How to Setup Uticor Panel Communication with Siemens HMI S7 300 Series over MPI

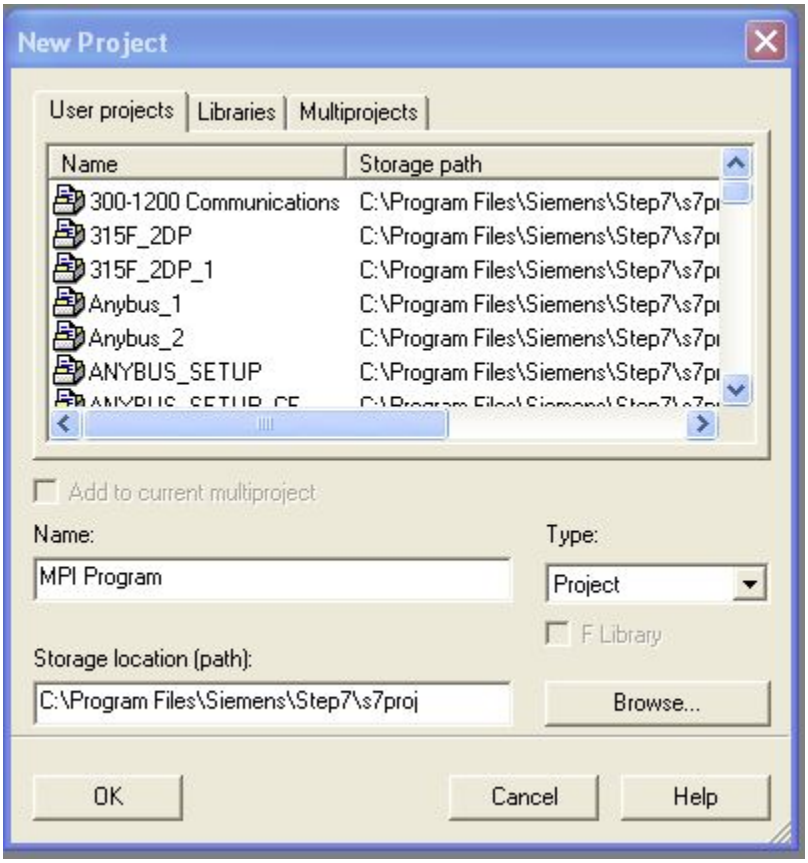
Needed: Uticor HMI (any version), S7 300 PLC (any version), HMI MPI Adapter (example: 6ES7 972-0CA11-0XA0), Uticor CBL-UTICW-012 cable

Software: Simatic v5.5, uWin Tough Panel (any version)

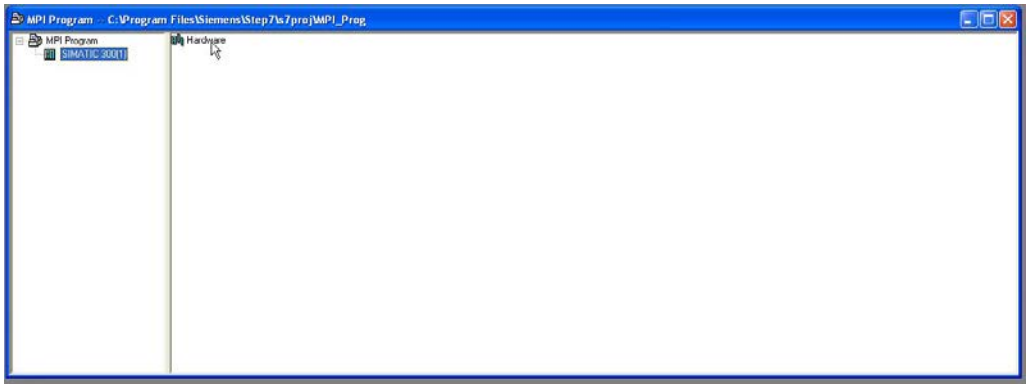
Follow these directions you will create a push button and coil on both PLC and HMI. The PLC and HMI will communicate.

S7 300 directions (Simatic v5.5)

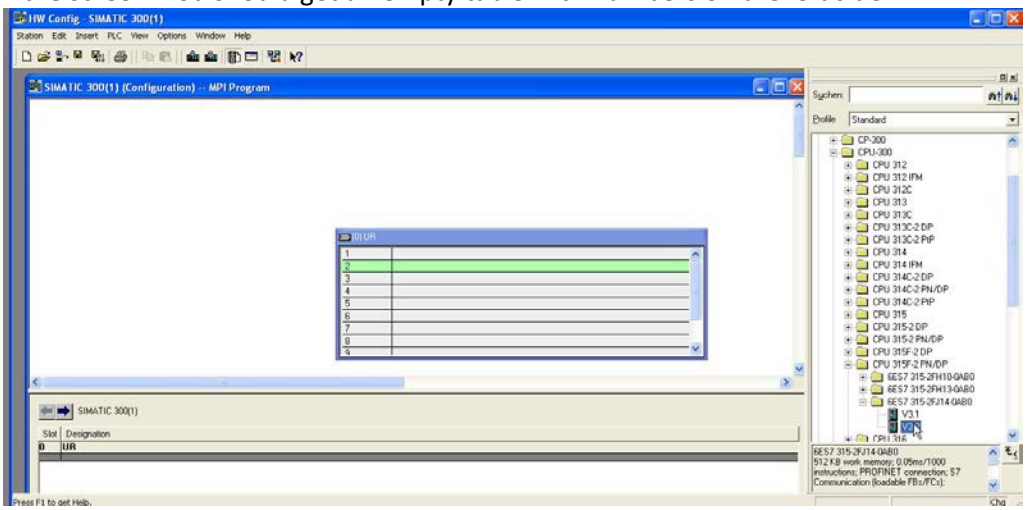
1. Start SIMATIC Manager v5.5.
2. Click on **File > New** and name your new project (Ex: MPI Program) then click OK.



