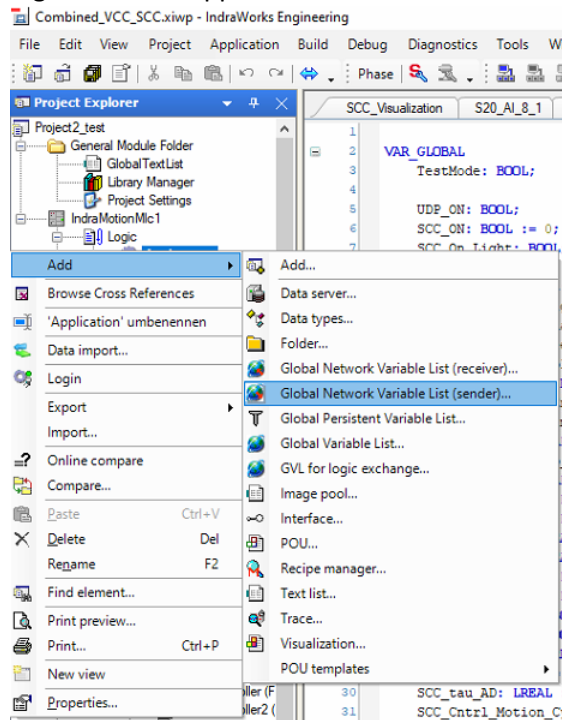# Simulink RT UDP Interface Guidance

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:
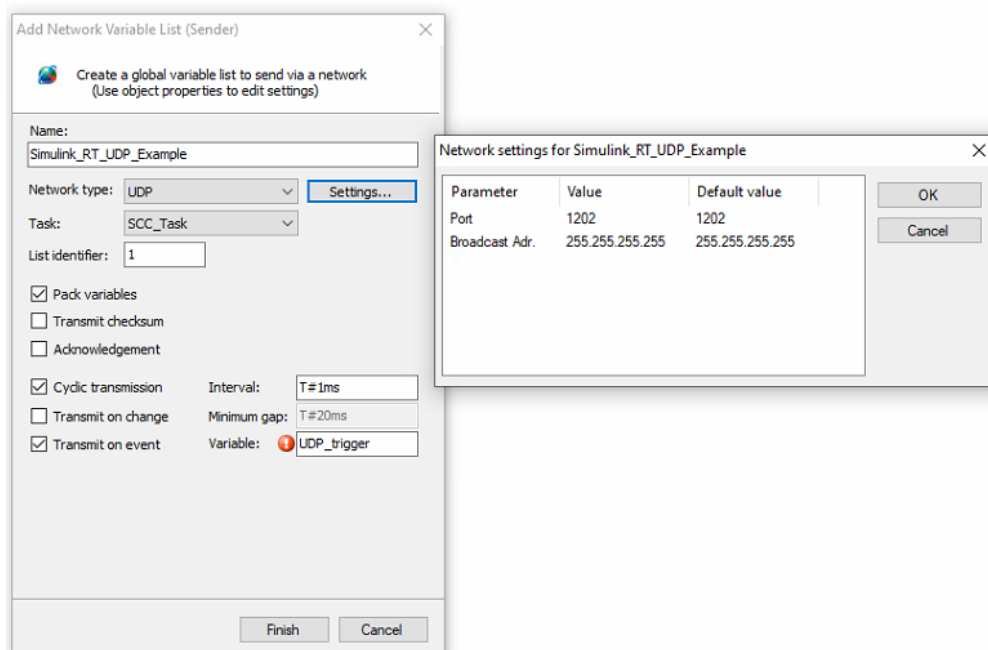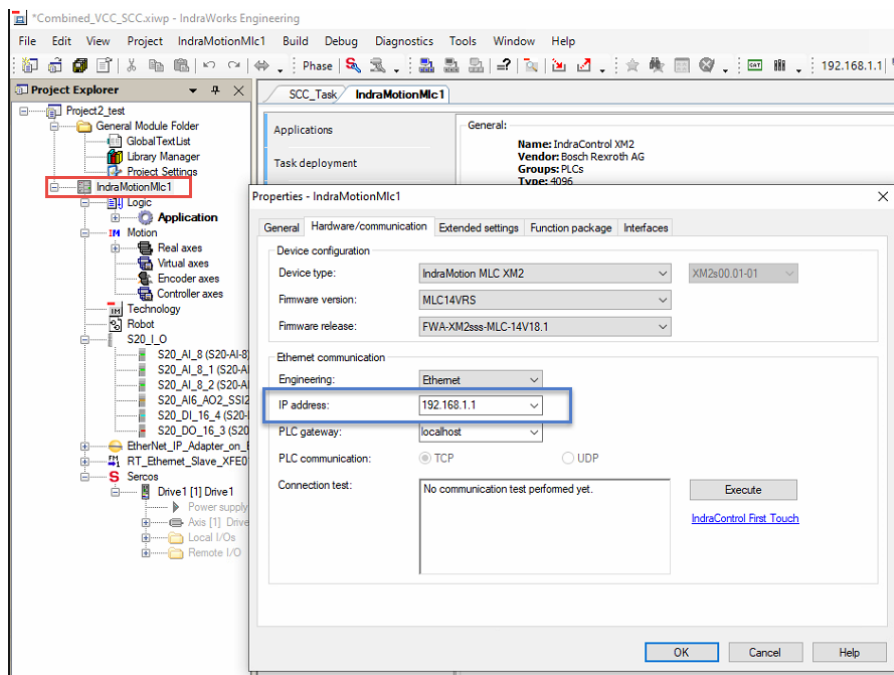
The chosen sample time should be greater or equal to the cyclic time of the task:
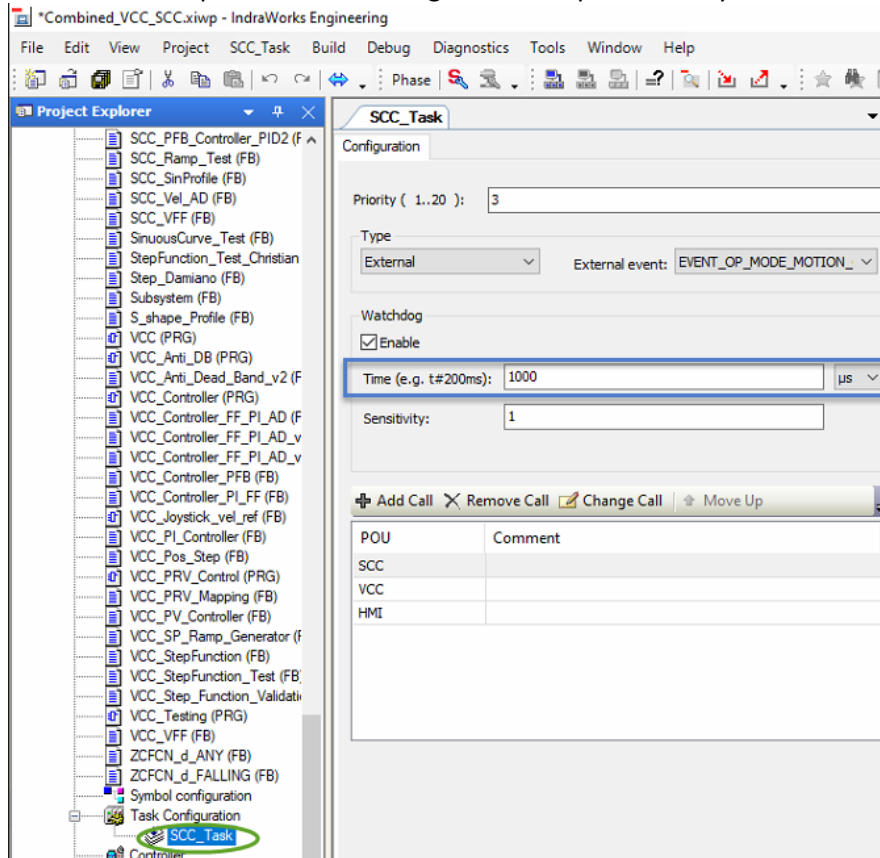
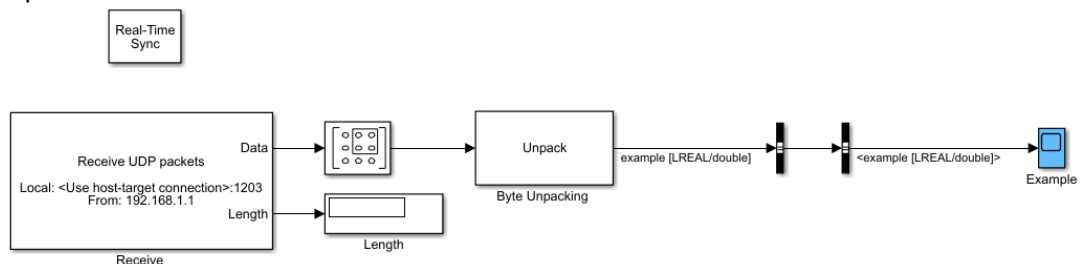3. Add signal to be sent and chose datatype (e.g., LREAL, REAL, BOOL etc.).
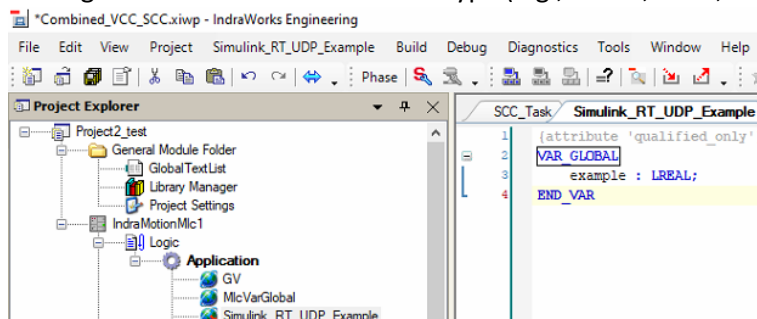
4. Identify the IP address of the PLC → right click on the "IndraMotion":
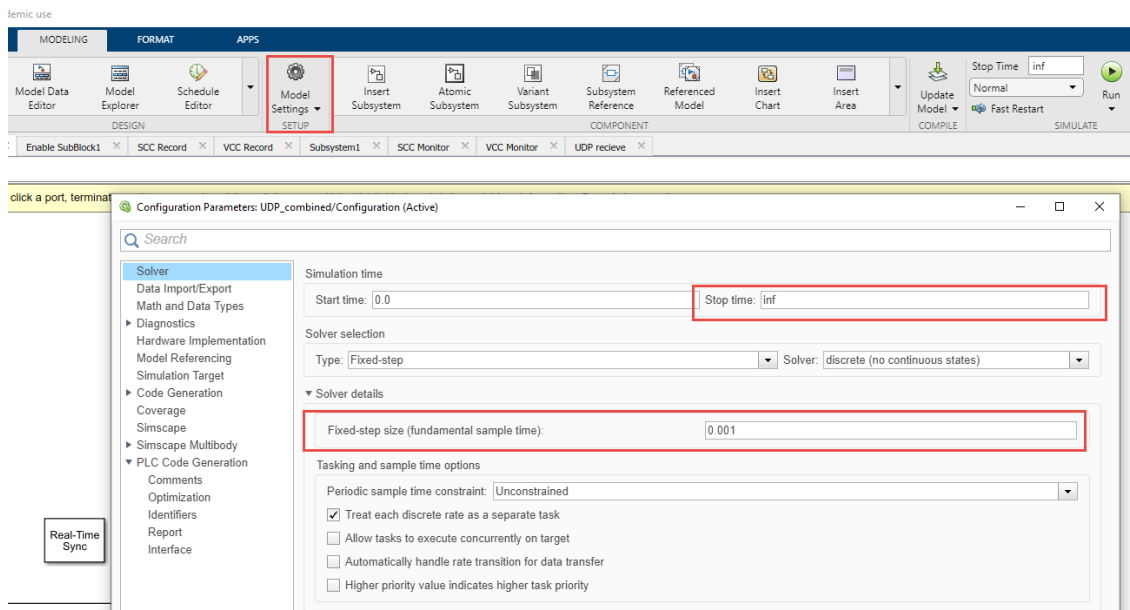
MATLAB/Simulink:

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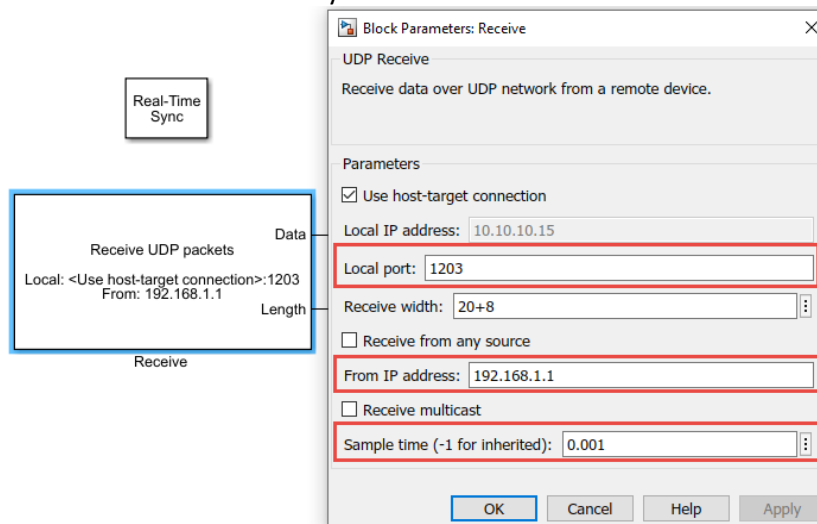2. Open Simulink file

