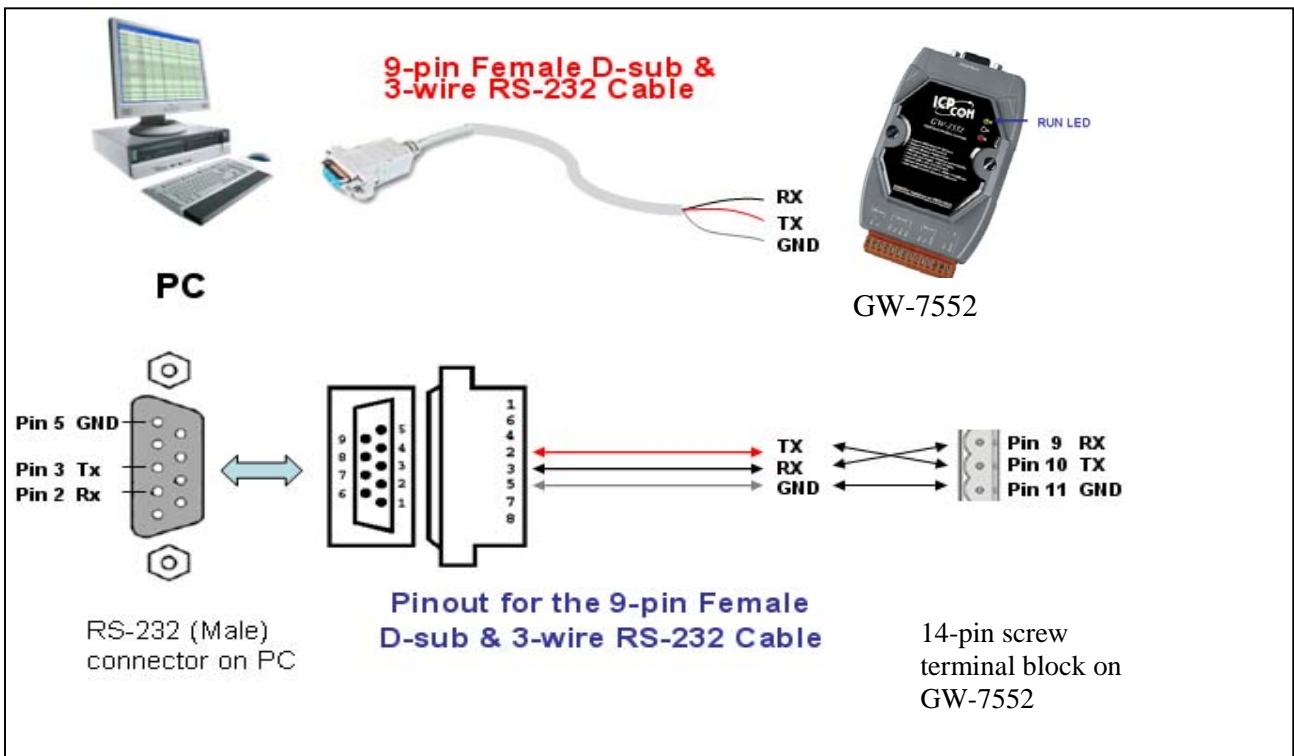
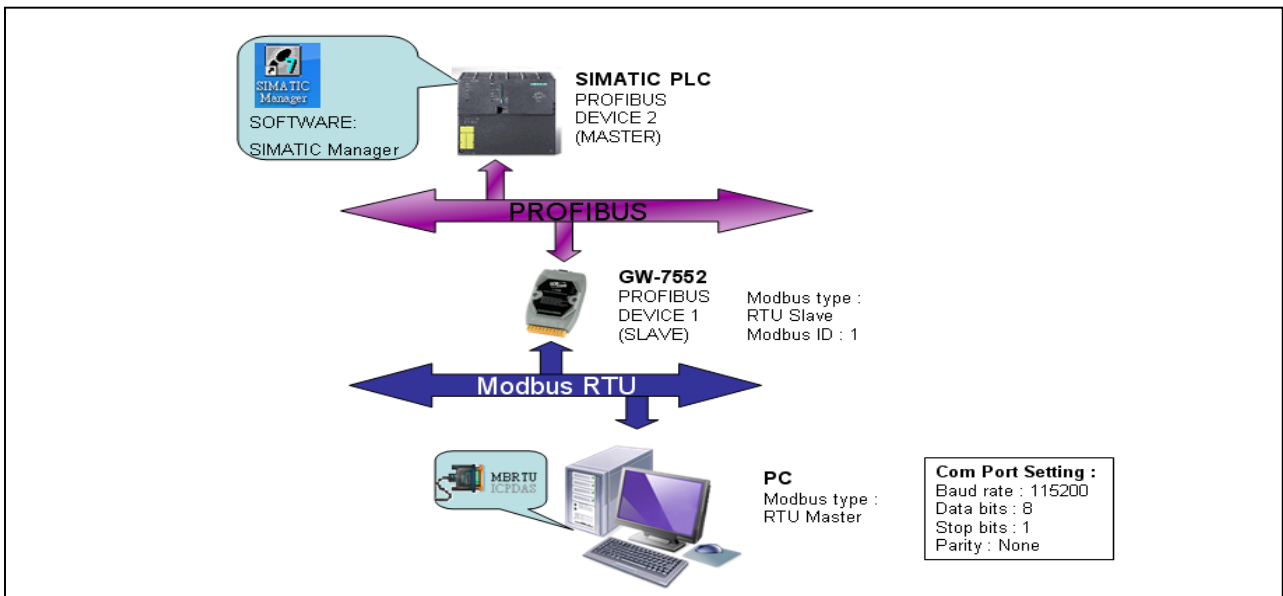