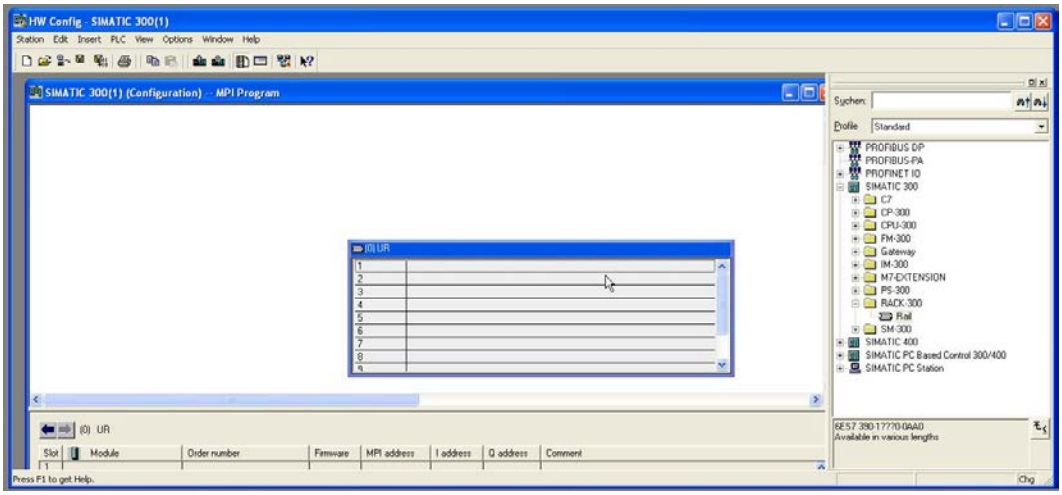
3. The screen dialogue should open. There right click on file name and select **Insert New Object > SIMATIC 300 Station**. You can then name it whatever you want.



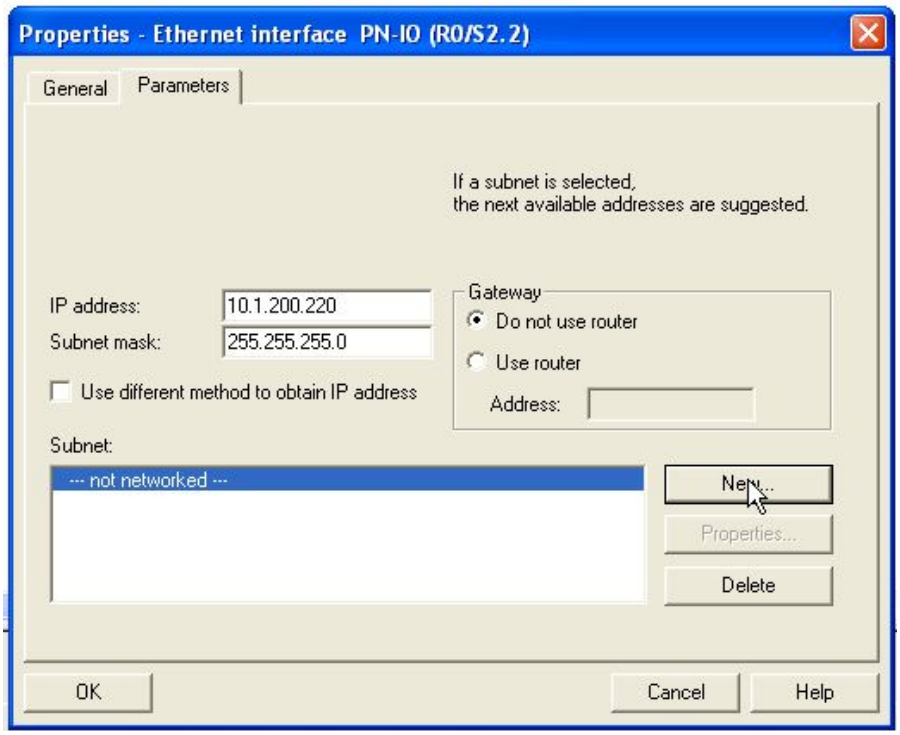
4. Double left click on the Module you inputted (Default name: SIMATIC 300(1)). Then double left click on Hardware.
5. In the dialog that pops up on the right side. Select **SIMATIC 300 > RACK 300 > Rail** and place it on the screen. You should get an empty table with numbers on the left side.