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):
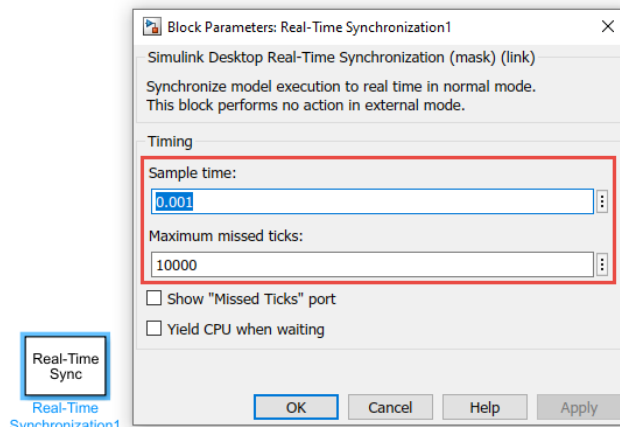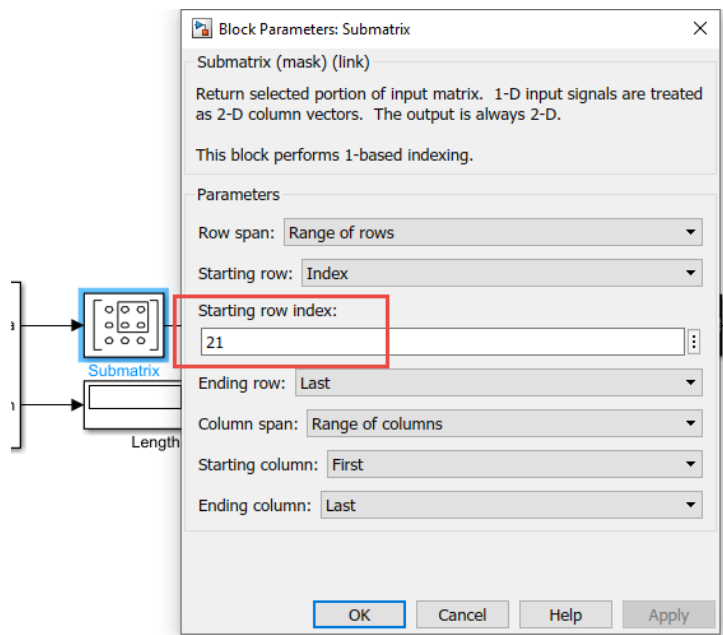

5. Add IP address from PLC (target), set local port to "1203," and add same sample time as chosen for the Real-Time Sync.
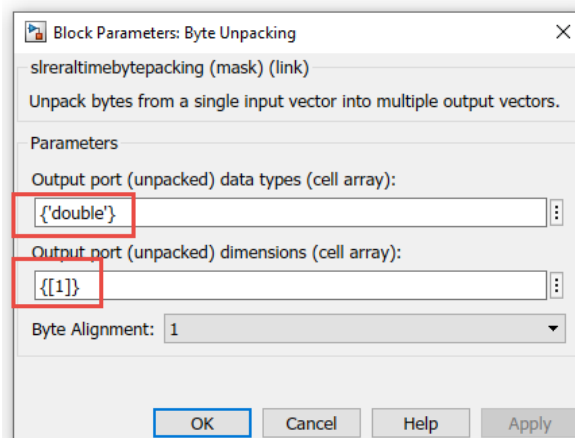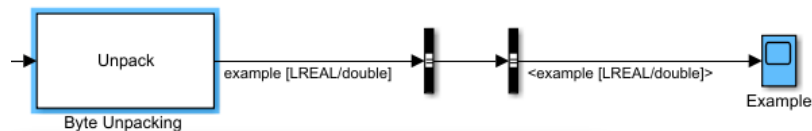

