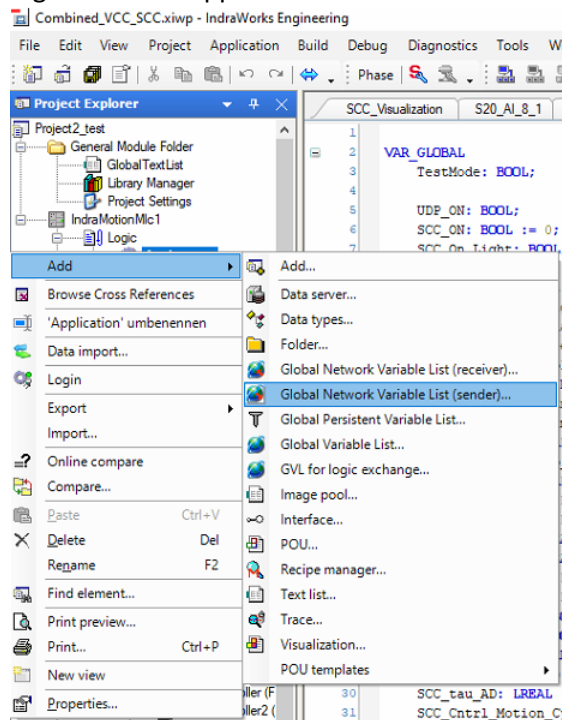


Simulink RT XM22 UDP Interface Guidance

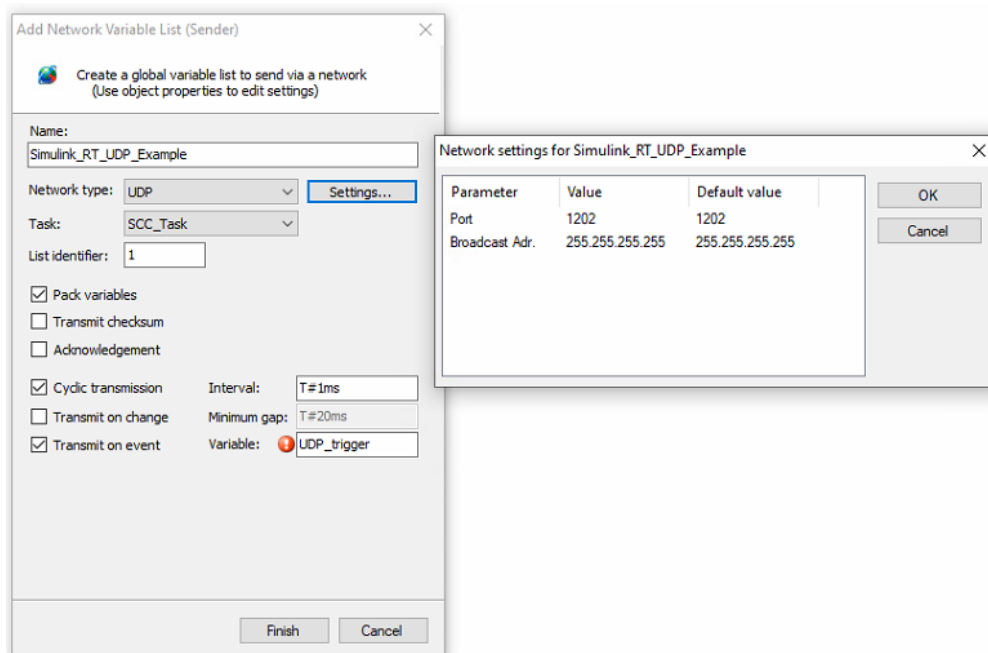
Daniel Hagen

Rexroth XM22 (PLC):

