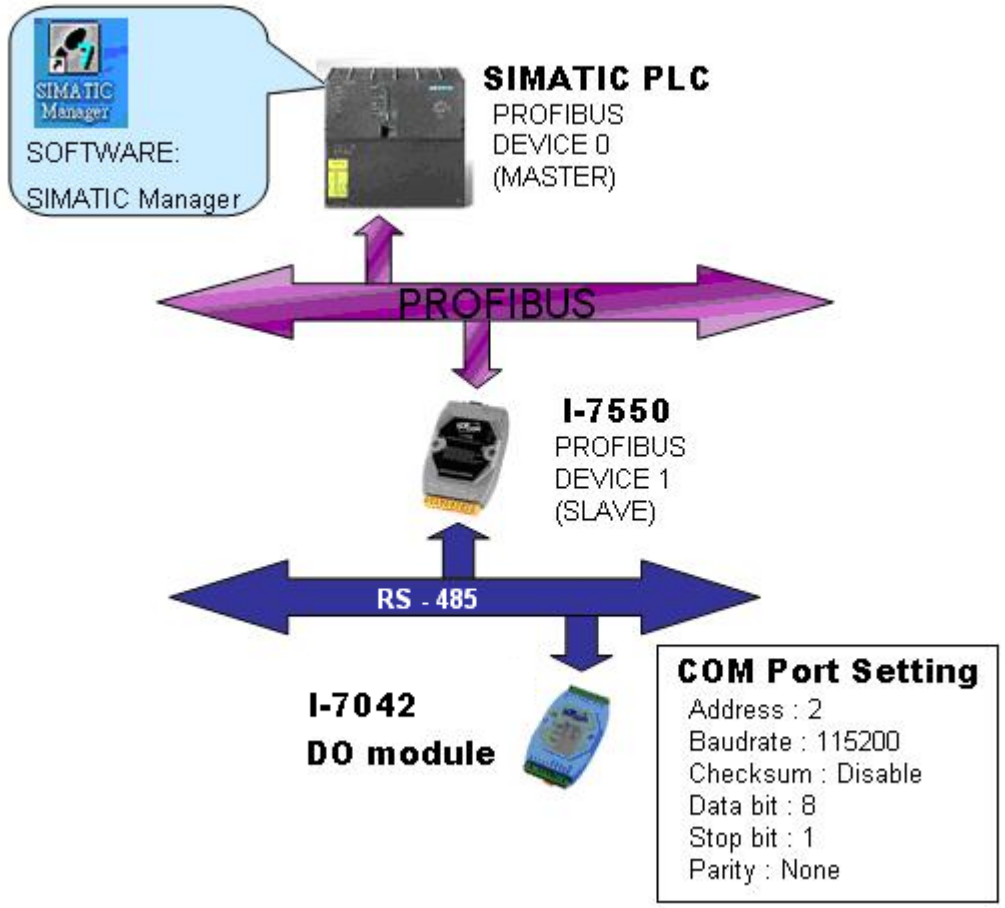
How to Read/Write I-7000 module for SIMATIC STEP 7 ?

Example : PLC writes data to DO module from I-7550.

1. Architecture



"Follow the below steps to establish the system!"

2. Module Configuration

2.1 Searching Principles:

a. Search and configure the I/O one by one.

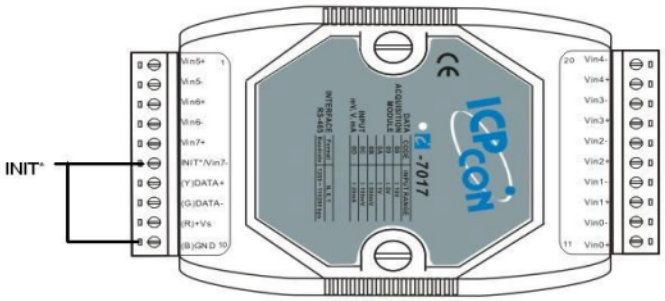
If there are several I/O modules with unknown Net Address, Baud rate, Checksum and Protocol, they have to be searched and configured one by one.

If failed to find the I/O module, it is better to Power on the I/O module with INIT* pin connects to the GND to get the I/O module's initial communication settings.

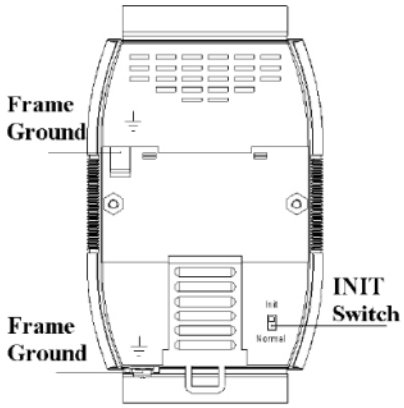
■ Initial communication settings of I-7000 are list at the table below.

