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Application of SmartWire-DT®

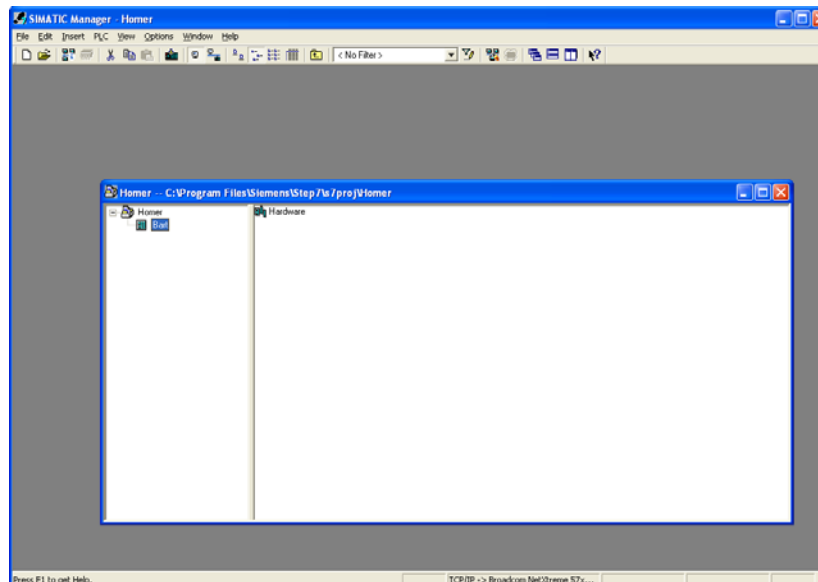
How to use SmartWire-DT on PROFIBUS® DP using a Siemens® S7-300 PLC

Application

This application note will describe how to initialize a Siemens S7-300 PLC to communicate to a SmartWire-DT system using the EU5C-SWD-DP SmartWire-DT PROFIBUS DP gateway. This will detail the steps needed to set up the PLC using Simatic® S7 PLC programming software.

Beginning a New Project

Do not use the Wizard tool for this but follow the instructions below instead. Give project a name and click **Insert->Station-> SIMATIC 300 Station**. Highlight the name of the project, and double-click on the PLC under the tree.

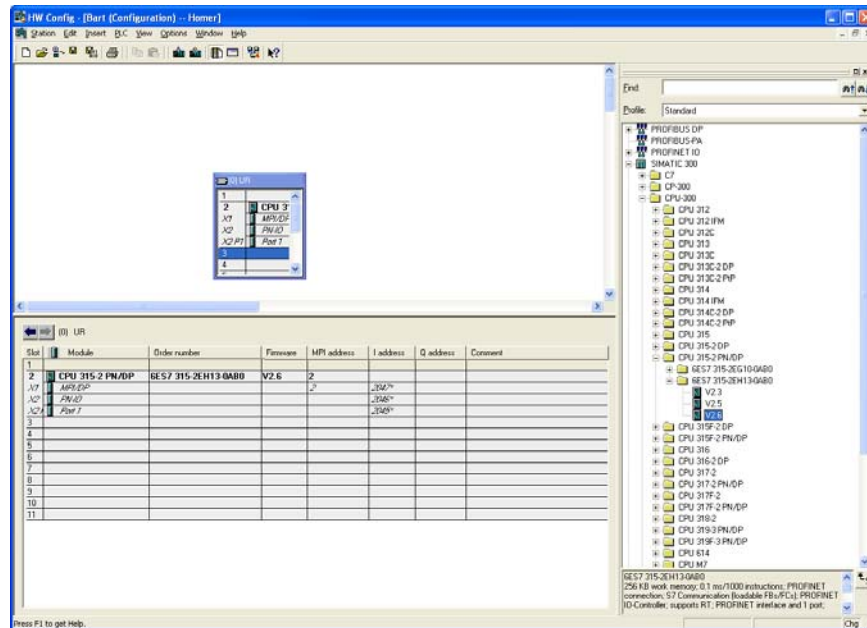


Click on "Hardware" to bring up the hardware configuration Manager.

