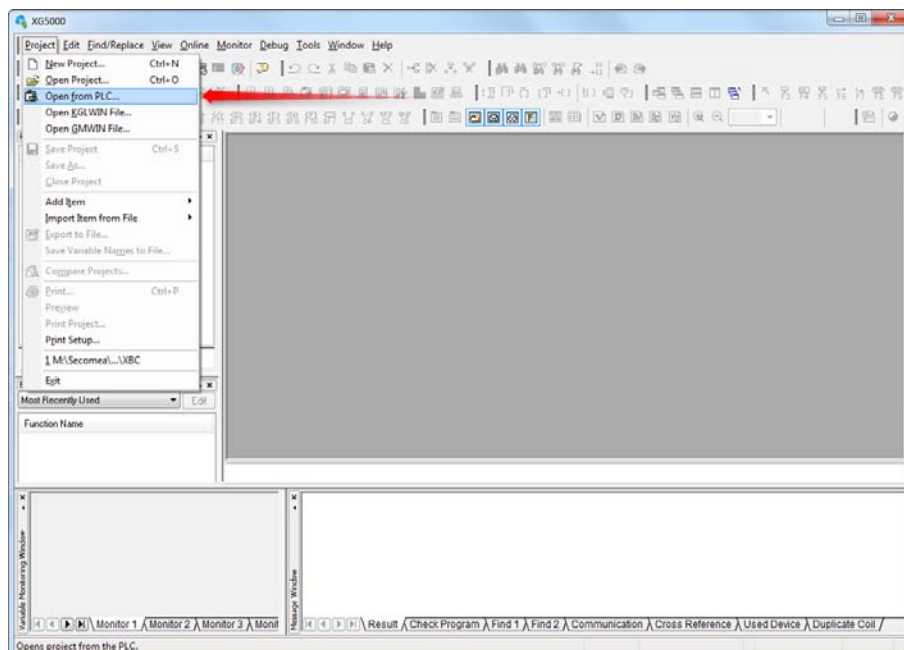
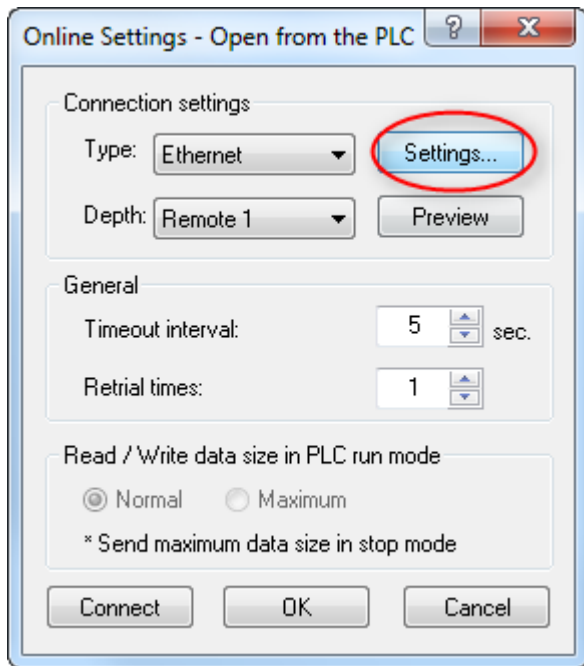1. Locate the agent that represents you TCPI/IP attached IMO PLC