	I-7000
Address	0
Baudrate	9600
Checksum	Disable
Protocol	DCON protocol

■The old style of INIT* needs to use a wire to connect to the GND

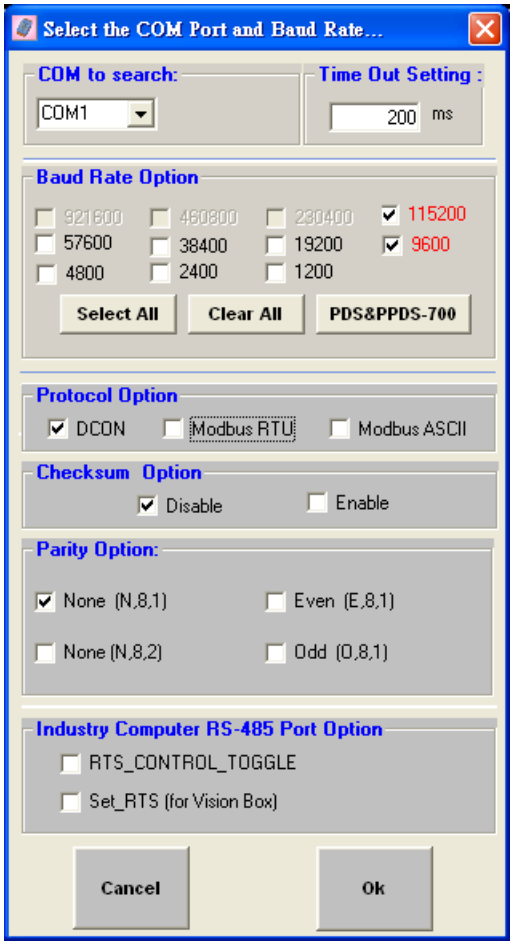


■The new style of INIT* pin is a dip switch and located at back side



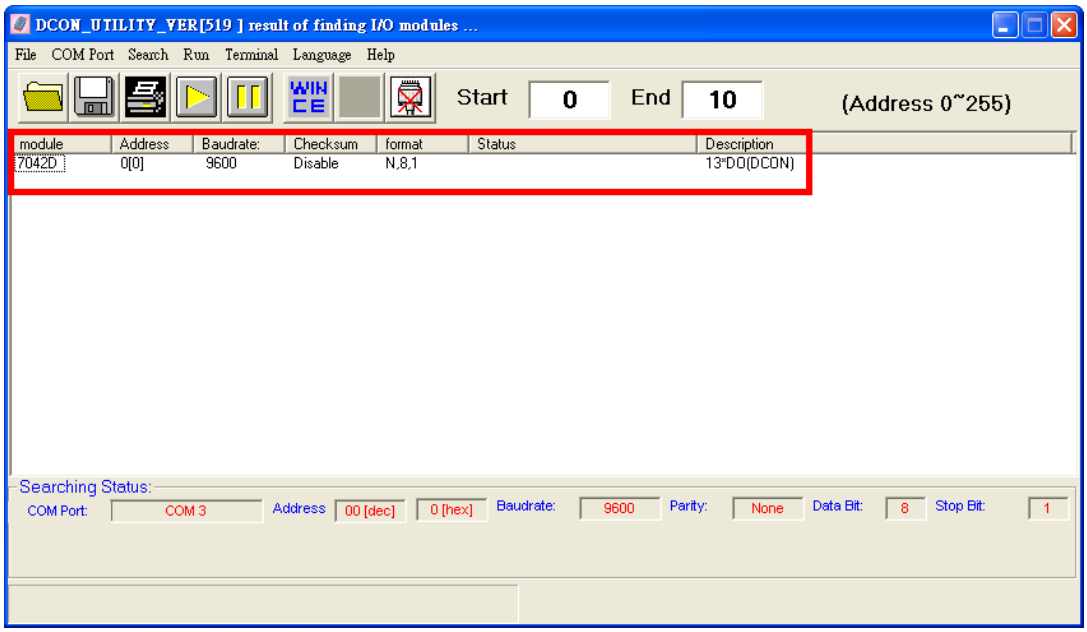
2.2 Search I/O with DCON Utility:

a. Choose the COM port and select the searching parameters.

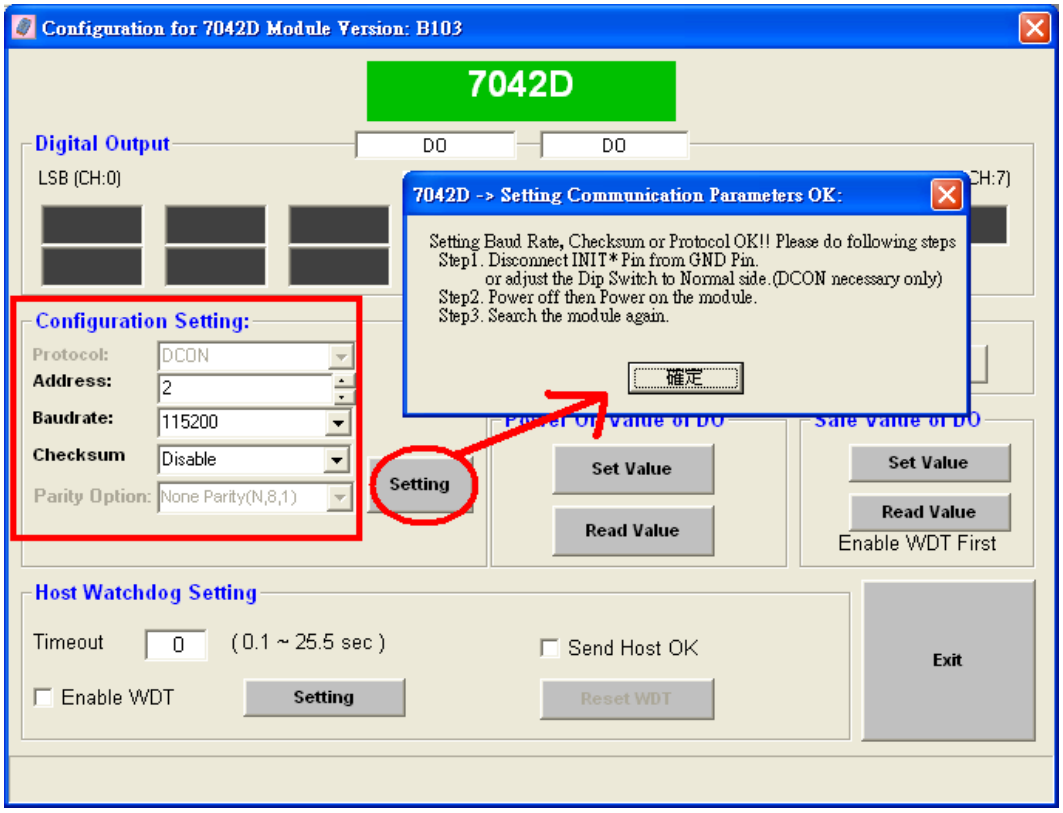


2.3 Configure the I/O modules with DCON Utility:

a. Press  button to start search.



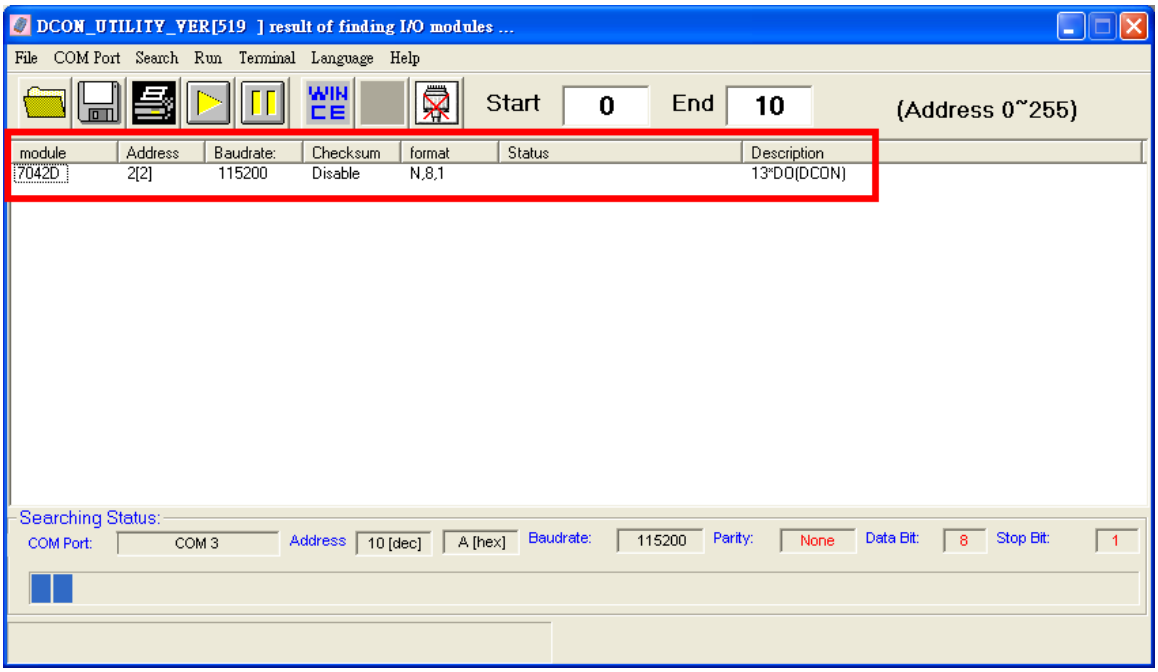
b. “Double click” module to configure com port parameter and press setting button 



c. Disconnect INIT* Pin from GND Pin or adjust the Dip switch to Normal side.

d. Power off then power on the module.