GW-7552 (Modbus RTU slave)

example for SIMATIC STEP 7

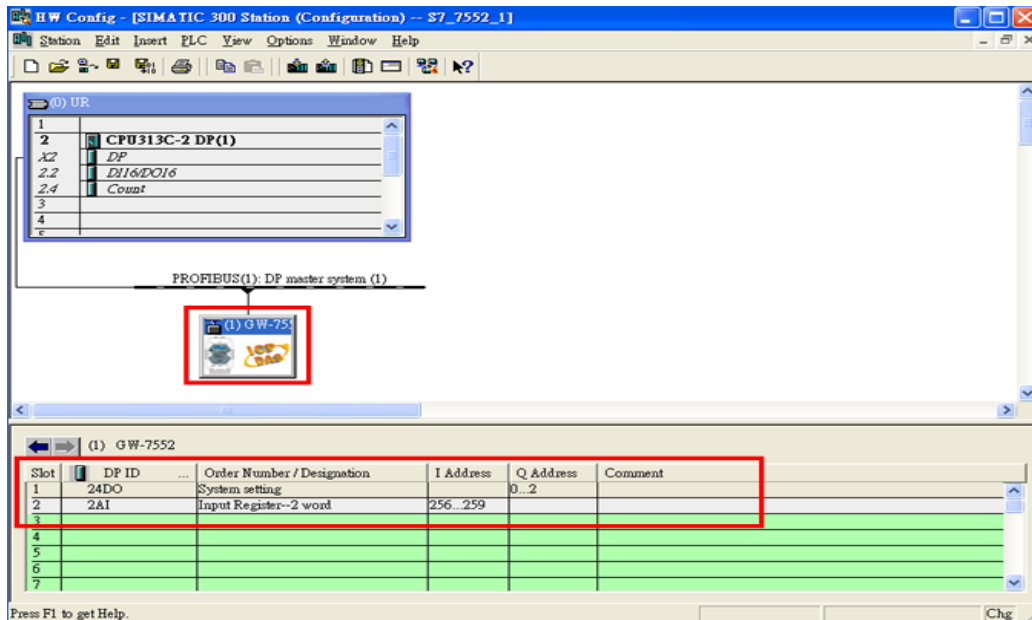
System Architecture: GW-7552 is a **PROFIBUS slave** and **Modbus slave** device.



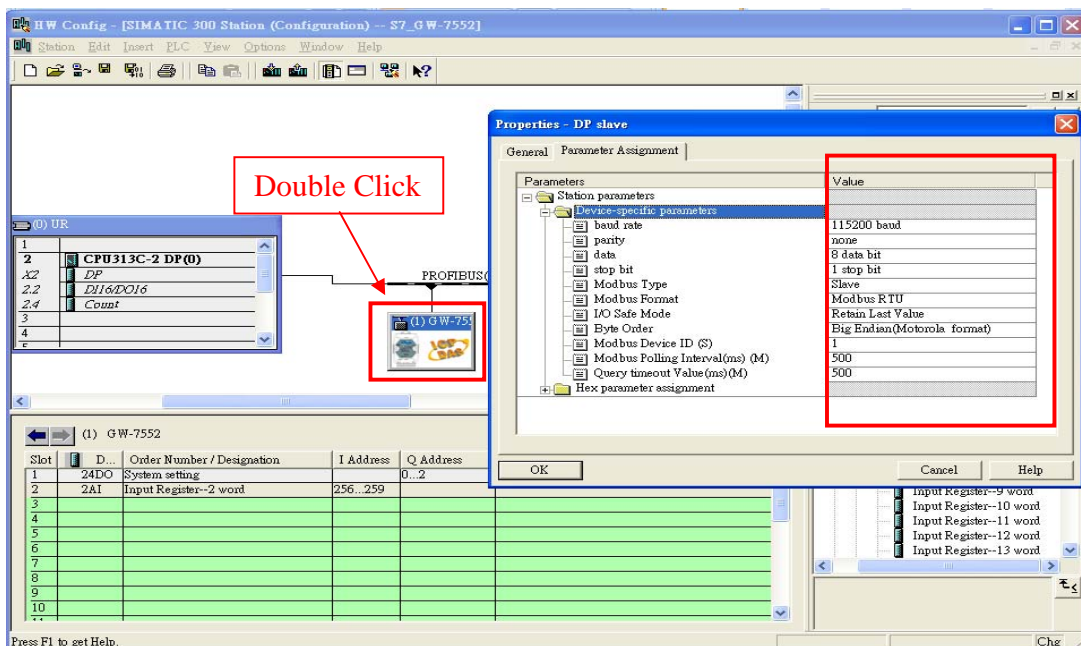
Example 1: PLC receives AO data from Modbus master.