6. Add width of received signals, the first 20 is automatically occupied by the Network Variable List (sender), the +8 represent the 8byte LREAL from the example signal (LREAL=double=8byte, REAL=single=4byte, BOOL=uint8=1byte).:
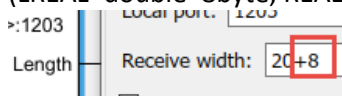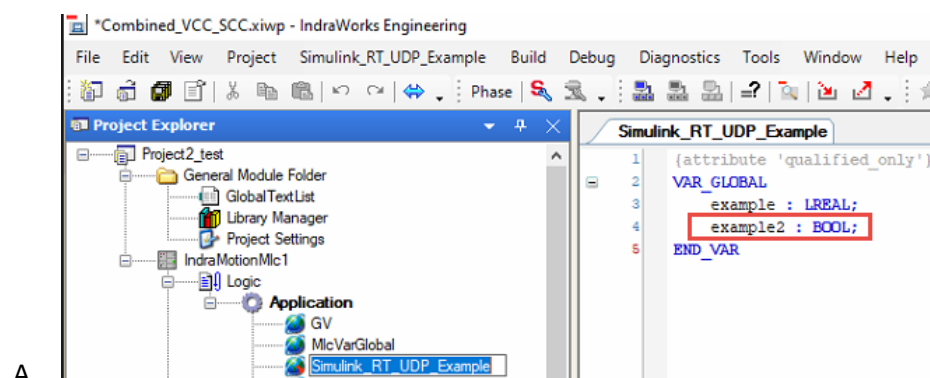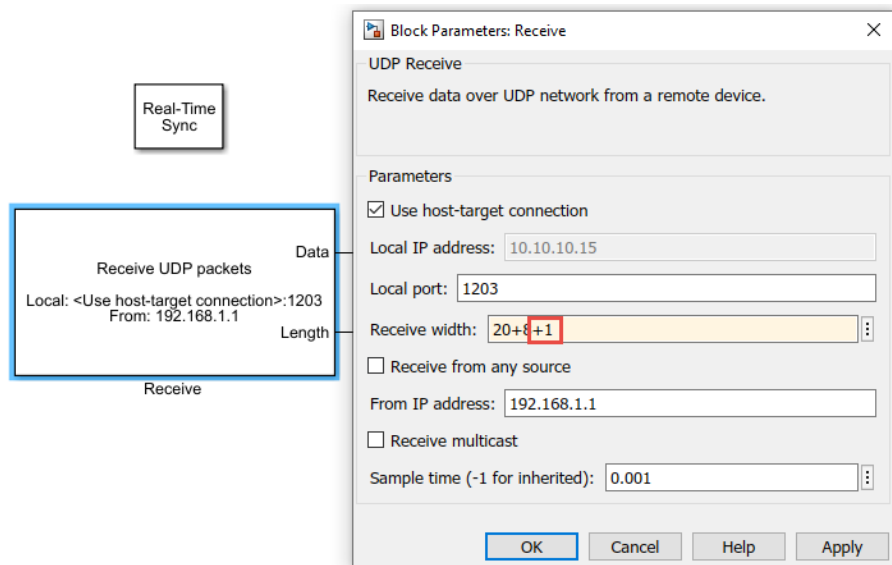

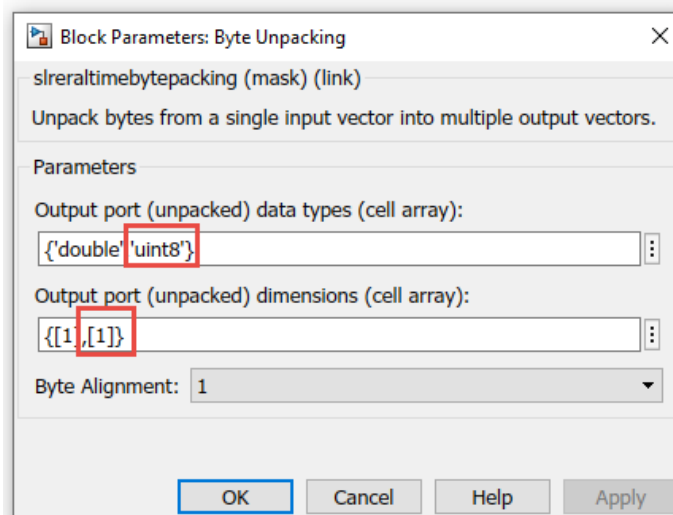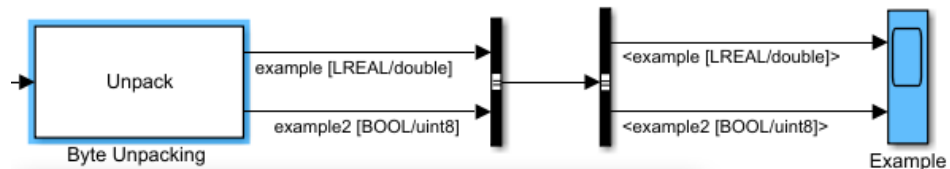7. Select the "Starting row index":

8. Unpack the signal(s):

Byte Unpacking

9. Example of adding more signals:

A.

B.

C.