

INSTALLATION GUIDE

NI-Industrial Communications for EtherCAT®

This document explains how to install the NI-Industrial Communications for EtherCAT software on a real-time controller and configure the Ethernet adapter for EtherCAT.

Refer to the *NI-Industrial Communications for EtherCAT Help* for more information about configuring and using the software.

Installing the Software on a Real-Time Controller



Note Before you install the software on a real-time controller, you must install the prerequisite software, including the NI-Industrial Communications for EtherCAT software, on the host. Refer to the *NI-Industrial Communications for EtherCAT Readme* for information about software requirements, installation instructions, and a list of supported hardware.

Complete the following steps to install the software on an NI real-time controller.



Note Refer to the [Installing the Software on a PXI Controller](#) section for information about installing the software on a PXI controller.

1. Launch NI Measurement & Automation Explorer (MAX) from the Start menu or **(Windows 8)** from NI Launcher.
2. Double-click **Remote Systems** in the configuration tree to discover the real-time controller.



Note MAX discovers all devices in the network, which takes a few seconds. If you cannot find the real-time controller after MAX displays all devices, select **Remote Systems** and press <F5> to refresh the list. If this does not work, make sure that you connect the real-time controller to the network with the required software installed or contact National Instruments.

3. Locate and expand the real-time controller, right-click **Software**, and select **Add/Remove Software** from the shortcut menu to launch the LabVIEW Real-Time Software Wizard. Choose one of the following options to install the software.
 - **Recommended Software Set**—This option enables you to install the NI recommended software set to the real-time controller. Select the recommended software set and click the **Next** button. Select **NI-Industrial Communications for EtherCAT x**, where *x* is the version number.



Note Some real-time controllers do not have the recommended software set. If the real-time controller does not have the recommended software set, perform a custom installation.

- **Custom Software Installation**—This option enables you to customize the installation. Select the software that you want to install, including **NI-Industrial Communications for EtherCAT x** , where x is the version number. Click the **Next** button.

Installing the Software on a PXI Controller

Complete the following steps to install the software on a PXI controller.

1. Power off the PXI chassis.
2. Remove the Ethernet PXI board from the PXI chassis. Power on the chassis.
3. Install the NI-Industrial Communications for EtherCAT software on the PXI controller. Refer to the [Installing the Software on a Real-Time Controller](#) section for installation instructions.
4. Power off the chassis.
5. Plug the Ethernet PXI board into the PXI chassis. Power on the chassis.

Configuring the Ethernet Adapter

EtherCAT requires a special Ethernet adapter on the real-time controller to access the EtherCAT network. Complete the following steps to configure an Ethernet adapter for EtherCAT.

1. Connect the real-time controller to the network.



Note By default, some real-time controllers, such as Real-Time Desktop controllers, do not have the special Ethernet adapter to access the EtherCAT network. Refer to the list of supported hardware in the *NI-Industrial Communications for EtherCAT Readme* for more information about the additional adapters that you can add.

2. Launch MAX.
3. Double-click **Remote Systems** in the configuration tree to discover the real-time controller.
4. Double-click the real-time controller to launch the advanced configuration page.
5. Click the **Network Settings** tab. MAX displays all physical adapters available.



Note If the real-time controller has a customized Ethernet adapter, you must enable the customized adapter before selecting it for the EtherCAT mode. Refer to the documentation of the real-time controller for more information about how to enable the customized adapter.

6. (Optional) Click the **Log in** button on the toolbar to log into the real-time controller with an account.

7. Choose the adapter for an EtherCAT network and select **EtherCAT** from the **Adapter Mode** pull-down menu.



Note Do not select the primary adapter for the EtherCAT mode to control the EtherCAT slave, because this adapter is reserved for configuration and programming.

8. Specify the **EtherCAT Master ID** within the range of 0-255. If you do not specify the ID, MAX automatically assigns the smallest number available to the master ID.
9. (Optional) If you use a PXI or an Industrial Controller, repeat steps 7 and 8 to configure multiple adapters for EtherCAT. Make sure that the master IDs are unique for each adapter. If you use a CompactRIO controller, you can assign only one network adapter for EtherCAT.
10. Click the **Save** button on the toolbar to apply the settings. MAX restarts the real-time controller.



Note If you change the device mode to EtherCAT, you cannot use the device in an ordinary Ethernet network. You can change the device mode back to TCP/IP if you want to use the device in the ordinary Ethernet network later.

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