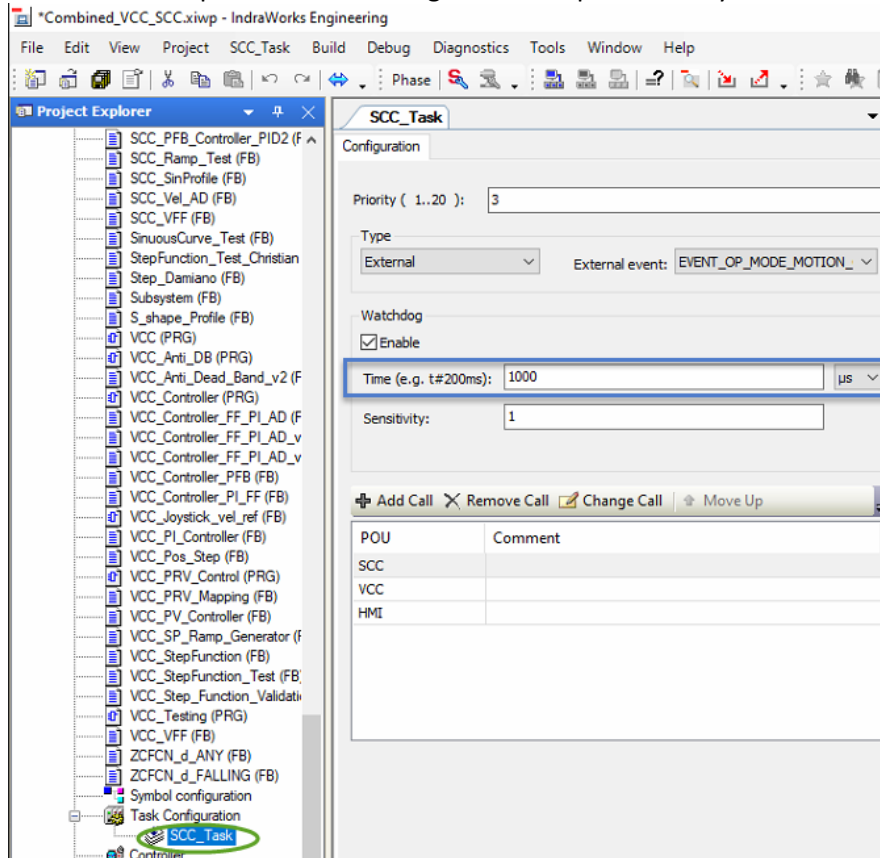
1. Right click on "Application" and add:



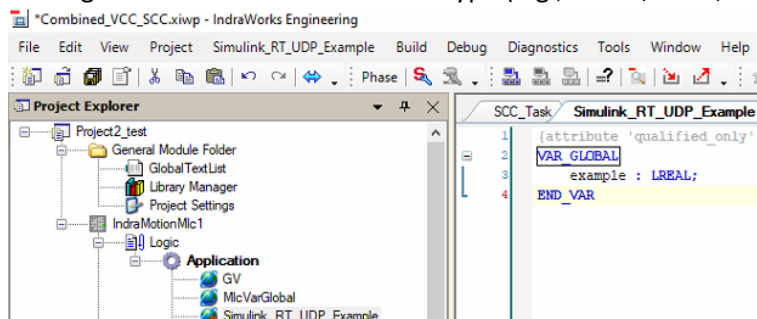
2. Select network type UDP, assign task, choose sample time (interval), optional select transmit on event, and assign a variable (I recommend to do this so the PLC is not sending data all the time, but only when needed, e.g., when generated PLC time is started → enable "UDP_trigger" signal). Check Network type settings according to:



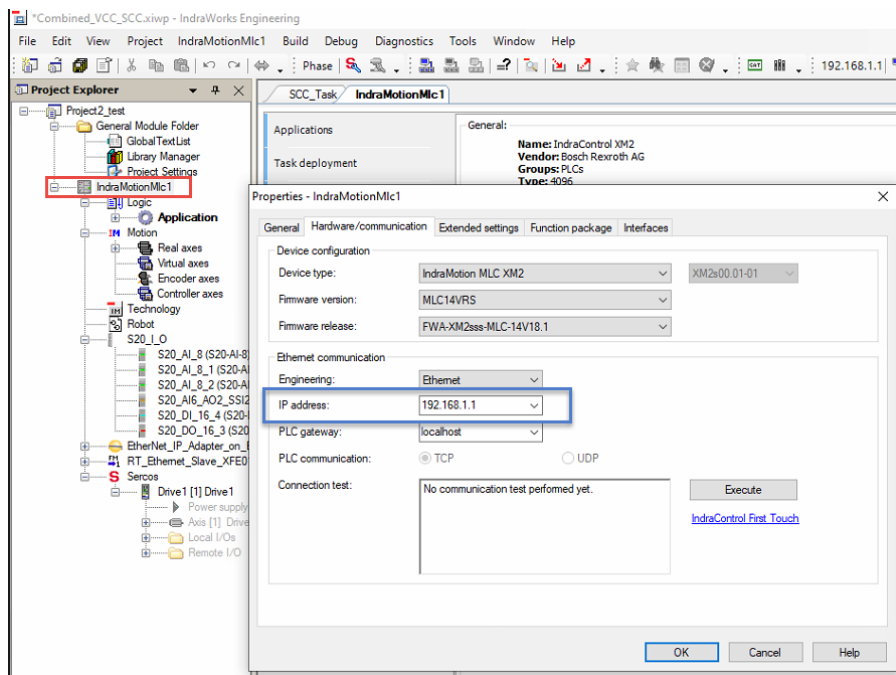
The chosen sample time should be greater or equal to the cyclic time of the task:



3. Add signal to be sent and chose datatype (e.g., LREAL, REAL, BOOL etc.).

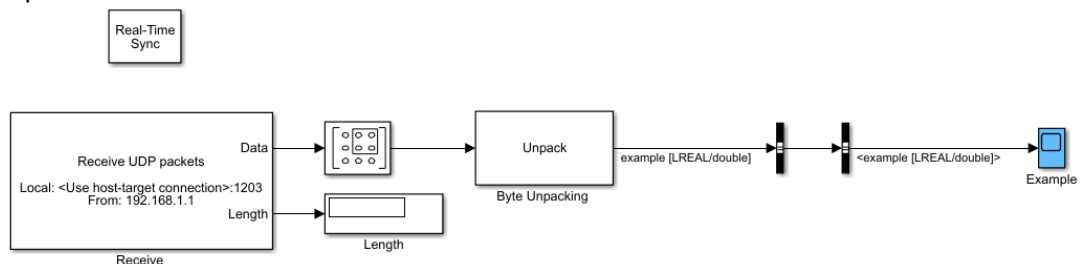


4. Identify the IP address of the PLC → right click on the “IndraMotion”:

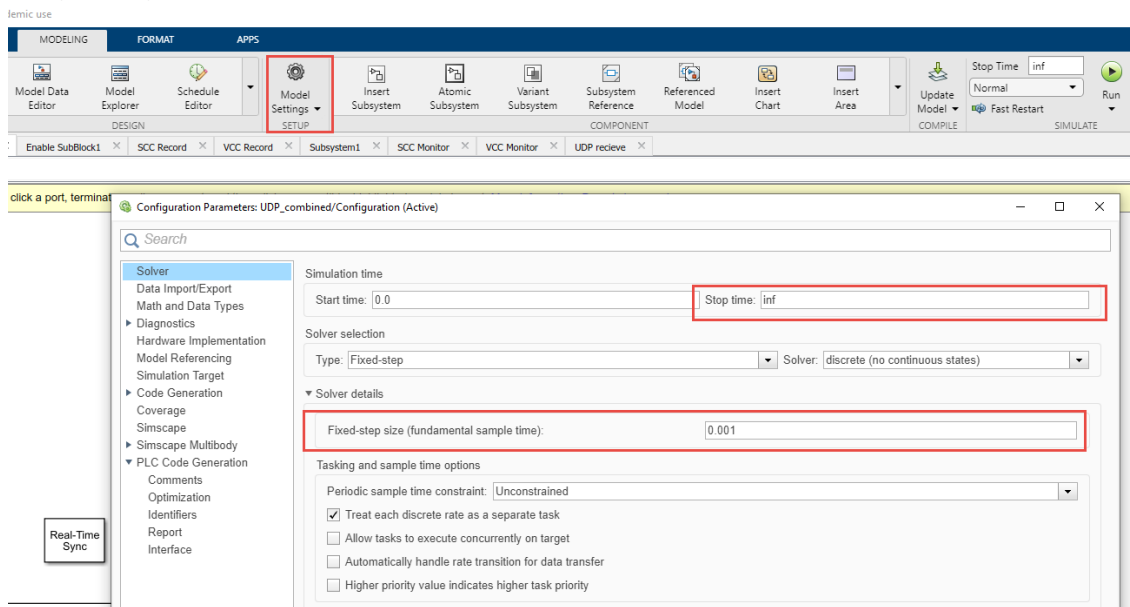


MATLAB/Simulink:

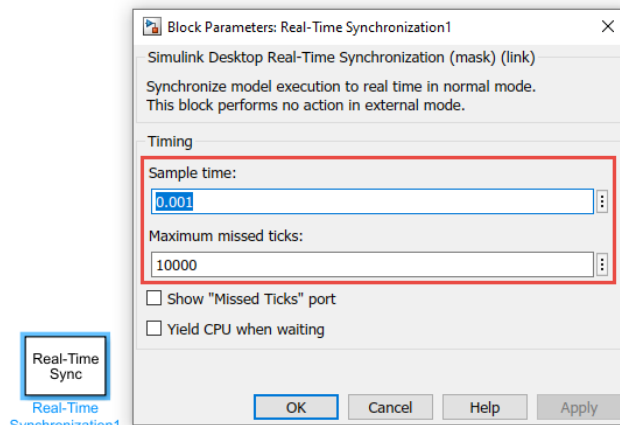
1. Install Simulink RT kernel for current Matlab version:
<https://se.mathworks.com/help/sldrt/ug/real-time-windows-target-kernel.html>
2. Open Simulink file



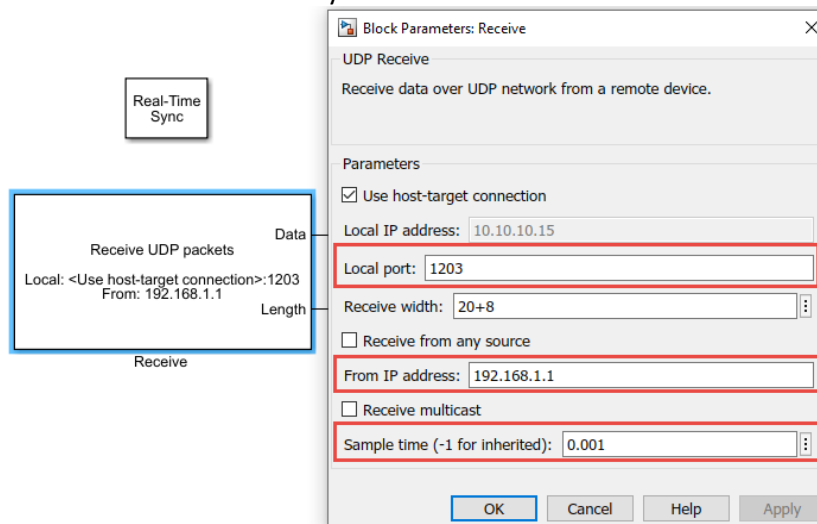
3. Model settings → select fixed step time and sample time same as for the Network Variable List (sender) chosen above:



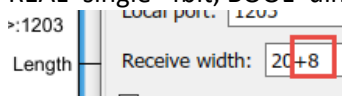
4. Select sample time chosen for the Network Variable List (sender) and increase the maximum missed ticks to avoid errors):