SIMATIC STEP 7 Edit

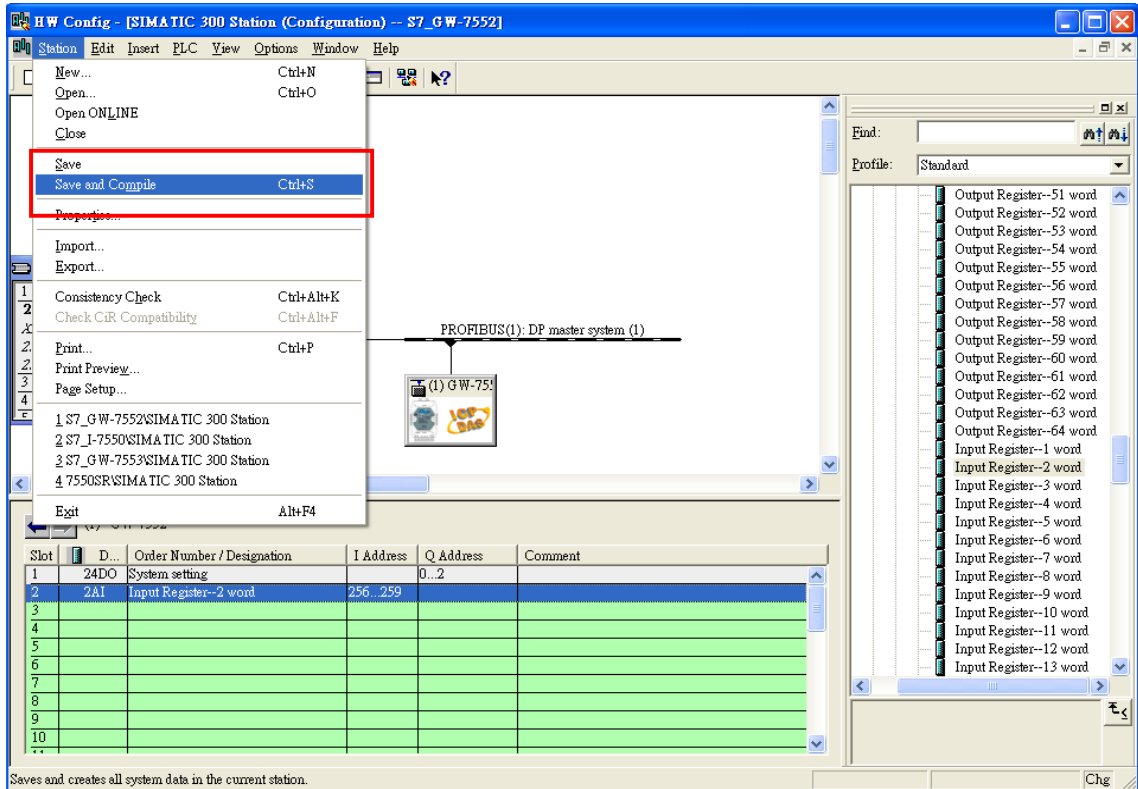
1. HW Config. – configure GW-7522 (ex: System setting module x1, Input Register—2 word module x1)



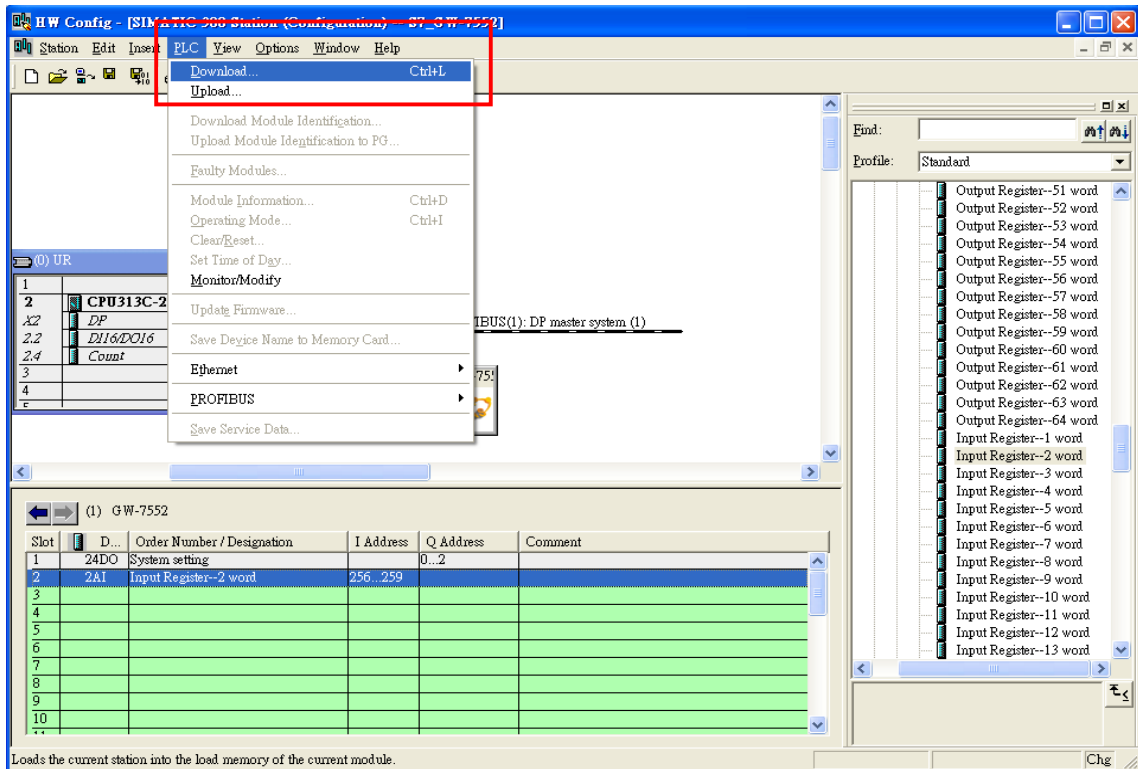
2. HW Config – Parameter assignment (ex: Com port settings, Modbus type: Slave, Modbus format: RTU, Byte Order: Big Endian). Confirm the GW-7522's Com Port setting is the same with MBRTU tool (ex: baud rate-115200, data bits-8, stop bits-1, parity-none). About the MBRTU tool, please refer to the “Communication test” in the below.