2. You will not see any activity on it yet. This only starts when you connect to the PLC via your project (Make a note of the IP address of the PLC):
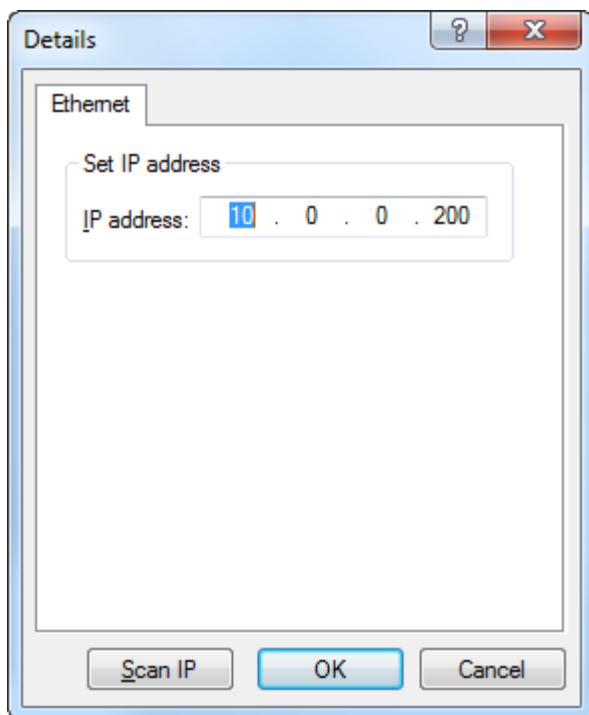

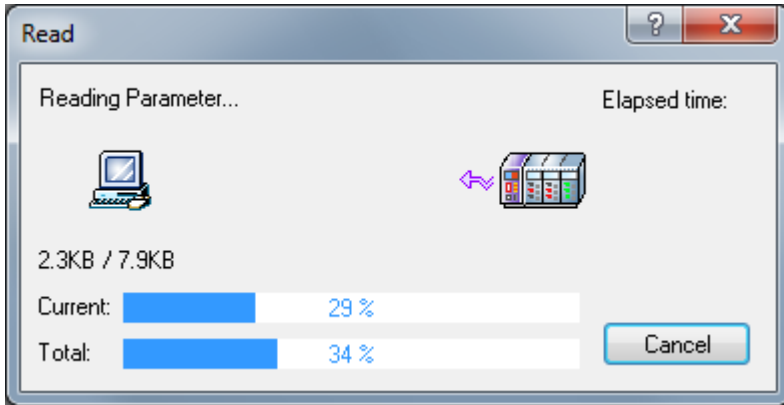3. Start the XG5000 Program and select **file → Open From PLC**.

4. Select **Ethernet** in Type, and click "Settings" to set the IP address.
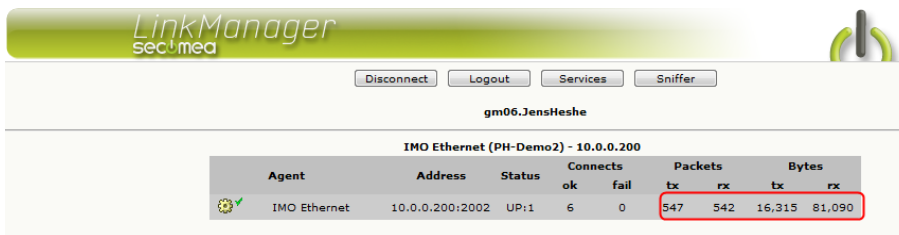

5. Type in the IP address of the device (obtained from section 2) and click OK and OK.

6. The XG5000 Program will start loading data from the PLC. After this, it will show "Reading is completed". Click OK.

7. You are now online with the PLC. You can now observe data traffic in the LinkManager:

3. Serial Access via Serial IMO cable

The following describes how to connect the IMO XG5000 Program to an IMO PLC that is attached to a SiteManager via an IMO Serial cable.

Note: A Serial attached PLC (Such as the XGB XECDR32H/DC) must be configured with agent device type IMO/Serial PLC on the SiteManager.

1. Locate the agent that represents your network attached IMO PLC

2. When connecting the agent, you should see some activity in the tray icon area, which is the auto configuring of a virtual serial port. If your SiteManager, and IMO PLC is correctly attached, you should also see the status of the agent become OK, and a few bytes of traffic:


3. Now right click the LinkManager system tray Icon, and select **Status**. Make note of the Serial port that has been assigned (in this case COM5):


Right click the LinkManager system tray icon again, and select **Options**. Enter the number of the COM port you found under status. This will ensure that you will always get this port in the future.