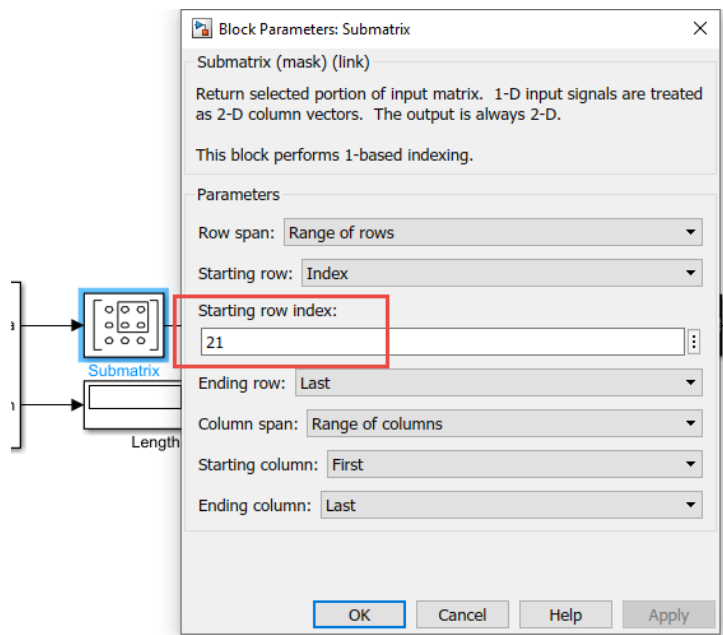
5. Add IP address from PLC (target), set local port to "1203," and add same sample time as chosen for the Real-Time Sync.



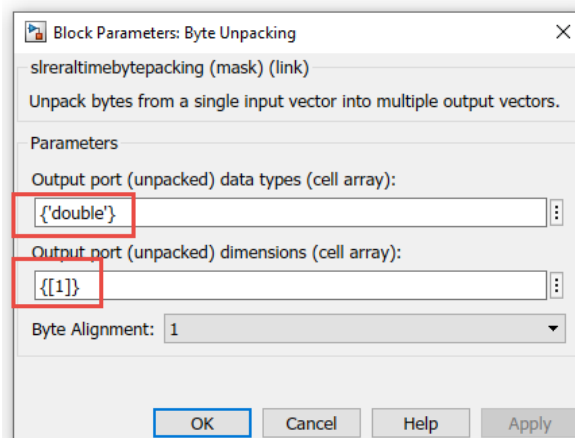
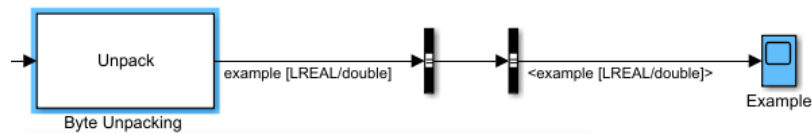
6. Add width of received signals, the first 20 is automatically occupied by the Network Variable List (sender), the +8 represent the 8bit LREAL from the example signal (LREAL=double=8bit, REAL=single=4bit, BOOL=uint8=1bit).:



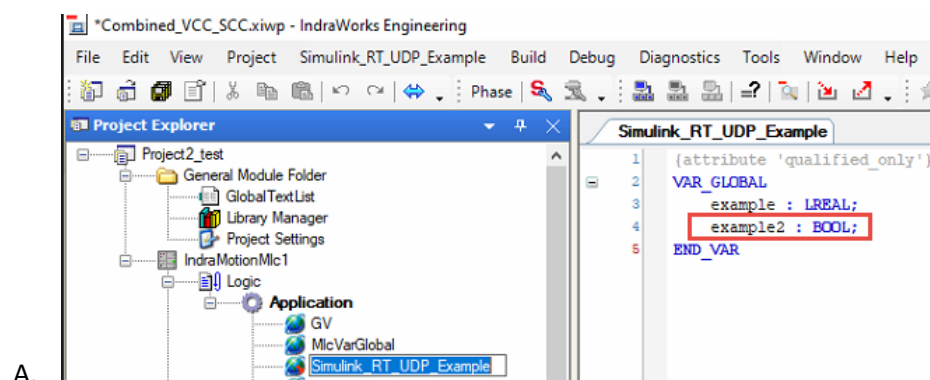
7. Select the "Starting row index":