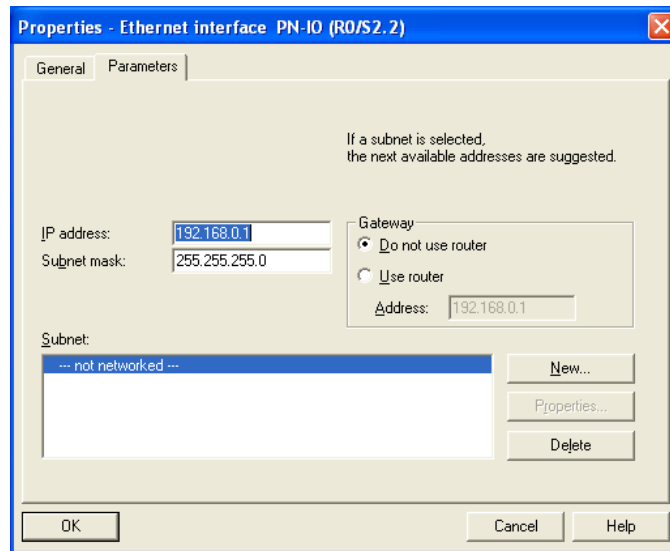
Setting up New Hardware Configuration

In Hardware Configuration Window, make sure you can view the catalog with **View->Catalog**.

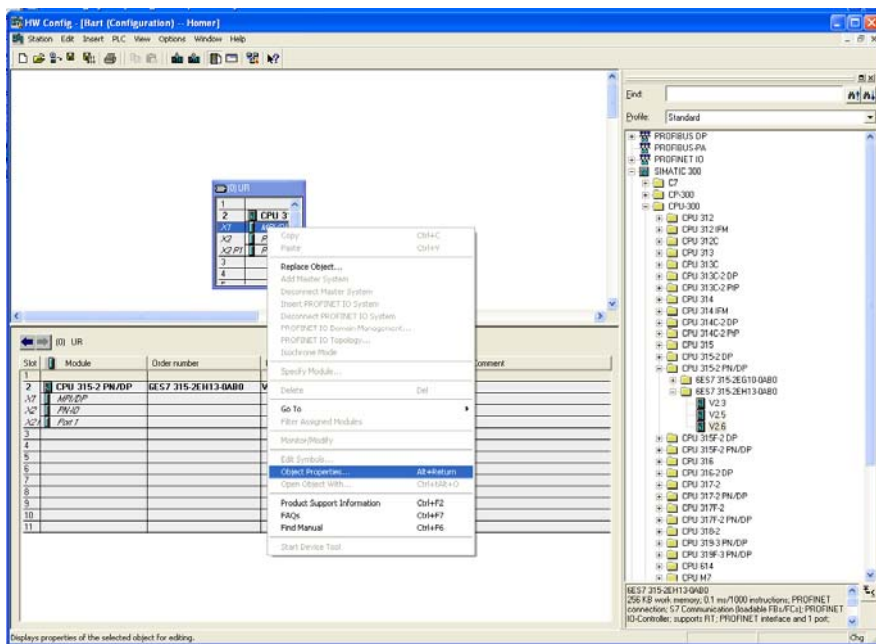
In the catalog, select **SIMATIC 300->RACK-300** and drag the Rail element onto the configuration window. With Rail in place, select PLC by clicking through **SIMATIC-300-> CPU-300->CPU315-2-PN/DP->6ES7 315-2EH13-0AB0->V2.6**



Double click on V2.6 to add. This will bring up the box below. For this example, please note that IP address of the sample PLC used is 192.168.0.1.

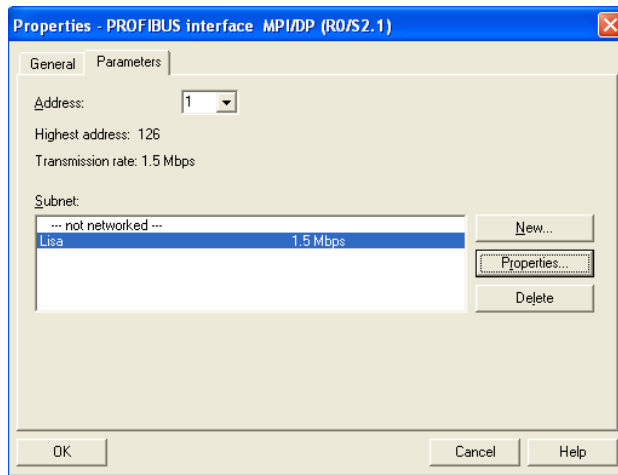


Right click on Slot 2 X1 of the new PLC on the rail and select Object Properties.