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IMPORTANT: if you change the port you must stop and start the LinkManager.
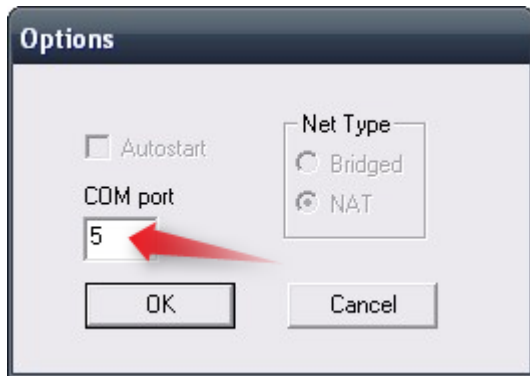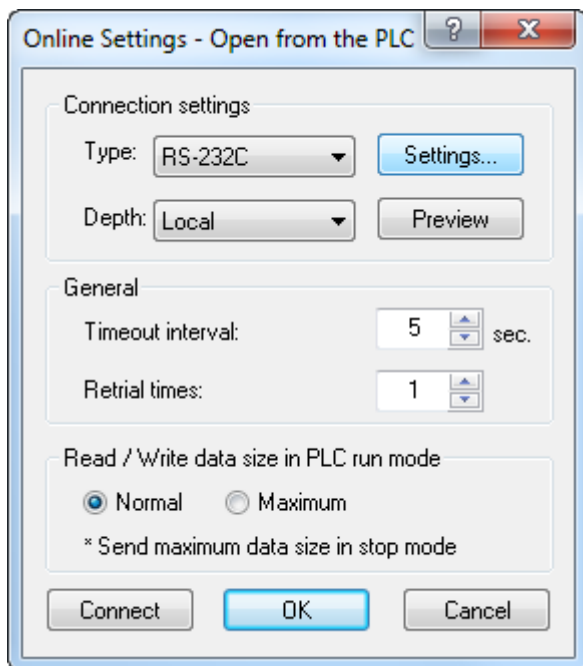

Note: You can also force another COM port (e.g. COM2). Just ensure in your Windows device manager, that the port is not conflicting with an existing COM port. See Appendix A for info on how to organize COM ports.