3. Save and Compile



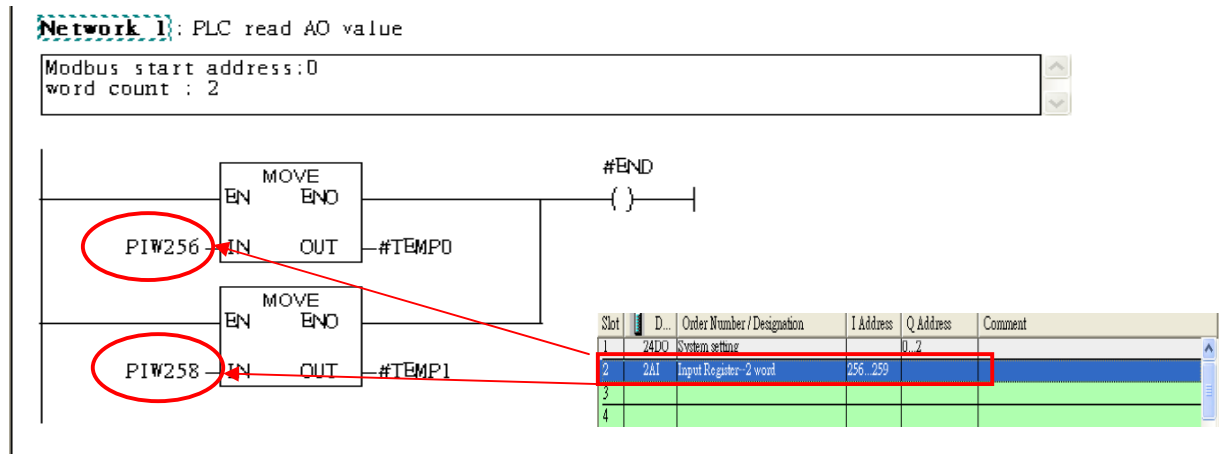
4. Download setting into STEP 7



5. S7 program edit

Variables used in the example LD Program:

Contents Of: 'Environment\Interface\TEMP'				
	Name	Data Type	Address	Comment
	OBI_SCAN_1	Byte	0.0	1 (Organization block 1, OBI)
	OBI_PRIORITY	Byte	1.0	1 (Col
	OBI_OB_NUMBR	Byte	2.0	Priori
	OBI_RESERVED_1	Byte	3.0	1 (Org
	OBI_RESERVED_2	Byte	4.0	Reserv
	OBI_PREV_CYCLE	Int	5.0	Reserv
	OBI_MIN_CYCLE	Int	6.0	Cycle
	OBI_MAX_CYCLE	Int	8.0	Minimu
	OBI_DATE_TIME	Date_And_Time	10.0	Maximum cycle time of OBI (milliseconds)
	OBI_DATE_TIME	Date_And_Time	12.0	Date and time OBI started
	END	Bool	20.0	
	TEMP0	Word	22.0	
	TEMP1	Word	24.0	



6. S7 program download

The screenshot shows the SIMATIC Manager interface. The 'Download' menu option is highlighted in red in the top menu bar. The background displays the same ladder logic diagram for Network 1, showing the connection between PIW256, PIW258, #TEMP0, #TEMP1, and #END. The status bar at the bottom indicates 'Loads the current block to the PLC.' and 'offline Abs + 5.2 Insert Chg'.

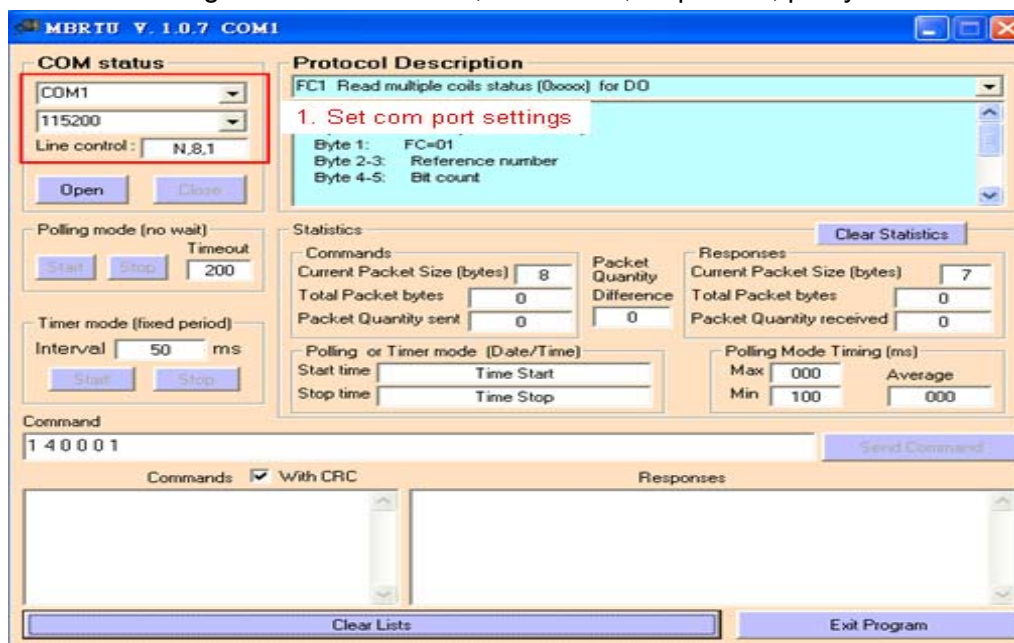
7. Make sure the RUN LED of the GW-7552 is on and the switch of the GW-7552 is at Normal mode.