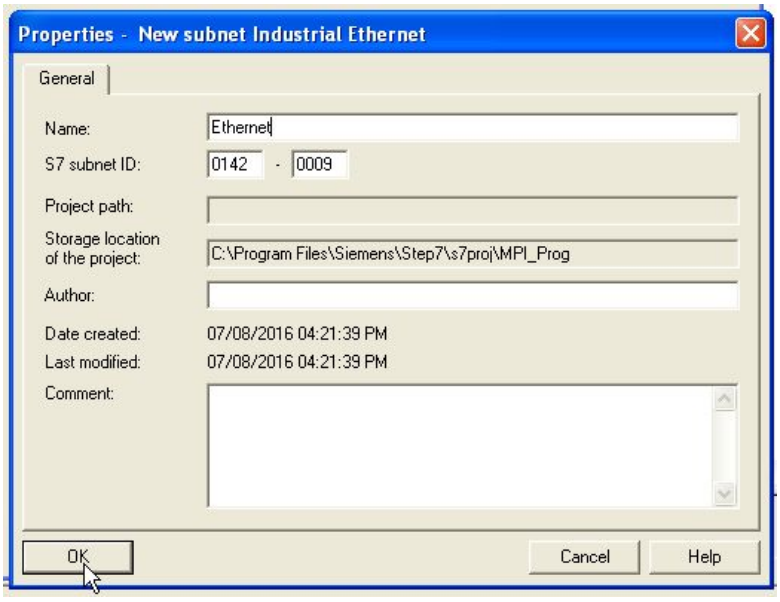


6. Next go back to the right side and in **SIMATIC 300 > CPU-300 > (Select own PLC) (**Ex: CPU 315F-2 PN/DP) **> (Select version)** (Ex: 6Es7 315-2FJ14-0AB0 [Found at bottom of door on PLC CPU]) **> (Select Firmware)** (Ex: V3.2)

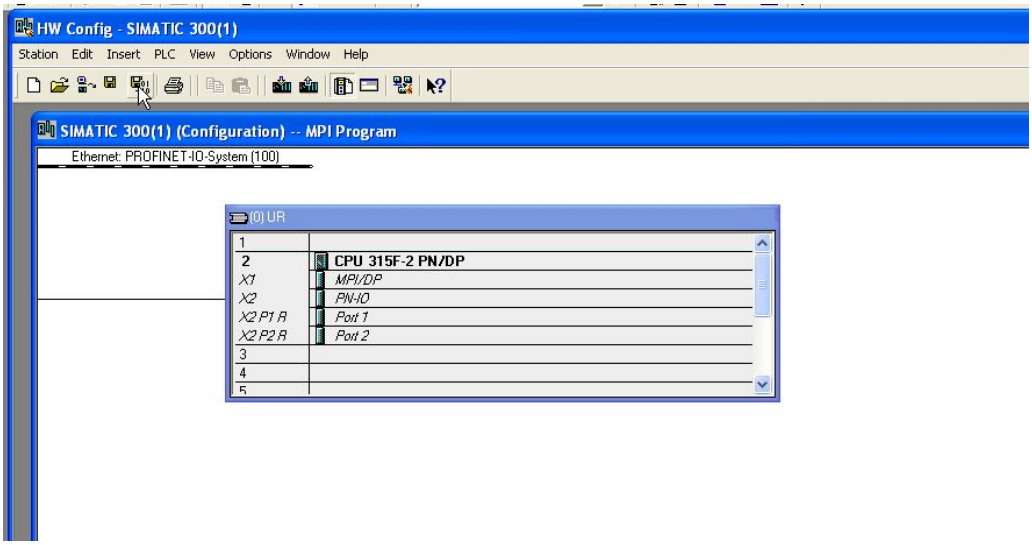


7. Drag this selected CPU to the 2nd slot. Input wanted IP address (make sure that computer on IP address close by). Then press new and press OK to create an industrial Ethernet. Press OK to finish hardware setup.

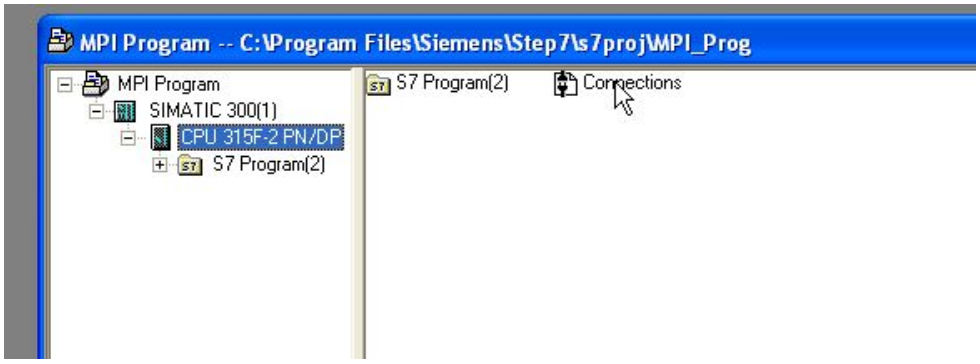




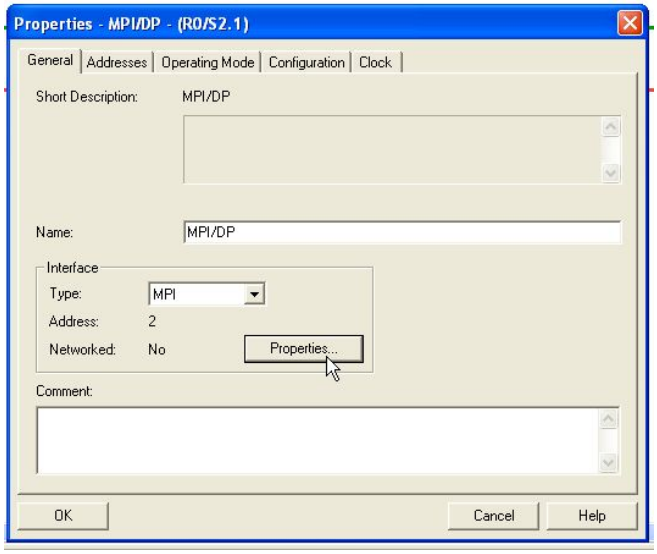
8. Then save and compile the hardware setup. Exit out of the HW Config.