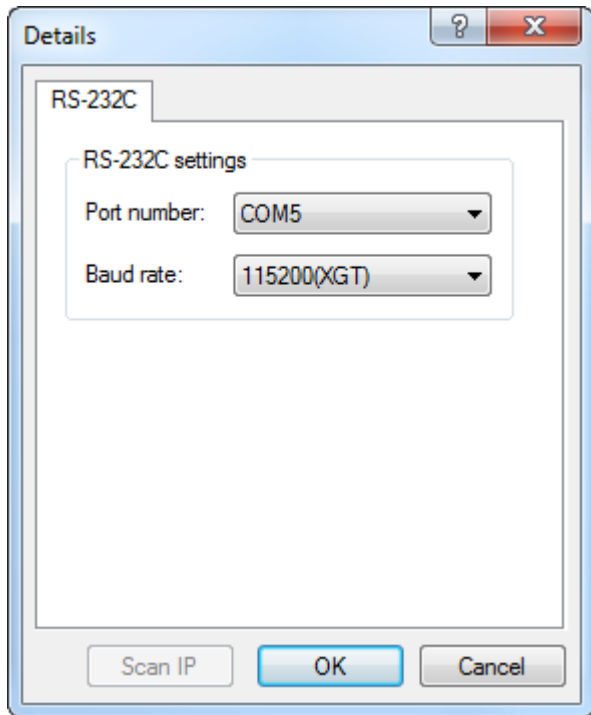4. Open the XG5000 Program and select **Project → Open From PLC**:
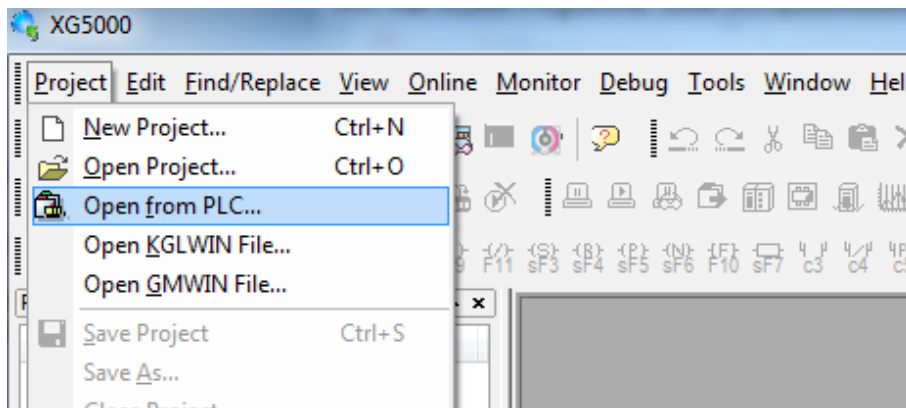
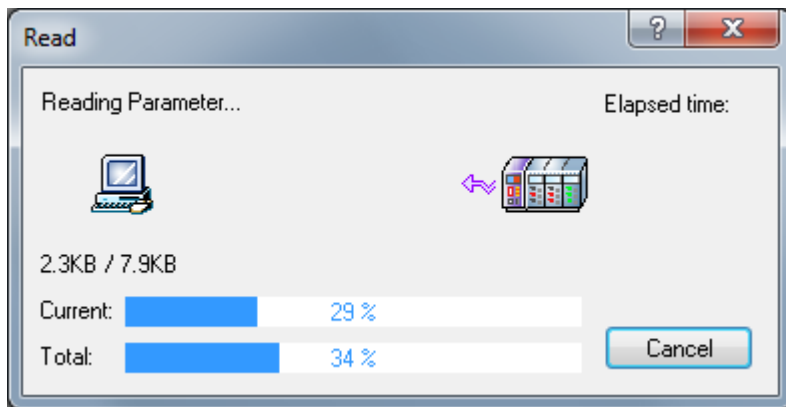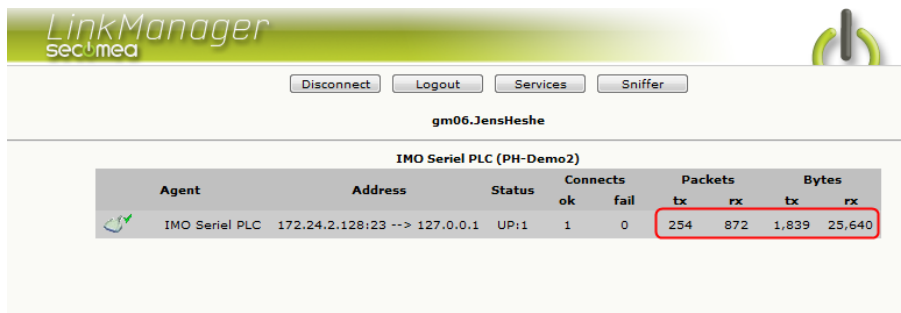5. Select **RS-232C** in Type, and click "Settings".

6. Select the COM port (obtained from section 3) and click OK and OK.

7. The XG5000 Program will start loading data from the PLC. After this, it will show "Reading is completed". Click OK.

8.   You are now online with the PLC. You can now observe data traffic in the LinkManager:

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4. Ethernet connection via Windows XP under VMWare

You can run the XG5000 program inside a VMWare engine, to an IMO PLC that is Ethernet attached to a SiteManager.

Note: LinkManager must be installed on the hosting machine, and <u>NOT</u> inside the VMWare Windows XP image. LinkManager cannot run inside a VMWare virtual machine.