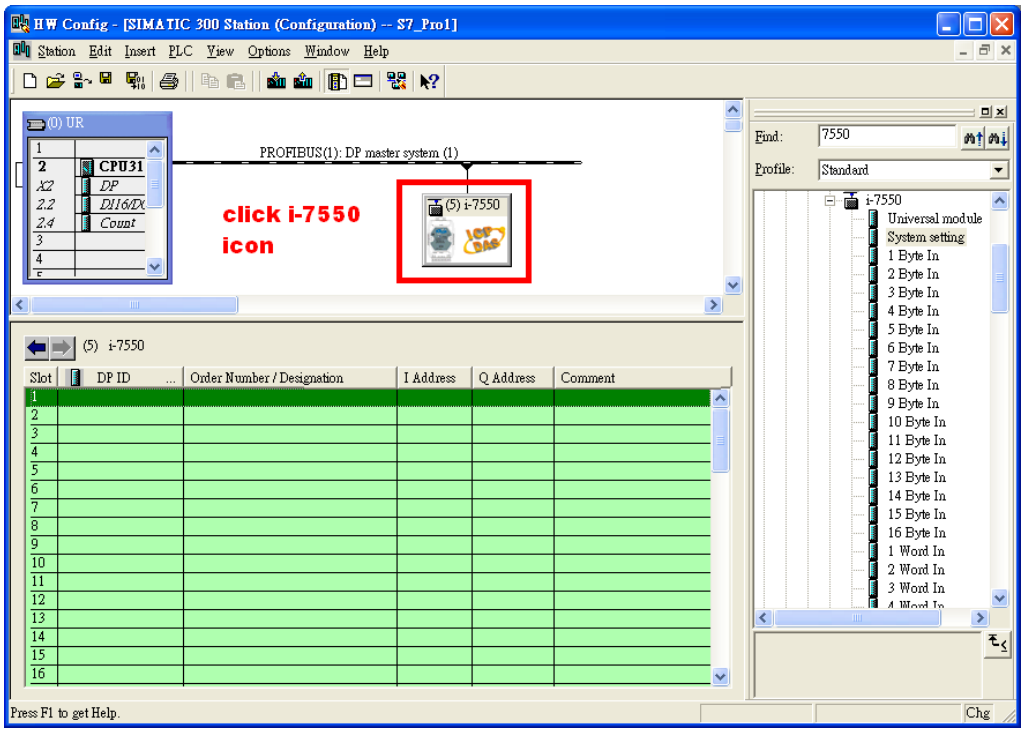
e. Search the module again.



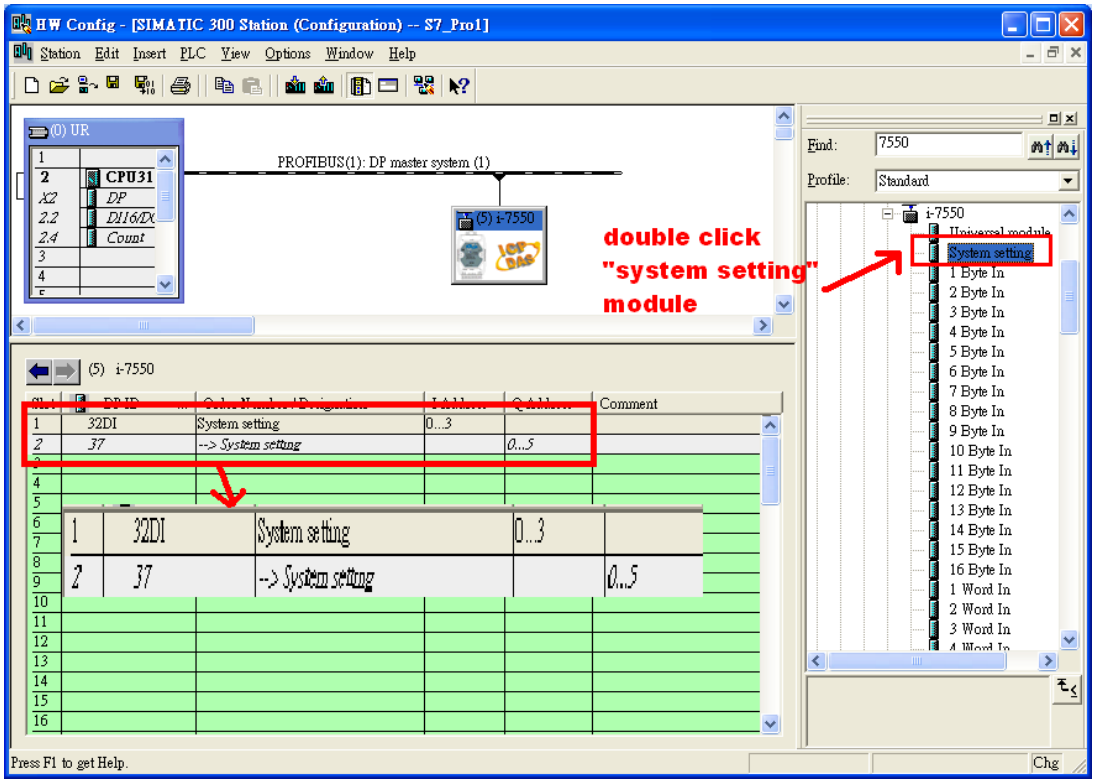
3.SIMATIC STEP7 Configuration:

Step 1: Setup the I-7550 module

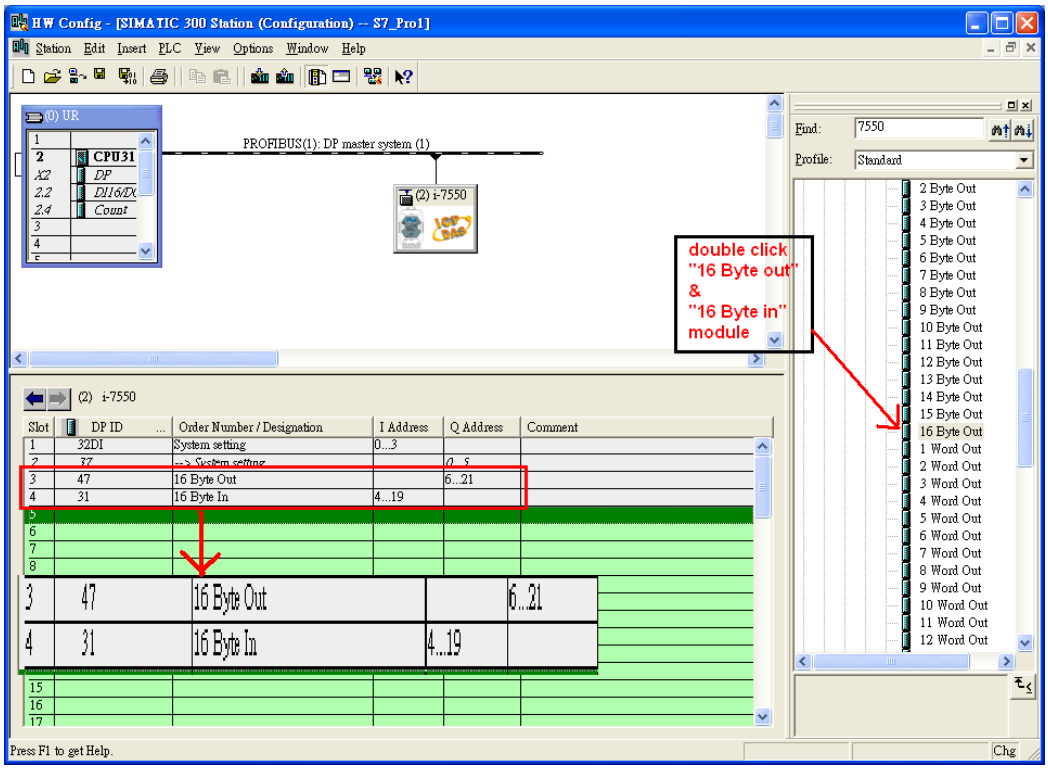
a. Select I-7550 module



b. Add a “System module”