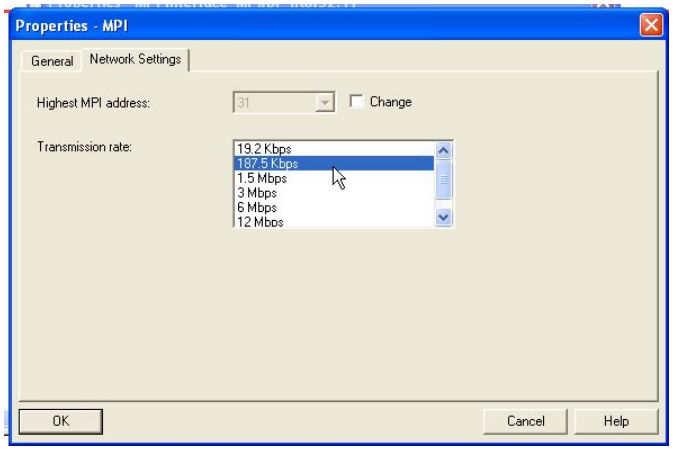
9. In the SIMATIC Manager double left click on SIMATIC 300(1). Then double left click on CPU. Then double left click on Connections.

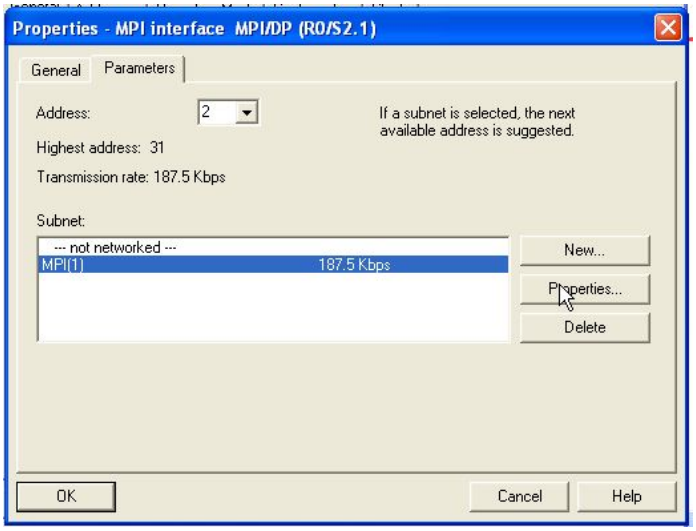


10. Here you can configure the MPI and Ethernet setup. Double clicking MPI/DP then you can configure the MPI adapter. Click on Properties, then select the MPI network (if not created then select New).

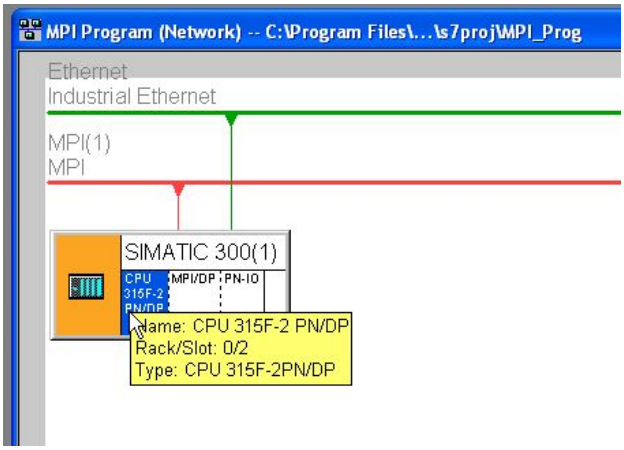


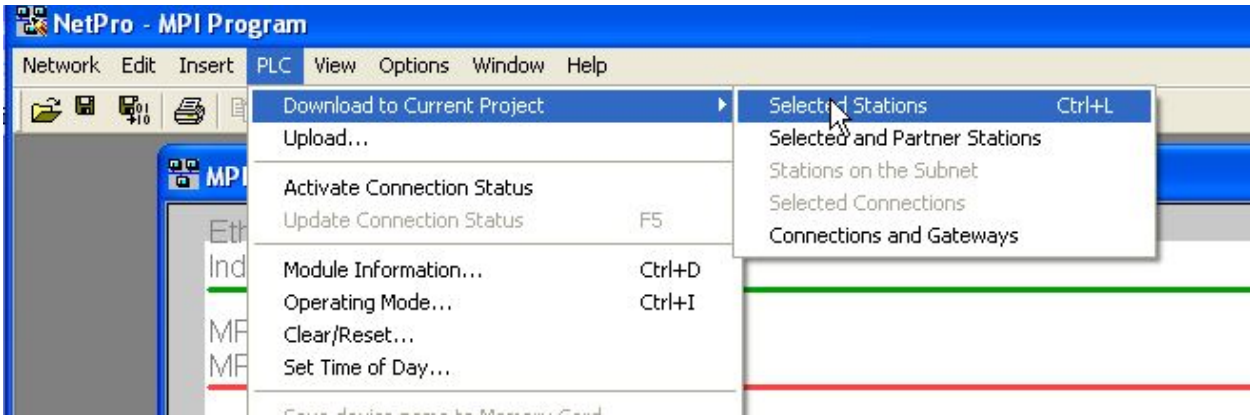
11. To configure the MPI then you click on Properties again. There go to the Network Settings tab. Here you select the options which will need to be the same as on the Uticor HMI. For now select 187.5 Kbps and the Highest MPI address should be 31. Click OK three times.