The following illustrates VMWare Player, which can be downloaded from
http://www.vmware.com/support/product-support/player/

1. Locate your Windows XP that has XG5000 program installed, and enter **Edit virtual machine settings.**

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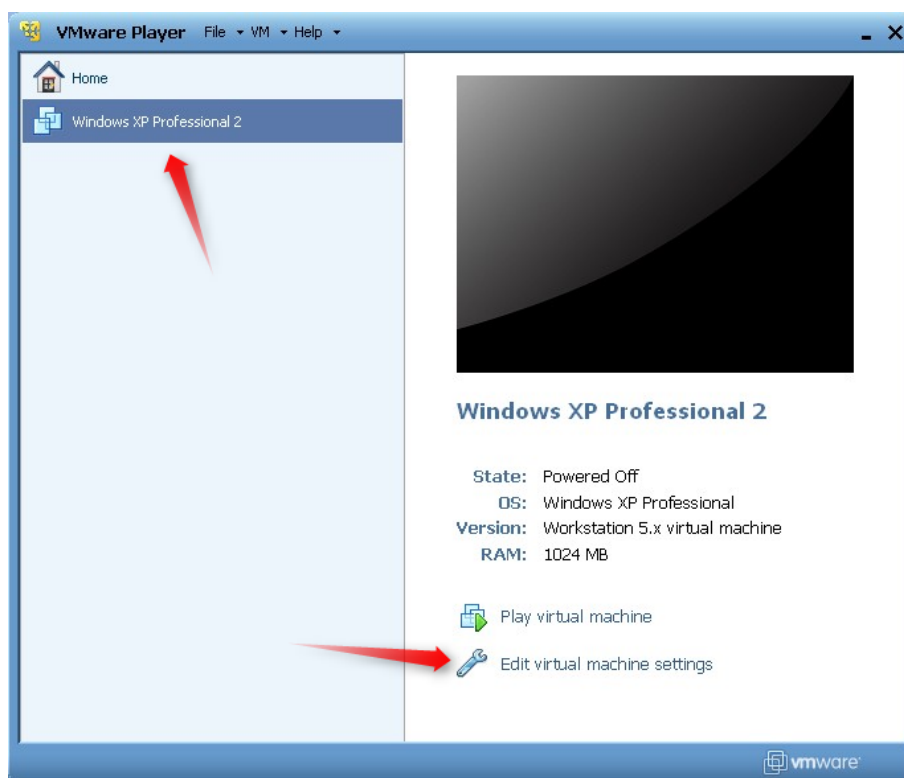
2. Make sure the Network Adapter settings is set to **NAT:**

3. Start the VMWare engine and on the host PC start LinkManager.

4. Follow the procedure of section **2 TCP Ethernet Access** to get access to the PLC via LinkManager

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5. Serial connection via Windows XP under VMWare

You can run the XG5000 Program inside a VMWare engine, to an IMO PLC that is Serial attached to a SiteManager.
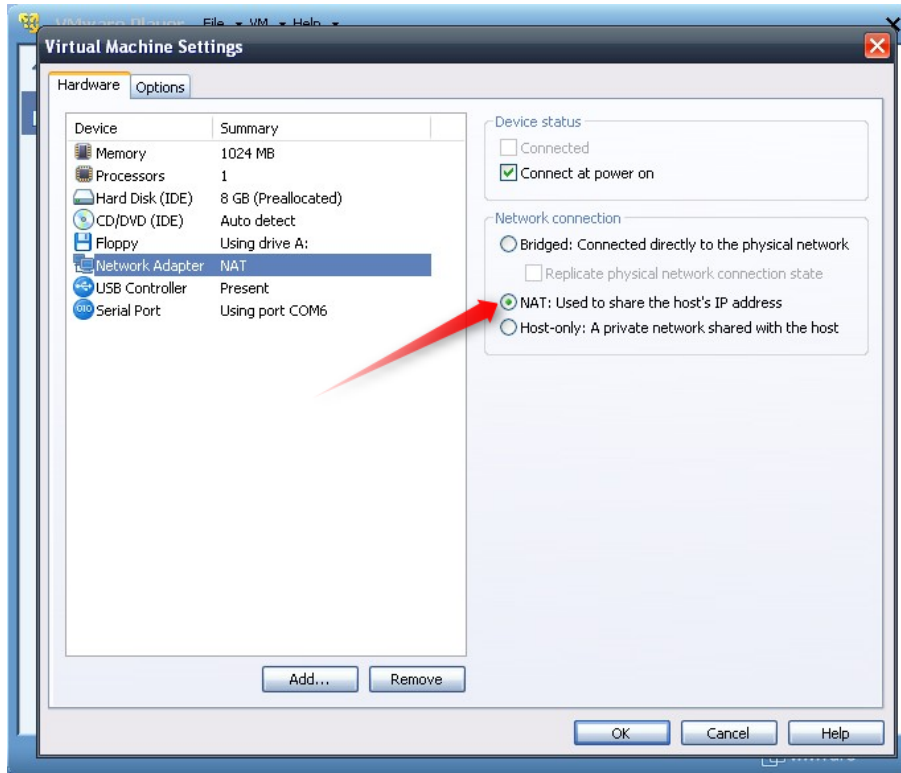
Note: LinkManager must be installed on the hosting machine - and <u>NOT</u> inside the VMWare Windows XP image. LinkManager cannot run inside a VMWare virtual machine.