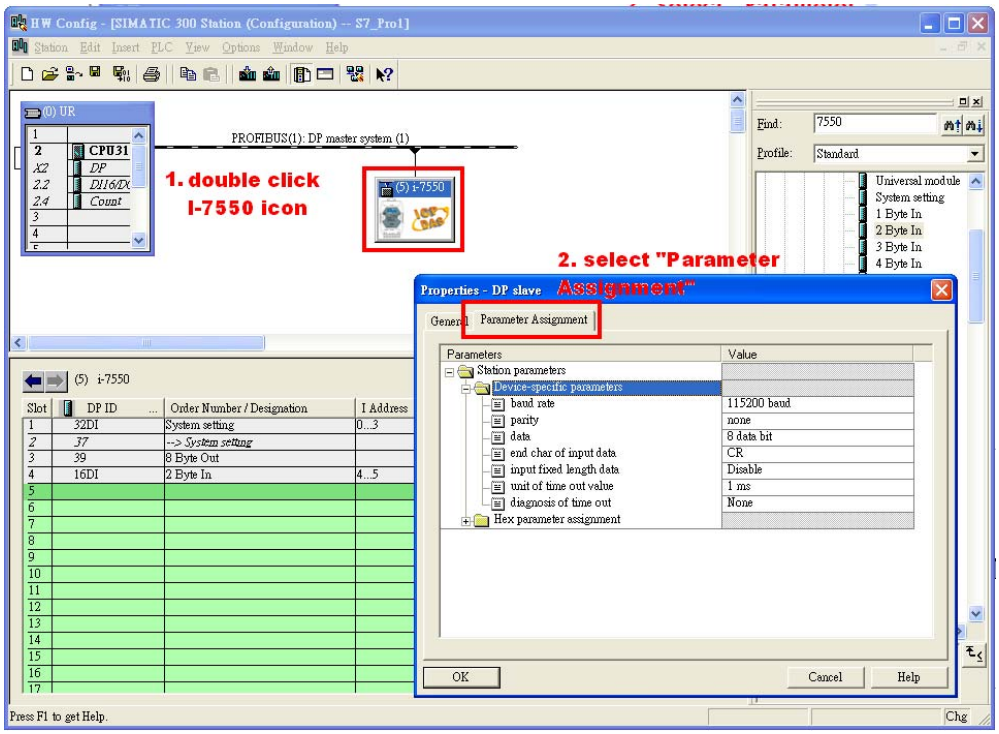
c. Add “16 Byte out” module and “16 Byte In” module



Step 2: Setup the parameters of the I-7550

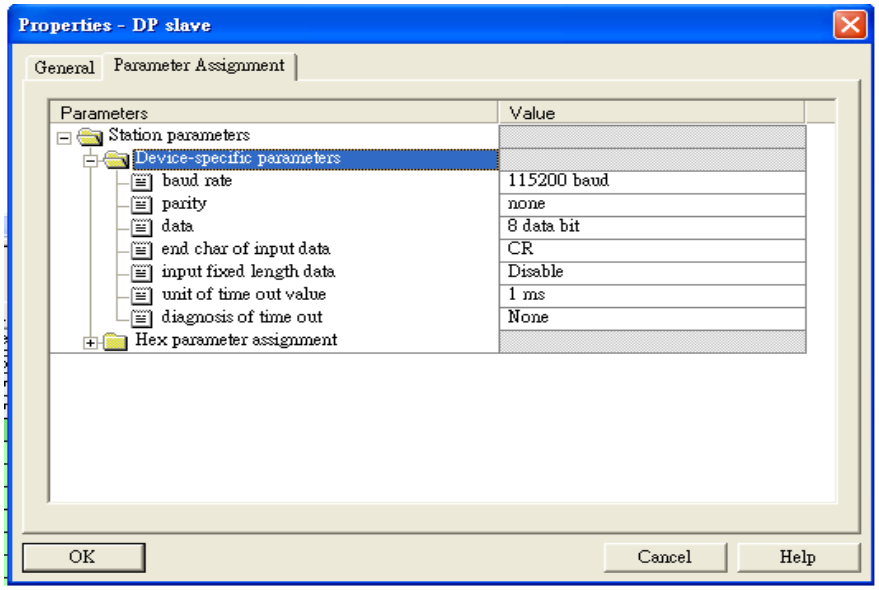
a. Double click I-7550 icon

b. Select “Parameter Assignment”