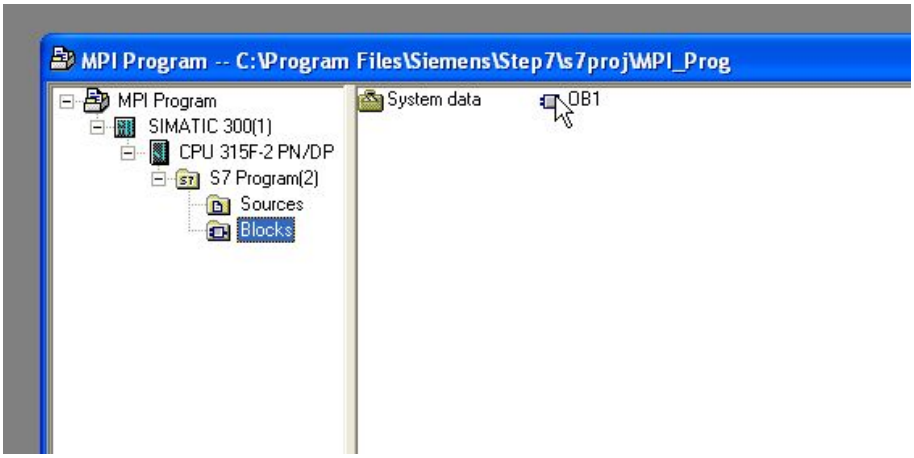


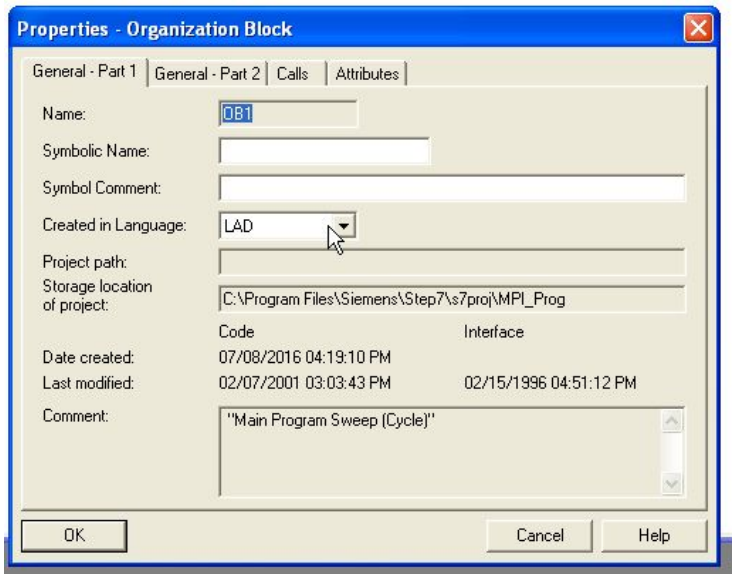
12. Currently everything should be setup and you should download these settings to the PLC. Select the CPU and then go to **Download to Current Project > Selected Stations**. Select Yes for overwrite configuration data. Click OK and the project should download to the PLC. (If anything else pops op select OK to download the project). Then restart the CPU.