The following illustrates VMWare Player, which can be downloaded free of charge from http://www.vmware.com/support/product-support/player/

1. Follow step 1-3 of section **3 Serial Access via Serial IMO** cable on **7**. This will create a COM port even if the PC does not have a physical COM port.

2. Locate your Windows XP that has XG5000 Program installed, and without starting it, enter **Edit virtual machine settings.**
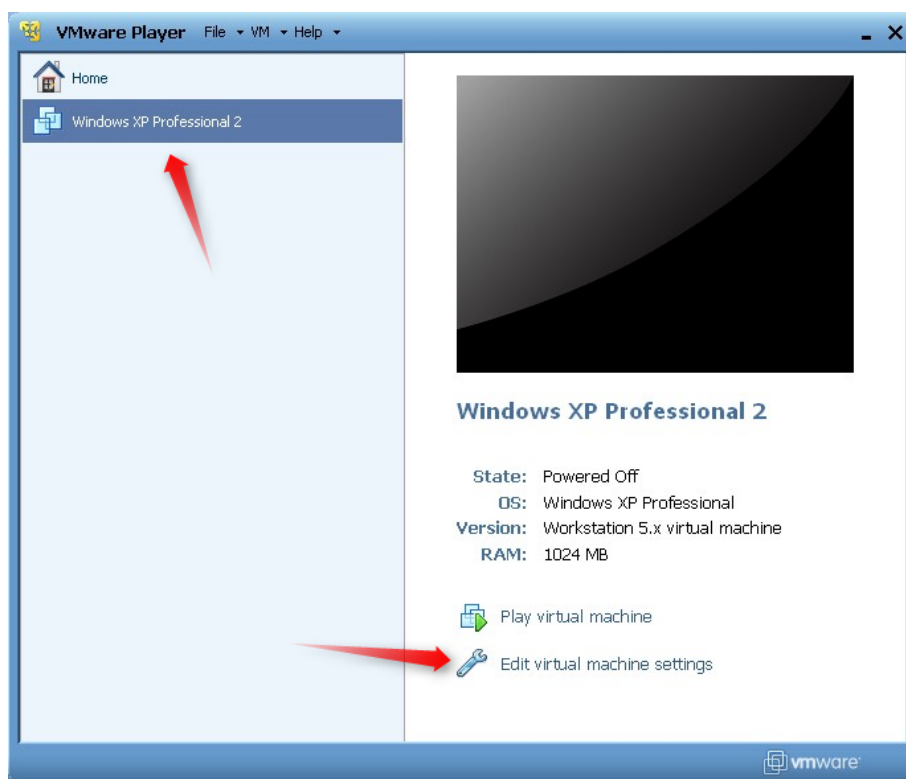
3. Add Serial Port to the Hardware list (if it does not already exist).
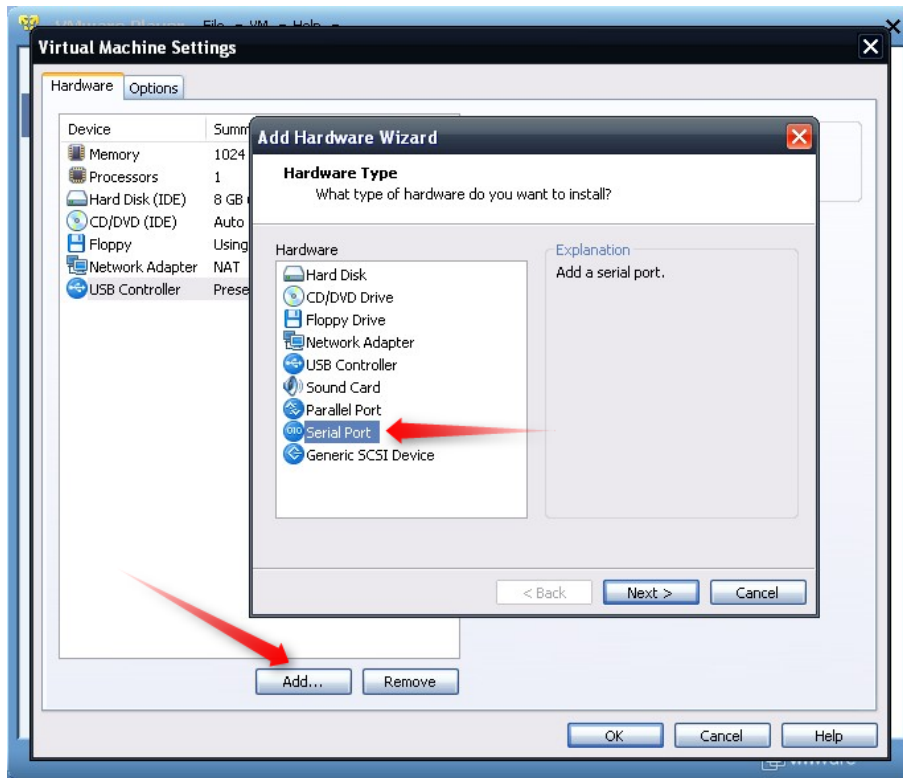
4. Select "Use physical port" (Even though LinkManager makes a virtual COM port, VMWare sees it as a physical port)
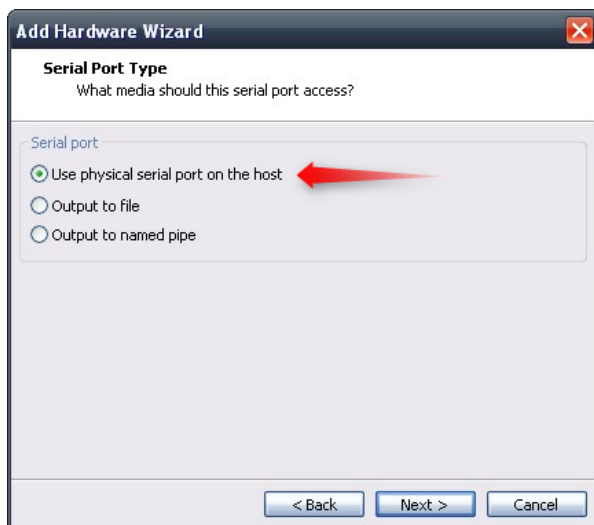
5. Set the port to the COM port used by the LinkManager (see section **2. Serial Connection**)
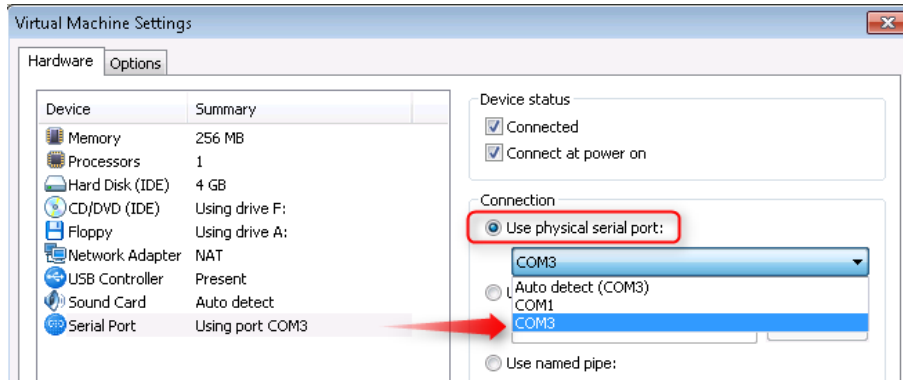