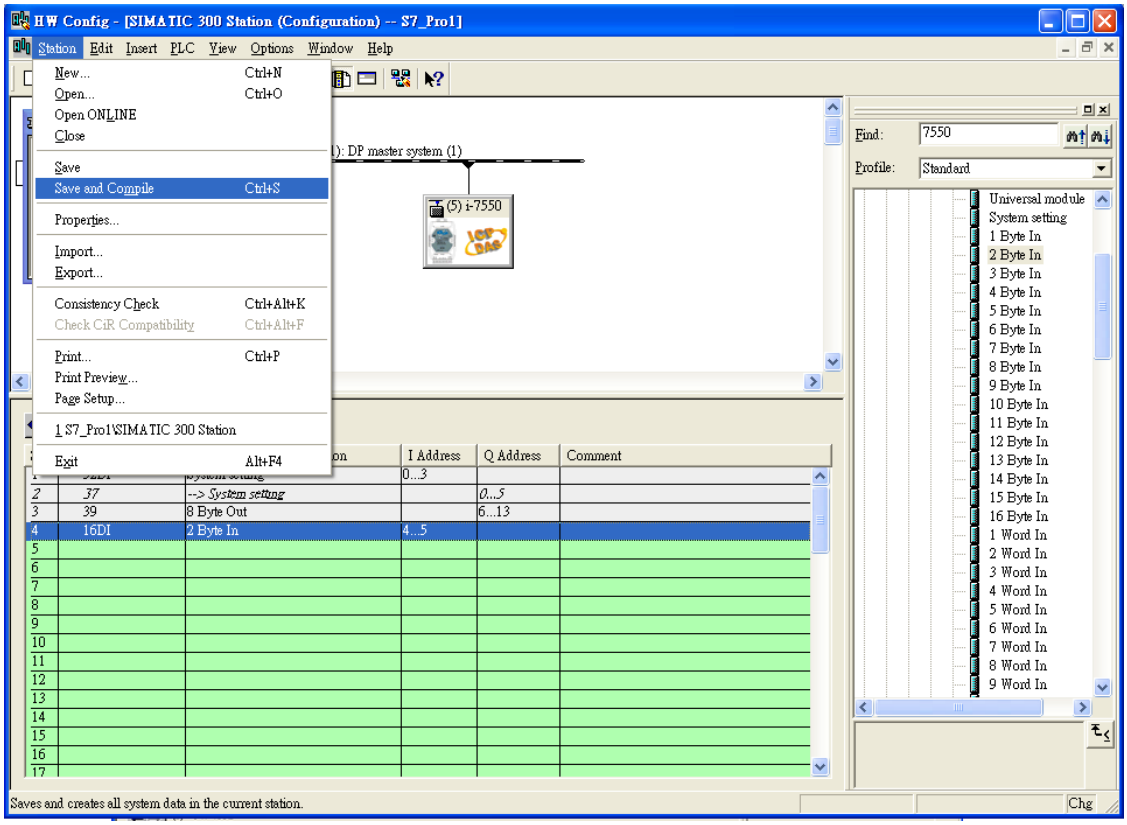
c. Set common parameters of the GW-7552

Baud rate	Parity	Data	end char of input data	Input fixed length data	unit of time out value	diagnosis of time out
115200	none	8	CR	Disable	1ms	None