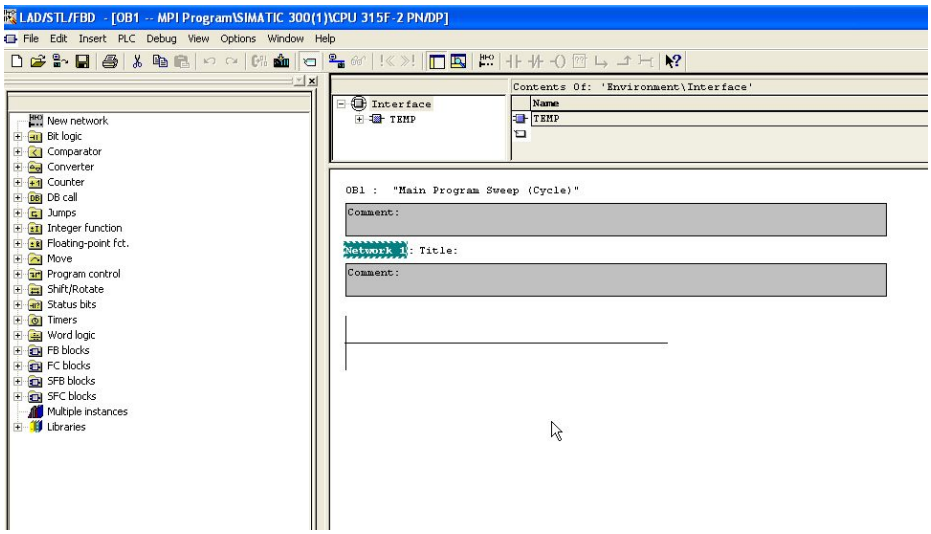


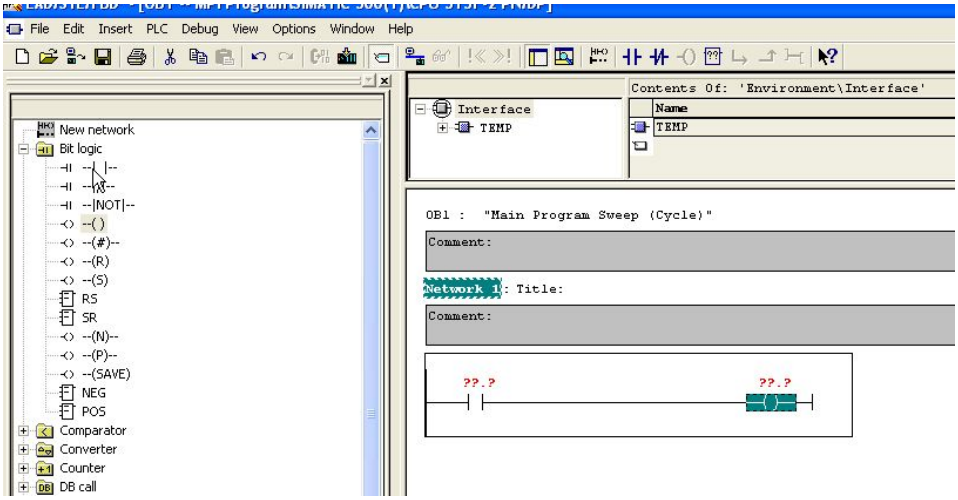
13. Exit the NetPro pogram after saving. Then double left click on S7 Program. Then left click on Blocks. Then left double click on OB1. In the dialog change nothing except the Created in Language should be LAD. Click Ok afterwards. A new program should open which has an empty ladder logic network.

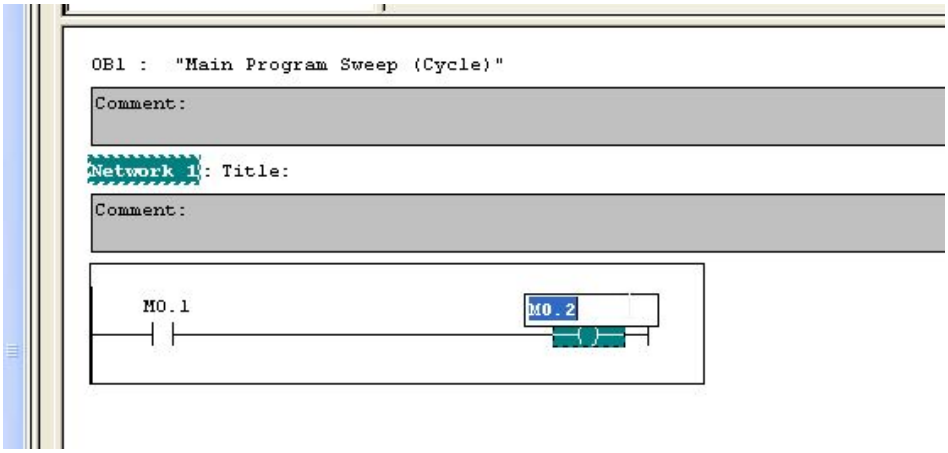


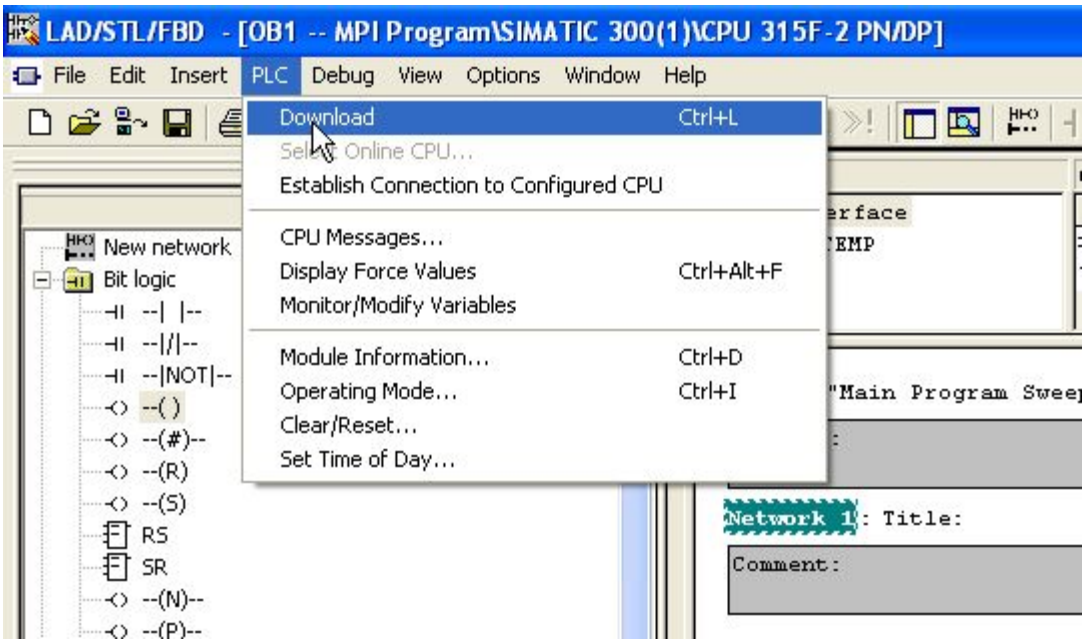


14. On the left side select Bit logic and put a normally open contact and a normally open coil on the network. Drag and drop. Input address location for these as M0.1 and M0.2 by clicking on ??? and typing in the address. Then go to **PLC > Download.** Click Yes or OK to download to PLC. Then save and exit the LAD/STL/FBD.