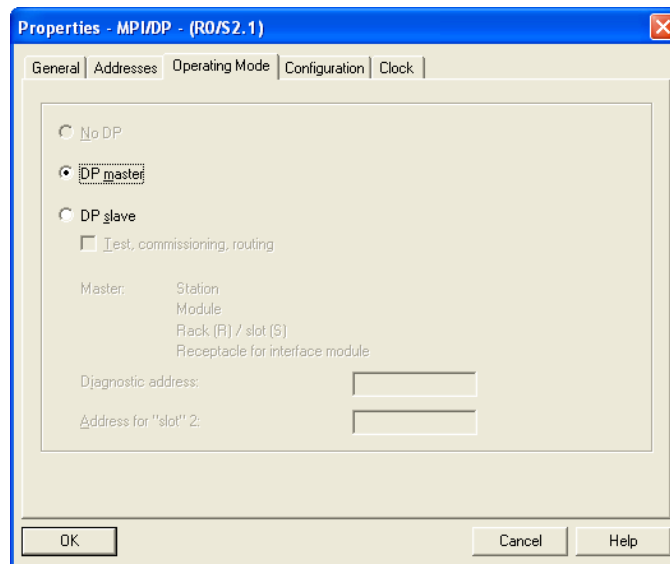


In Object properties, change the interface type to PROFIBUS. This will pop up a new window.

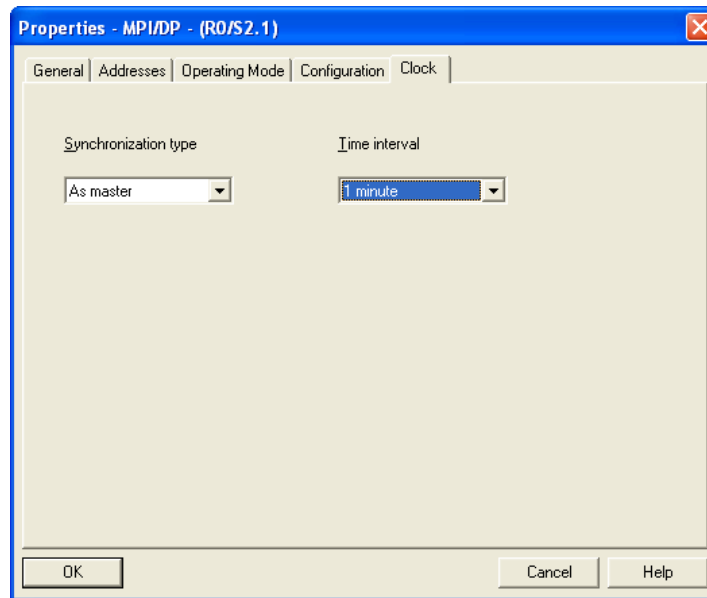
In the PROFIBUS interface window, Parameters tab, select NEW and press OK in the window that opens. Set the address in this window to designate the master address on the PROFIBUS network. Usually this is set to “1” if nothing is hooked upstream of this PLC.



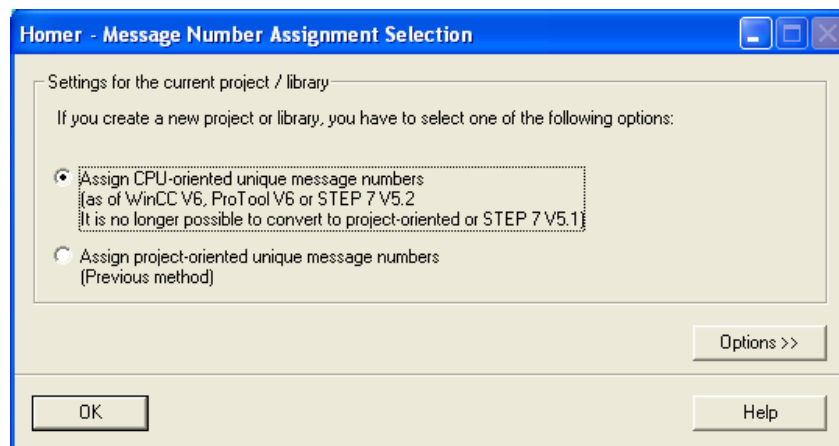
In the Properties MPI/DP window, make sure that under the Operating Mode tab DP master is checked.



Also, set a time interval for Synchronization under the Clock tab. Hit OK to close out of properties.



Click on **Options-> Configure Network** to open network configuration. S7 will ask if you want to write this data to the PLC, click OK. It will ask about Message Number Assignment, use "Assign CPU-oriented unique message numbers"



Setting up Networking and Connecting to Gateway

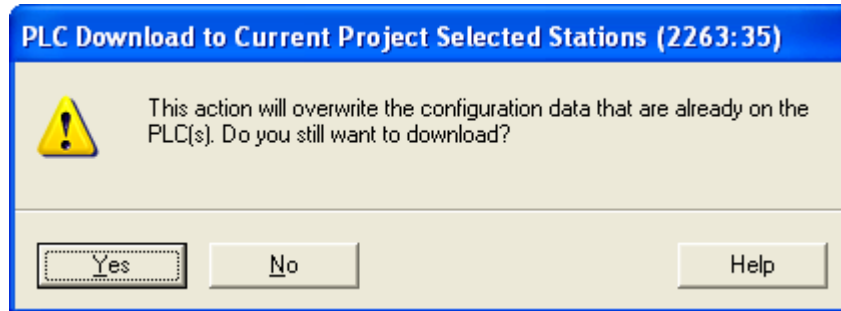
As with Hardware, make sure you can view the Catalog with View-> Catalog. Click on the MPI/DP division of the PLC representation on the screen.