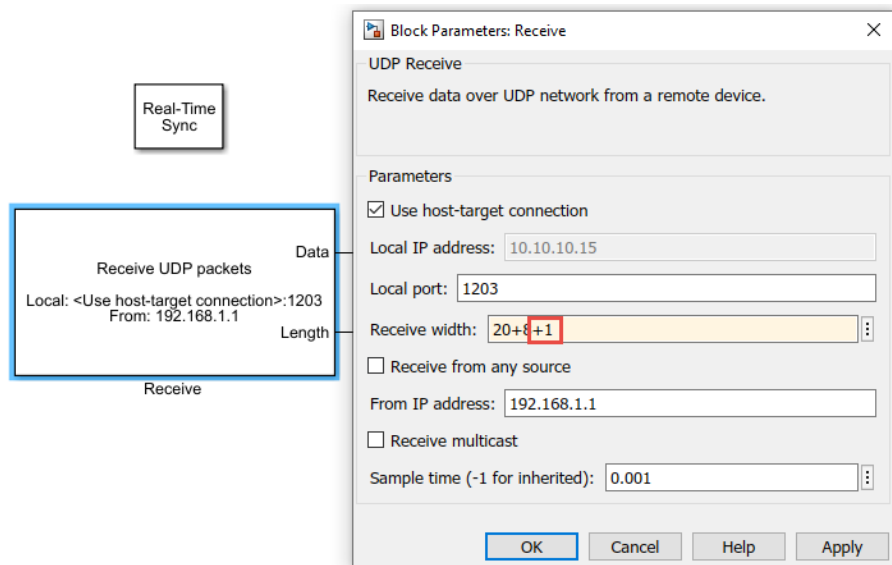


8. Unpack the signal(s):

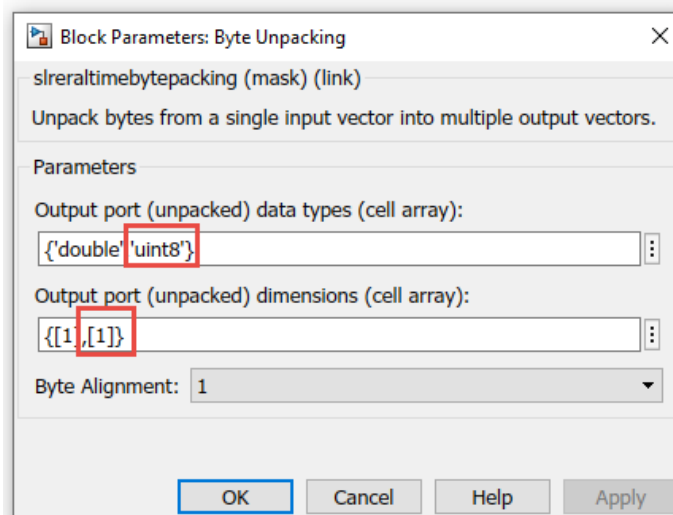
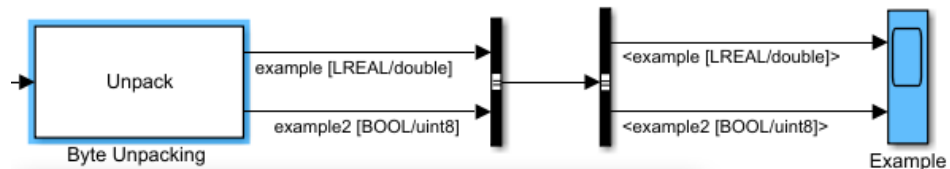


9. Example of adding more signals:





B.



C.