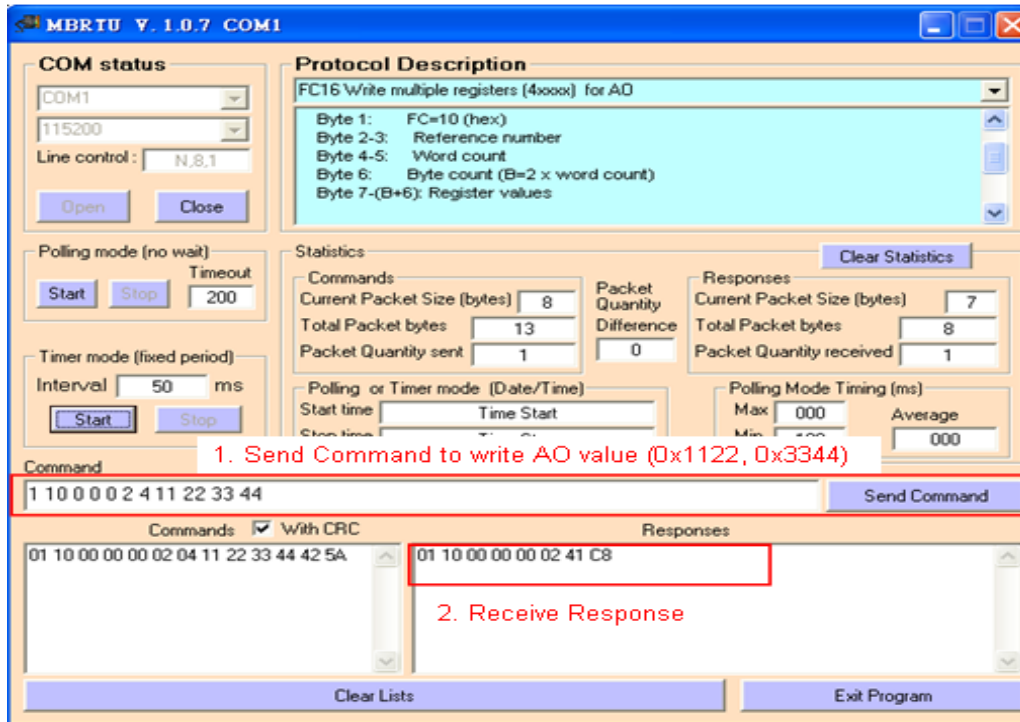
Communication test

1. Confirm the GW-7552's Com Port setting is the same with Modbus Master tool (ex: MBRTU, you can download MBRTU from http://ftp.icpdas.com.tw/pub/cd/8000cd/napdos/modbus/modbus_utility/)

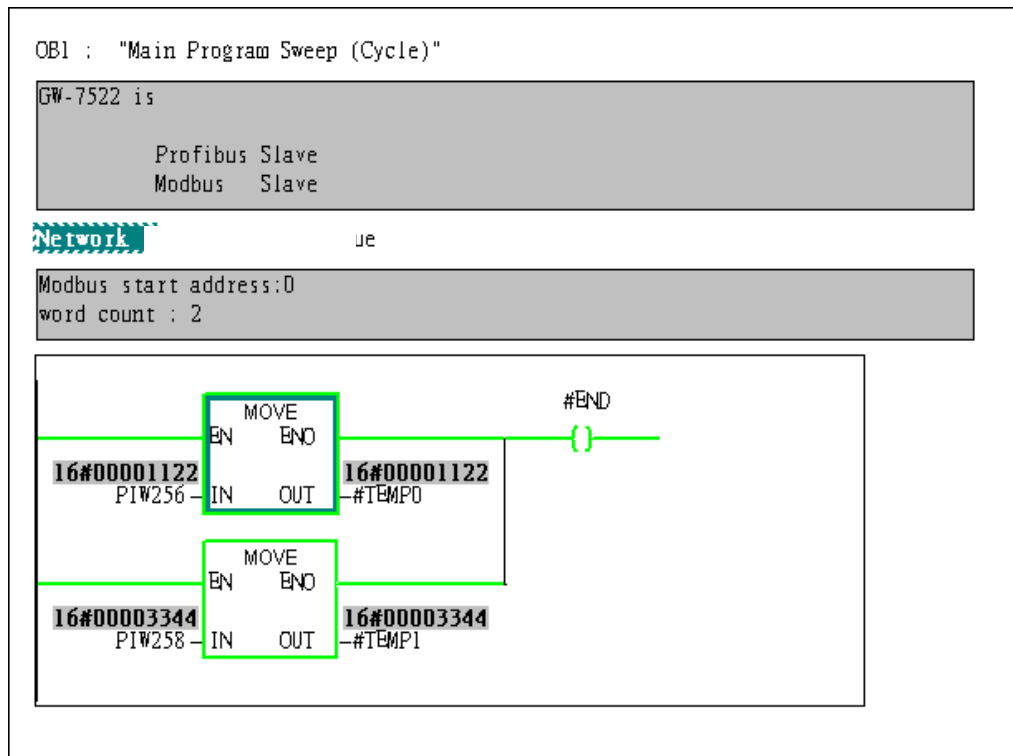
Com Port Settings: baud rate-115200, data bits-8, stop bits-1, parity-none