In the Catalog, select: **PROFIBUS DP-> Additional Field Devices-> SWD-Assist -> the GSD that you created in SWD-Assist**. It should bring up a window asking what address you want this to be. (See MN05013002Z for instructions on exporting GSD fields from SWD-Assist)

Select **Network-> Save and Compile** from the menu and choose "Assign CPU-oriented unique message numbers" if it did not come up before.

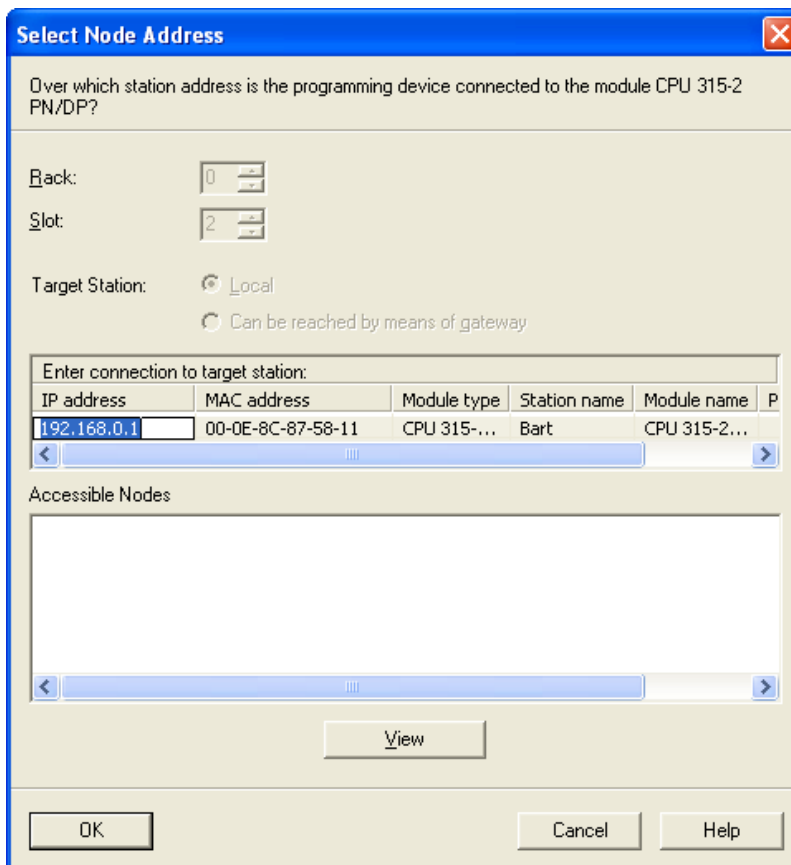
Downloading the Program

Select **PLC->Download to Current Project->Selected Stations** and click Yes when it tells you it will overwrite the existing configuration data. The Download to Module window may pop up at this point telling you that the PLC name has been changed. This is okay, so press "Ok"



Note: If in Network Manager, this is all you need to do. The program can also be downloaded using the hardware manager. Instructions for this are on the next page.

Perform steps as before, but now it will ask the node you want to download to. Select the target module (it should be the only one of the list) and when the "Select Node Address" window comes up, press the "View" button so the IP address of the PLC comes up in the Accessible Nodes window. Highlight this and press OK.



If all goes well, the DC5V and Run lights on the S7-300 CPU should be green with nothing else lit. If the BF1 and SF lights are flashing, there is something wrong with the networking. Check the GSD file you loaded against the hardware and make sure the address DIP switches on the adapter are set correctly.

Supporting Documentation

Manual Name	Reference Number
SmartWire-DT Gateway Manual	MN05013002Z
SmartWire-DT System Manual	MN05006002Z
SmartWire-DT Units Manual	MN05006001Z

Additional Help

In the event additional help is needed, please contact the Technical Resource Center at 1-877-ETN-CARE or 1-877-326-2273.

All other supporting documentation is located on the Eaton web site at www.eaton.com/smawiredt

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Publication Number AD05006003E / TSJ
January 2012