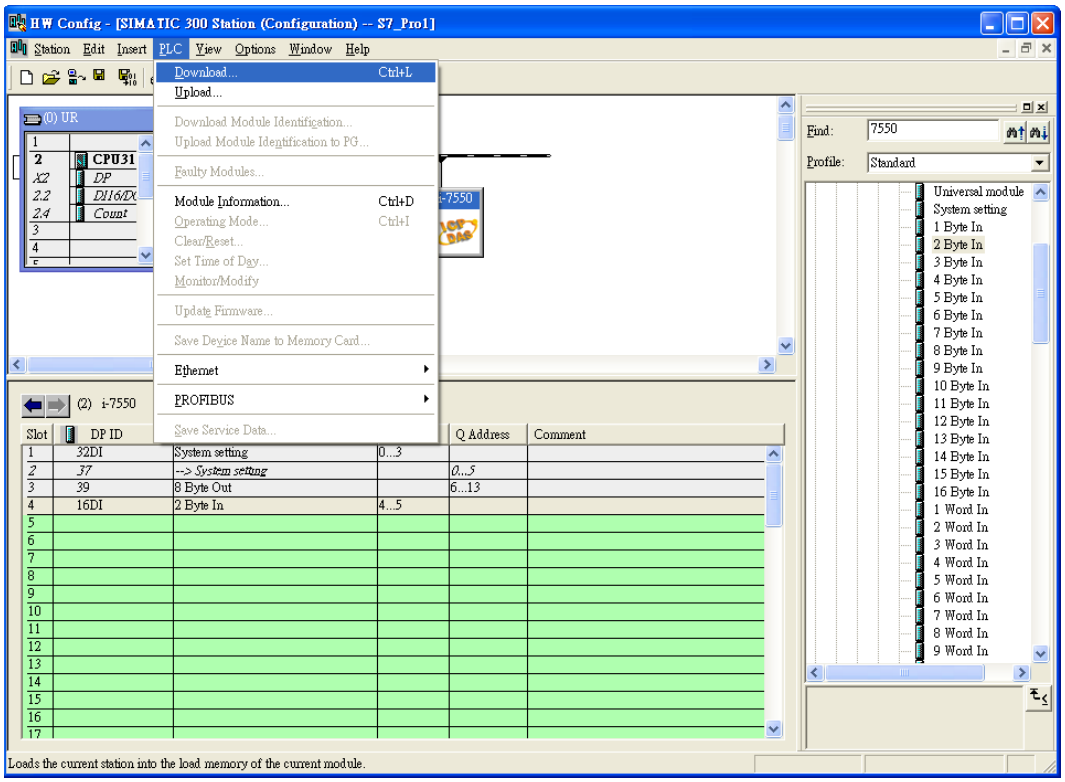


Step 3: Download the HW settings into SIMATIC PLC

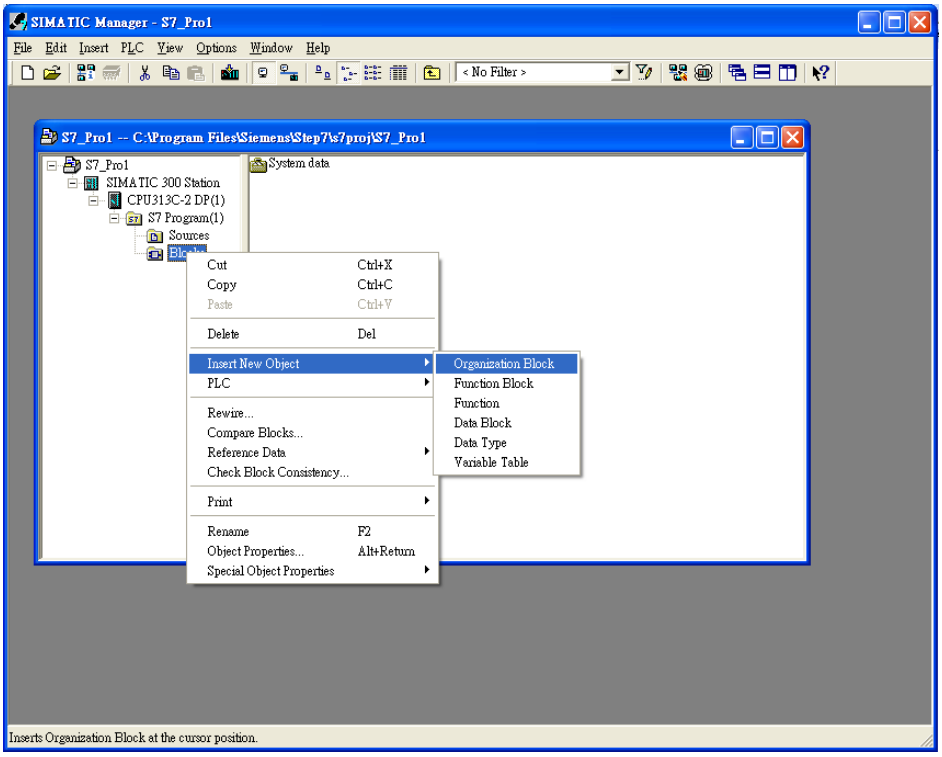
a. Save and Compile

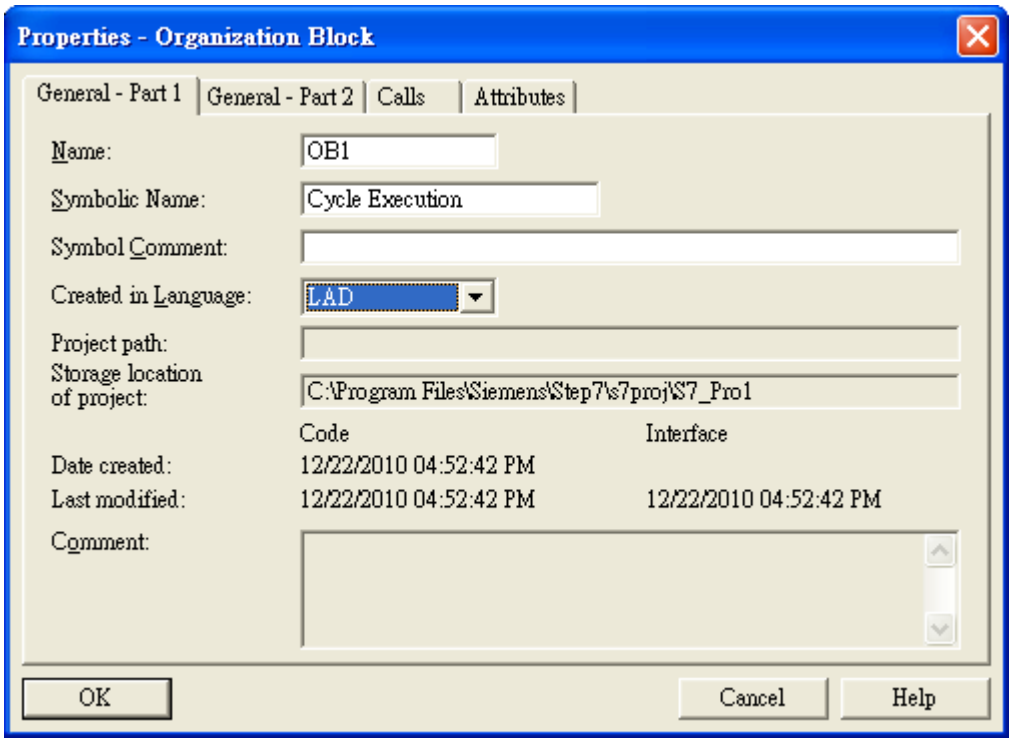


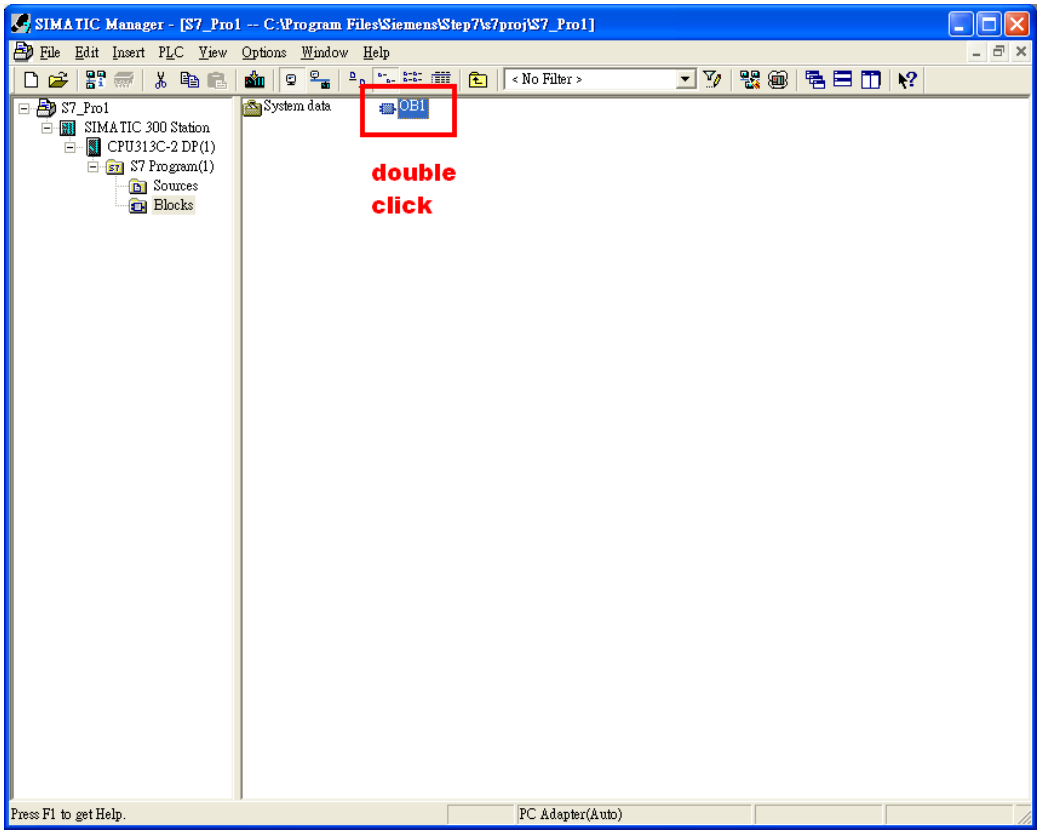
b. HW settings into SIMATIC PLC



Step 4: Insert a new Organization Block (OB1)