6. If VMWare does not allow you to add a Serial port, it may be because the PC does not have a physical Serial port.

7. Press **OK** twice, and select the Select **Finish** and **OK**, Start the VMWare WindowsXP image, and start the XG5000 Program.

8. Follow the procedure described in section **3 Serial Access** on getting access to the PLC via LinkManager.

   Note: VMWare will typically make the physical COM port of the host system (e.g. COM3) appear to the virtual OS as COM1. You should configure the XG5000 Program to use the port of VMWare (COM1) and not the physical port of the host system (COM3) that is used by LinkManager.

5.1. Startup order of VMWare, LinkManager and XG5000 Program

If you have already preset a COM port in LinkManager as well as in VMWare, the startup order would be irrelevant. You can stop and start the components individually.

If you encounter problems, or you have changed the COM port setting of LinkManager it is recommended to do the following:

1. Stop the VMWare engine.

2. Stop LinkManager completely.

3. Start LinkManager.

4. Connect to the Serial PLC and check the assigned COM port under Status (by right-clicking the LinkManager tray icon)

5. Check the COM port settings of the Virtual Machine Settings of the Windows image with the XG5000 Program.

6. Start the VMWare image.

7. Start XG5000 Program and connect to the PLC

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Appendix A, Organizing COM ports in Windows

Clean up Windows Registry for redundant COM ports:

You may experience that older versions of the IMO software require a lower COM port number. In case your PC assigns a COM port of e.g. 13, it may be due to previous installs of virtual COM ports from in relation to installation of other programs.

You can clean your PC for redundant COM ports in Windows registry:

1. Open regedit (Start → run → Regedit)
2. Navigate to:

   HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\COM Name arbiter
3. In the ComDB set all values to 00
4. Restart your PC

Enable LinkManager to use COM1:

If you prefer the COM port to be COM1:

Even if no COM ports are installed on the PC, Windows will never assign a COM port lower than COM3 to the LinkManager. You therefore have to do the following to force LinkManager to use COM1:

1. Open Windows Control Panel → System → Hardware → Device Manager → Ports (COM & LPT).
2. If there already are physical COM ports listed, you must re-assign the port numbers to free up COM1.

   Right click a COM port and select Properties → Port Settings → advanced
3. Change the COM port number in the drop down list.
4. Restart your PC.
5. Right click the LinkManager system tray icon and select Options.
6. Enter 1 in the COM port field.
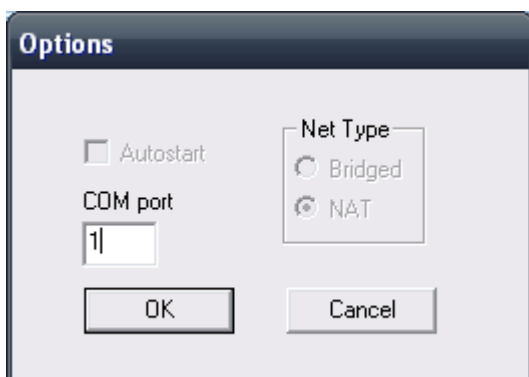
7. Stop and Start the LinkManager and start the Serial agent.

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