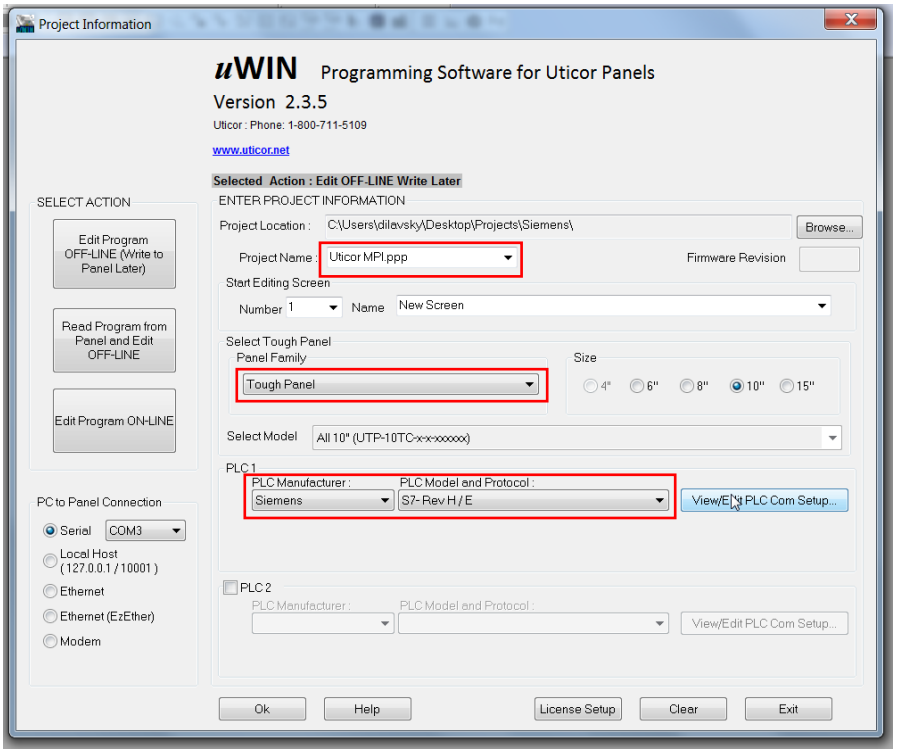




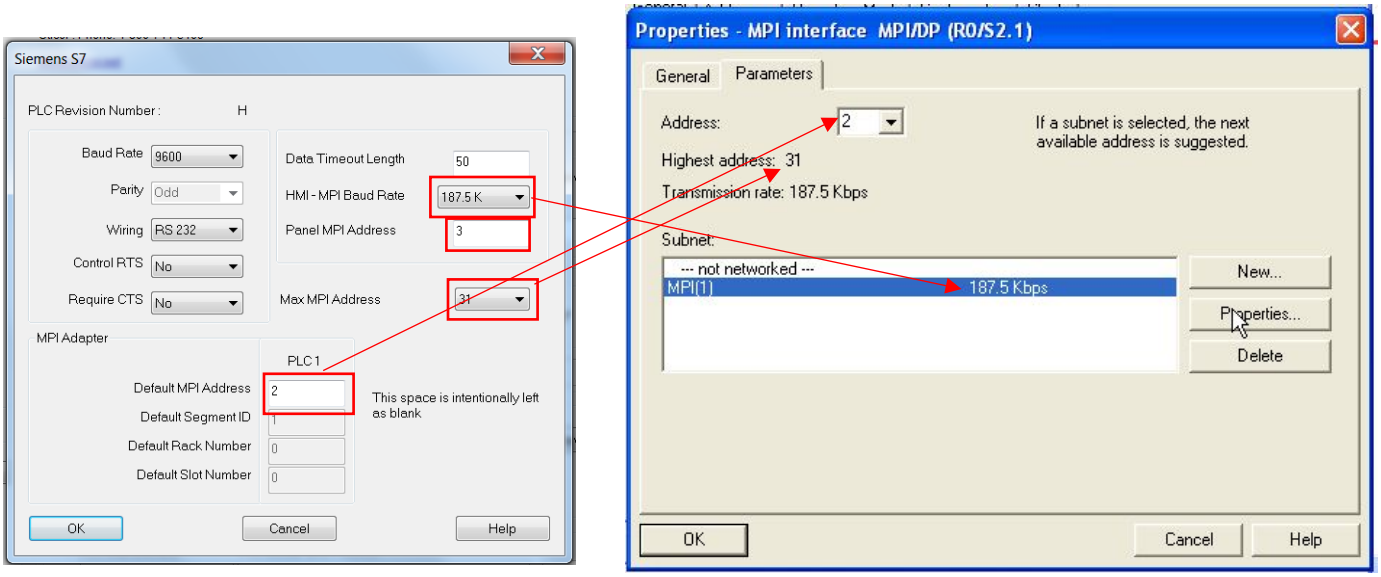
15. The PLC should now be setup.