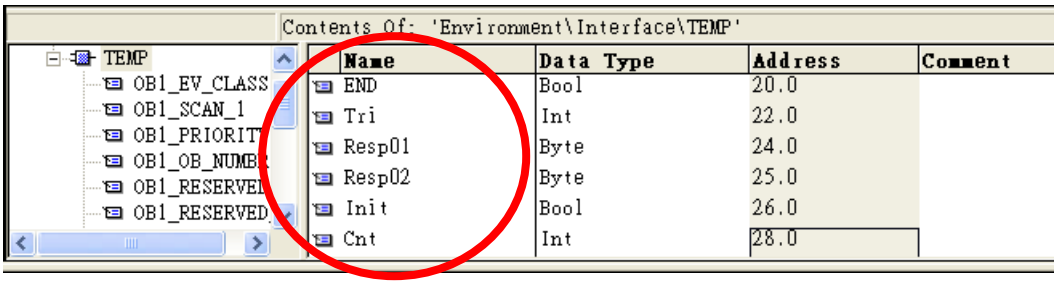




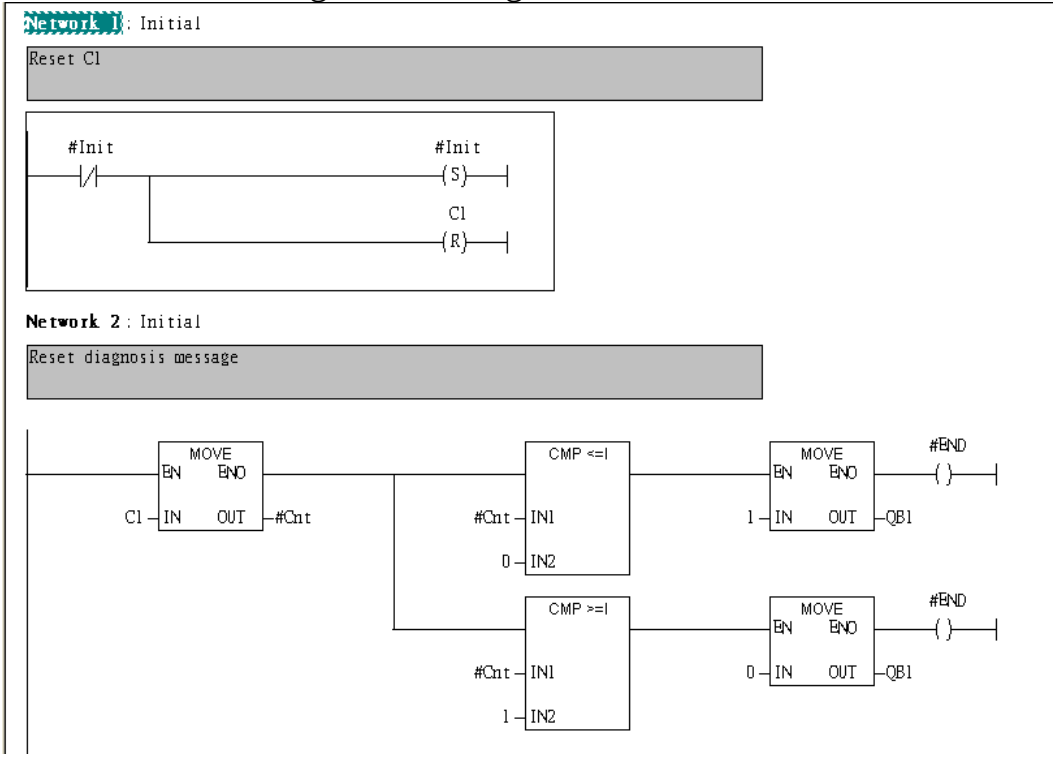


Step 5: Edit OB1

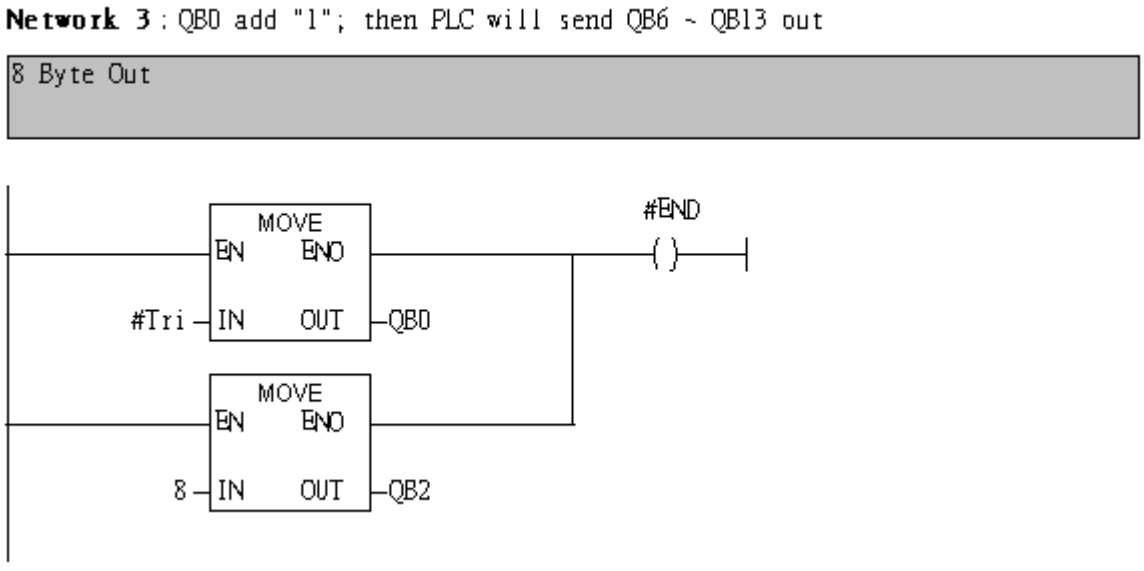
Variables used in the example LD Program:



Network1: Reset Counter(C1)
Network2: Reset diagnosis message



Network3:Using #Tri to control QB0, and QB2 is ouput data length



Network4: Write command

Network 4 : Write Command

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example: send #020033 CR
set DO0 & DO1 & DO4 & DO5 on in module 02
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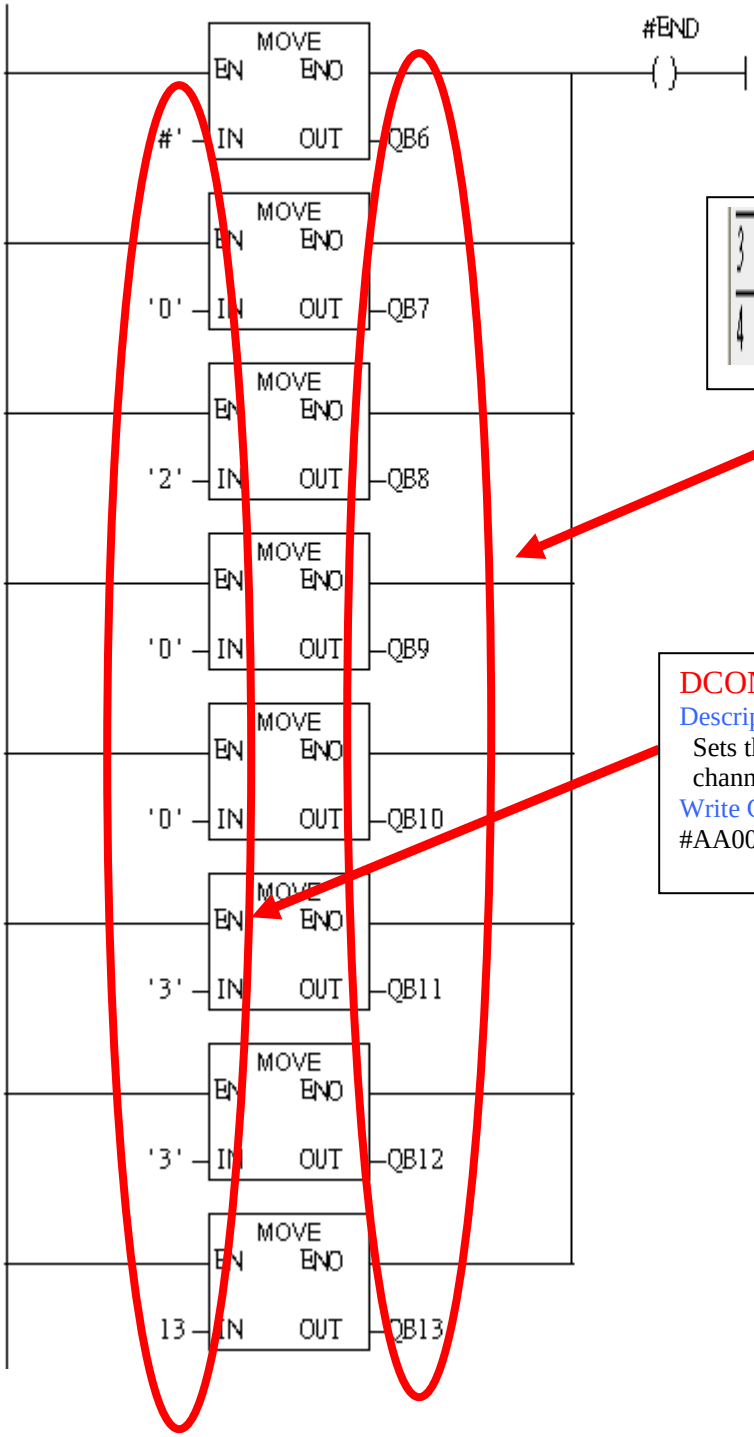
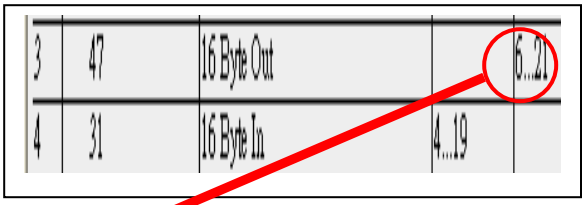




DCON Command in this example:

Description:

Sets the digital output value of the lower eight channels.