2. Click "Send Command" button to write AO value (0x1122, 0x3344)



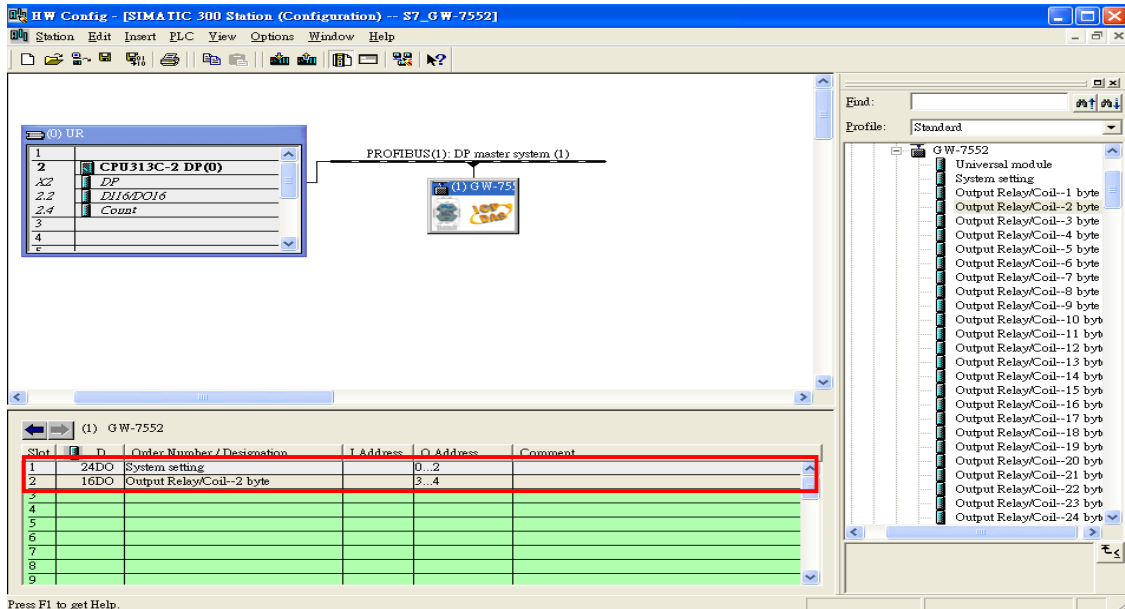
3. PLC will receives the "AI Value (0x1122, 0x3344)" at PLC address PIW256&PIW258



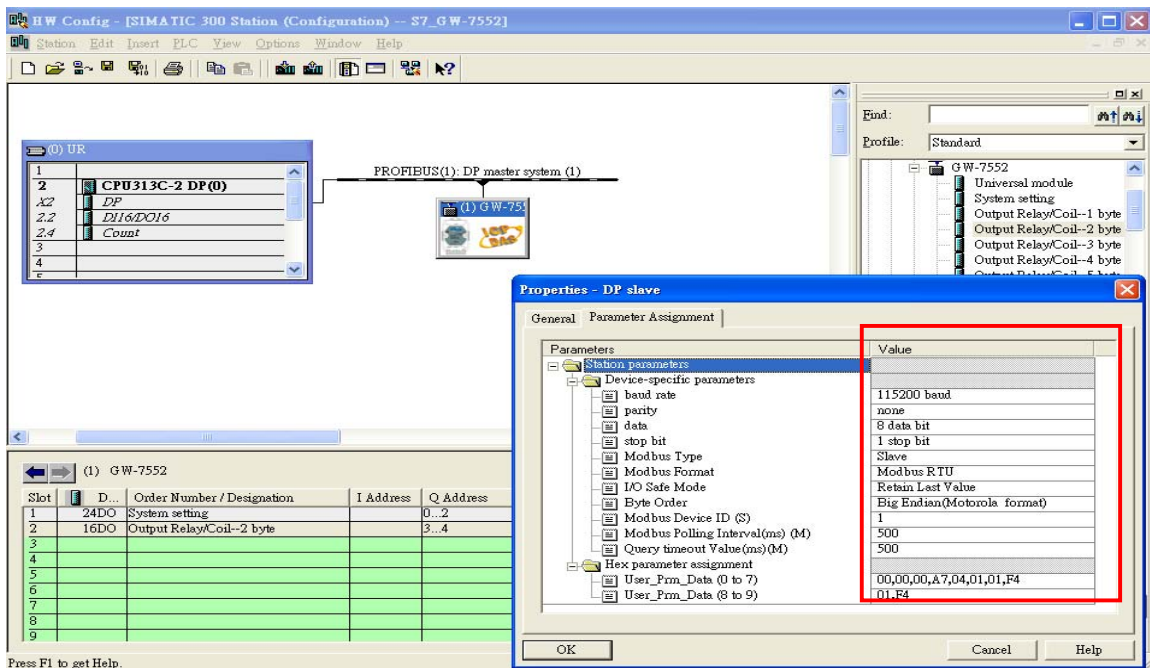
Example 2: PLC refreshes DI data to Modbus master.