Uticor HMI Setup:

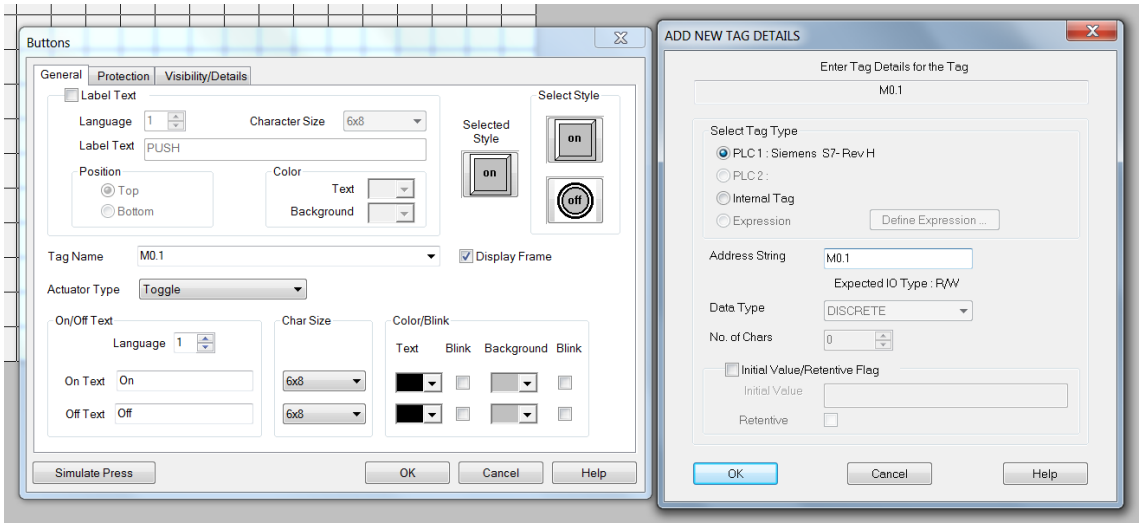
1. Open uWin ToughPanel. Select Edit Program Off-Line.
2. Browse to location that you want to save file. Enter file name and then select Panel Family of HMI.
3. For PLC select Siemens and S7-Rev H/E.



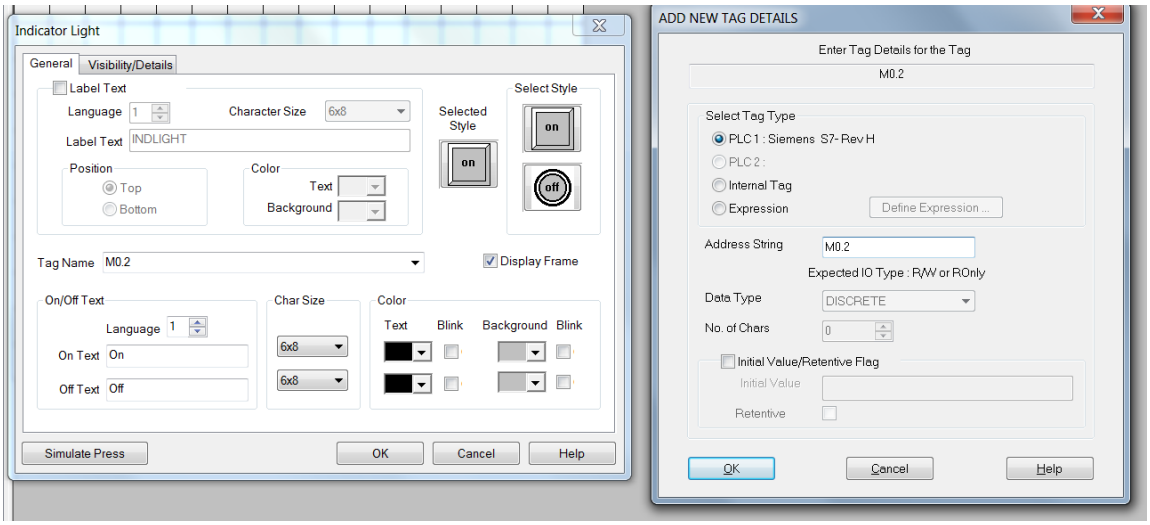
4. Then select View PLC Com Setup. Here you need to match the settings of the Simens PLC setup of the MPI adapter for the shown settings. Also please enter unused address for Panel MPI address (#3 for example)



5. Press Ok and again Ok to enter panel screen editor.
6. Select button and enter tag address and name of M0.1 for button. Place on screen with your choice of settings.



7. Select indicator light and enter tag address and name of M0.2. Place on screen with your choice of settings.



8. Download program to HMI. Connect HMI and PLC using Uticor CBL-UTICW-012 and a HMI MPI Adapter (example: 6ES7 972-0CA11-0XA0).

To troubleshoot PLC:

- Make sure HMI and PLC are connected using Uticor CBL-UTICW-012 and a HMI MPI Adapter (example: 6ES7 972-0CA11-0XA0).
- Go to online mode. Select the CPU and right click and select **PLC > Module Information**. Go to the communication tab and make sure that the Transmission Rate on Interface X1 is the same as setup on the Uticor HMI. If not then change Uticor HMI settings to match.