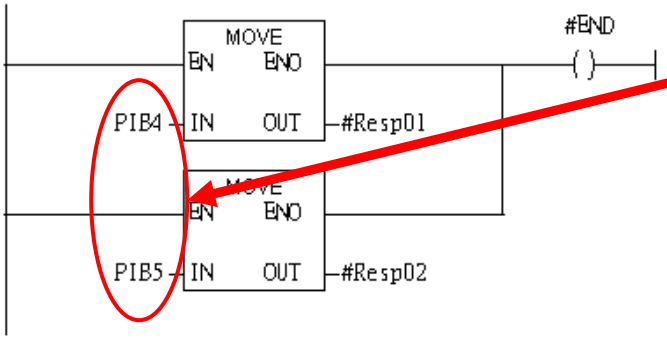
Write Command:

#AA00(data)(CR)

Network5: Read command

Network 5 : Read Command

example: response > CR



3	47	16 Byte Out		6...21
4	31	16 Byte In	4...19	

DCON Command in this example:

Description:

Sets the digital output value of the lower eight channels.

Response Command:

Valid command: > (CR)

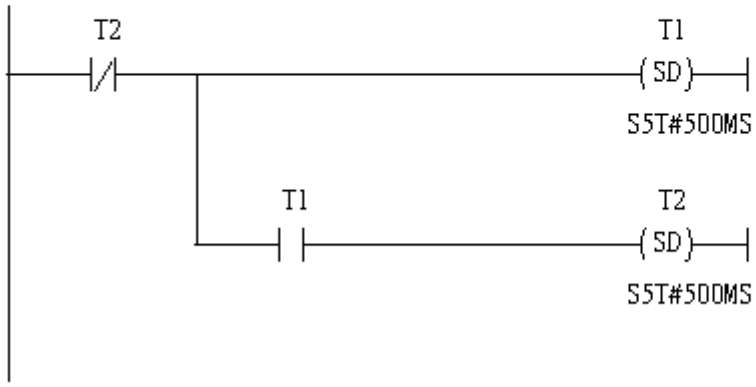
Invalid command: ? (CR)

Ignored command: ! (CR)

Network6: Using T2 trigger T1 If counter (C1) add 1 and Tri will add 1 every 1s.

Network 6 : Timer T1 & T2

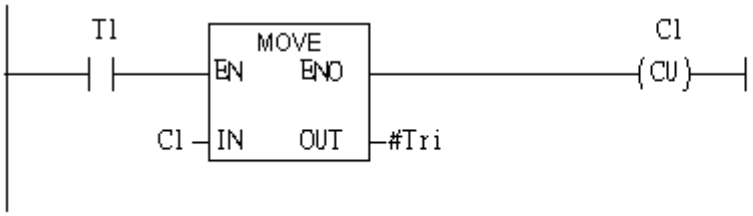
Using T2 Trigger T1



Network7: Counter C1

Network 7 : Counter C1

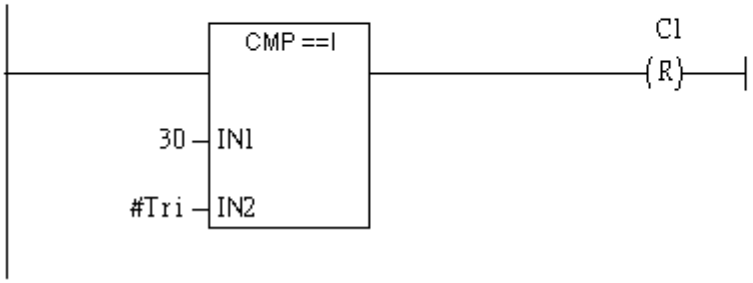
If Counter(C1) add "1"; then Tri will add "1"



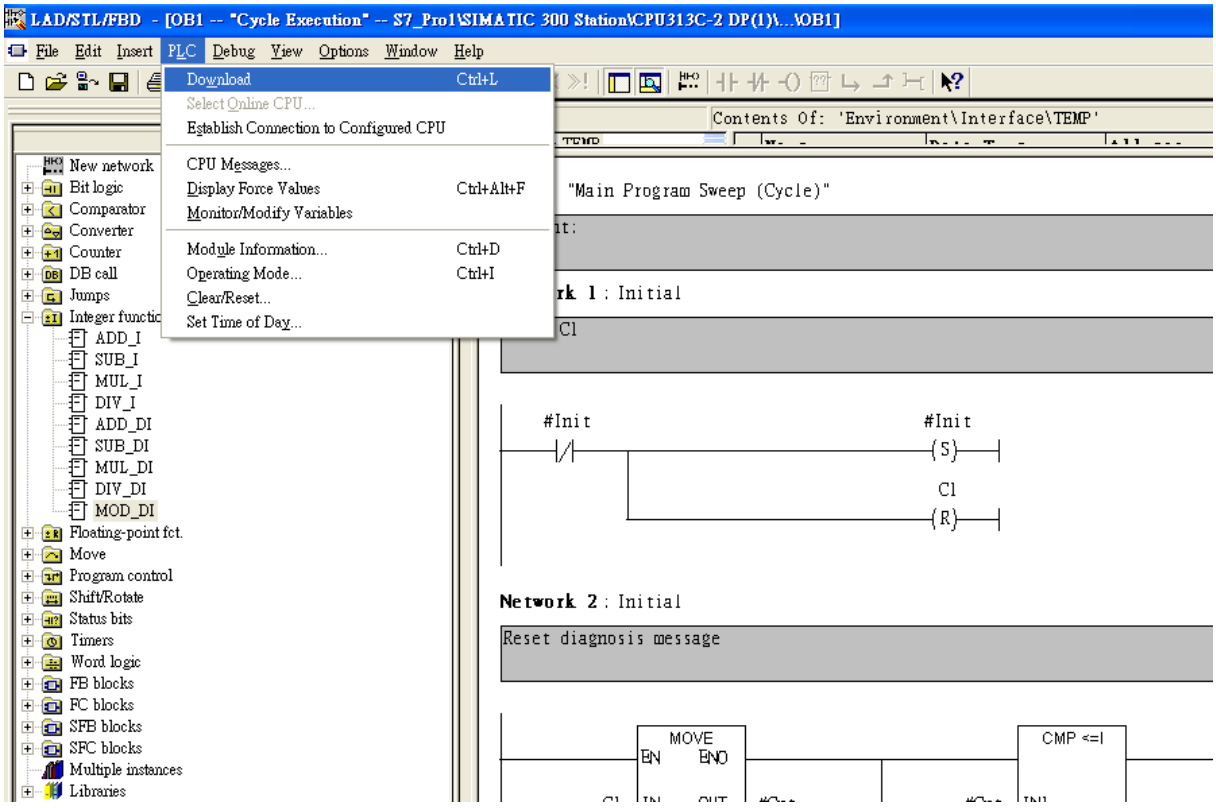
Network8: If Tri is equal to 256 then reset counter (C1).

Network 8 : Compare Tri & 256

If Tri = 256, C1 will reset



Step 6: Download the settings into SIMATIC PLC



Step 7: Make sure the RUN LED of the I-7550 is ON.