SIMATIC STEP 7 Edit

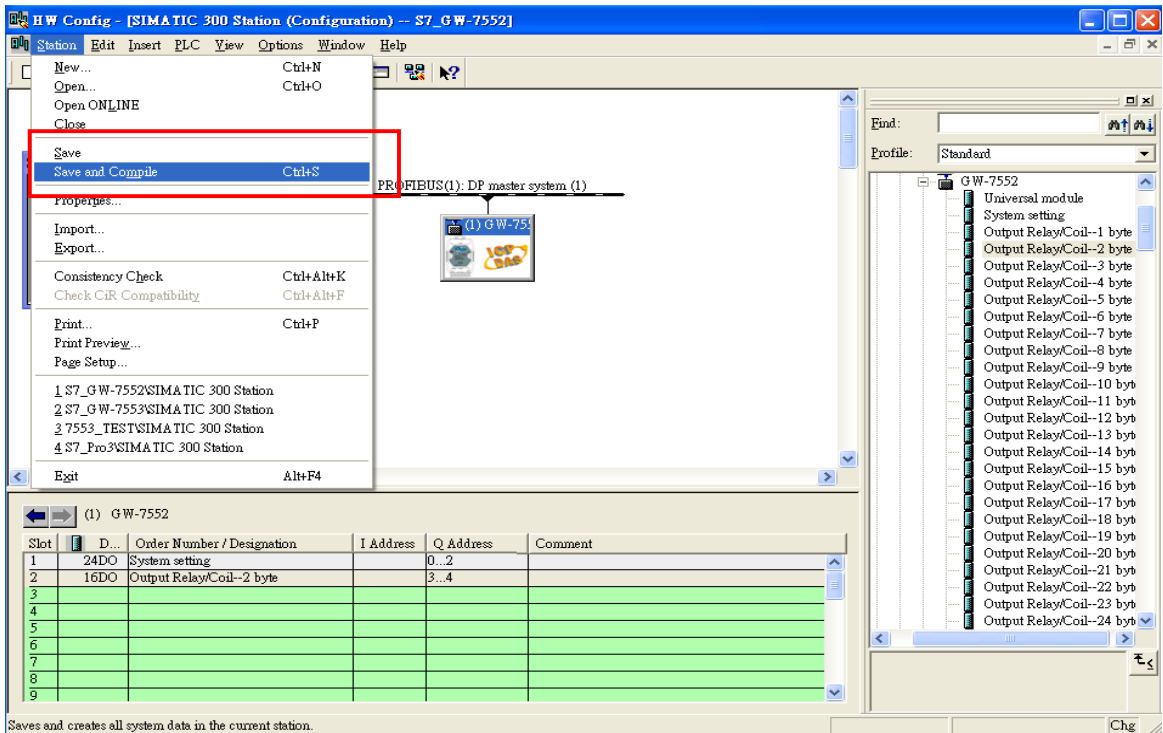
1. HW Config. – configure GW-7522 (ex: System setting module x1, Output Relay/Coil—2 byte module x1)



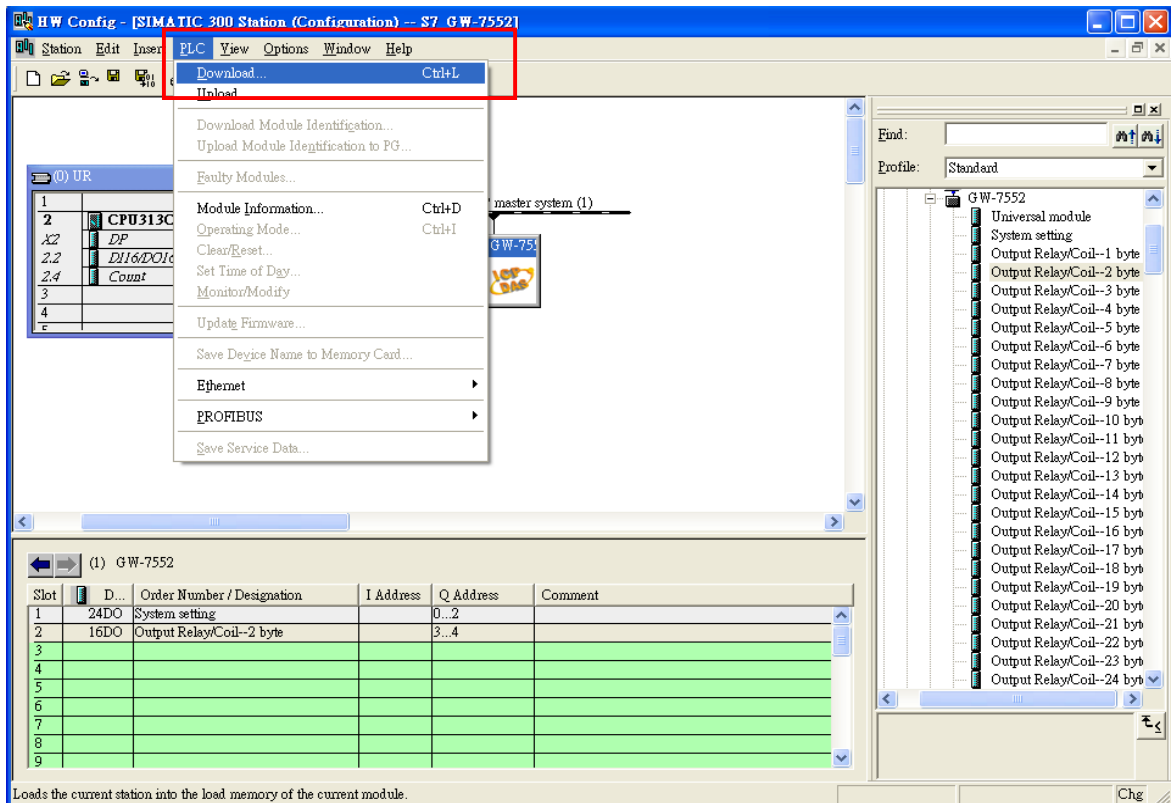
2. HW Config – Parameter assignment (ex: Com port settings, Modbus type: Slave, Modbus format: RTU, Byte Order: Big Endian). Confirm the GW-752's Com Port setting is the same with MBRTU tool (ex: baud rate-115200, data bits-8, stop bits-1, parity-none). About the MBRTU tool, please refer to the “Communication test” in the below.



3. Save and Compile



4. Download setting into STEP 7



5. S7 program edit

Variables used in the example LD Program:

Contents Of: 'Environment\Interface\TEMP'

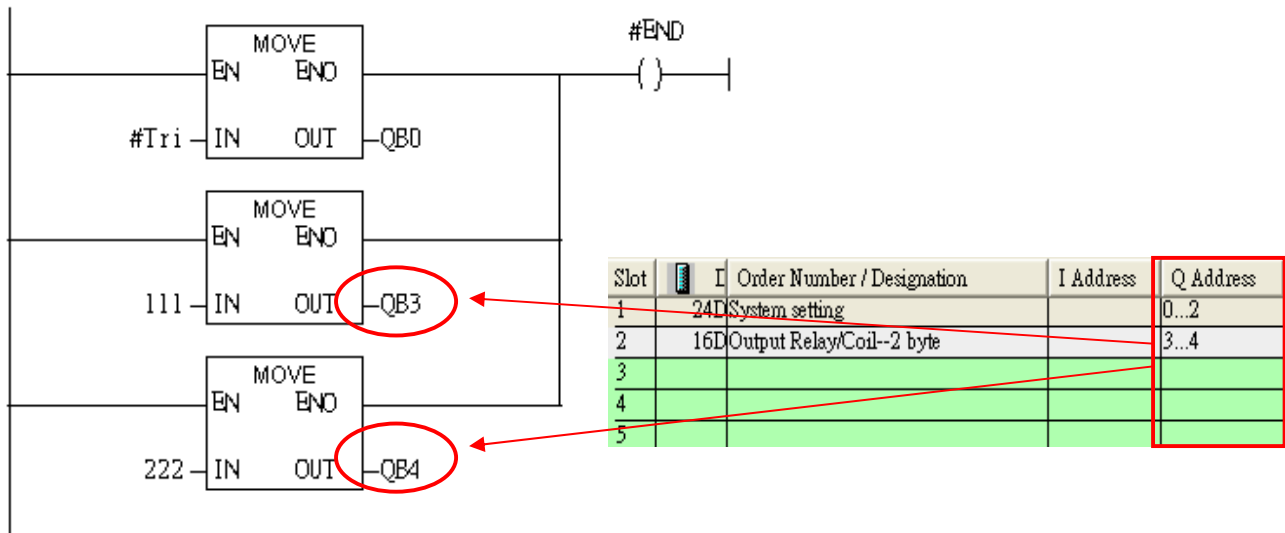
Name	Data Type	Address	Comment
OB1_MAX_CYCL			
OB1_DATE_TIM			
END	Bool	20.0	
Tri	Int	22.0	

OB1 : "Main Program Sweep (Cycle)"

PROFIBUS slave
Modbus slave

Network 1: QB0 add "1" refresh DO value

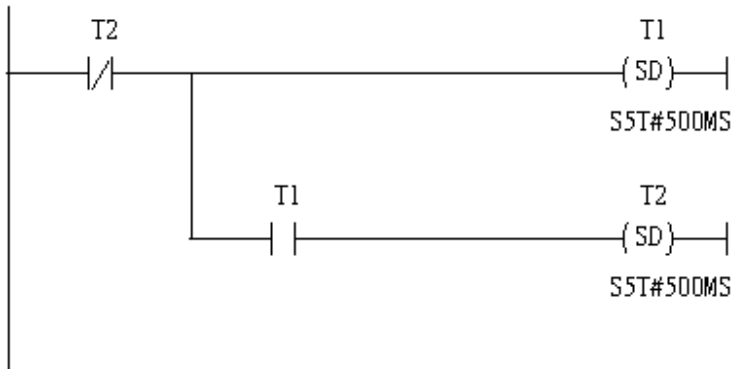
2 byte 16 DO



Using T2 trigger T1 .C1 and Tri will add 1 every 1s.

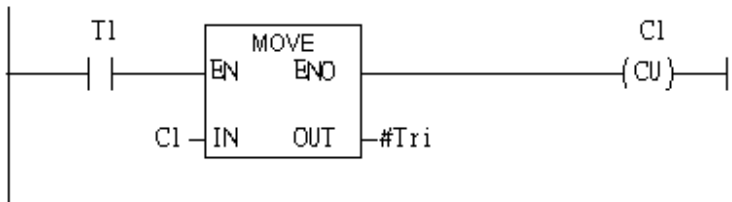
Network 2 : Timer T1 & T2

Using T2 trigggle T1



Network 3 : T1 trigggle Counter(C1)

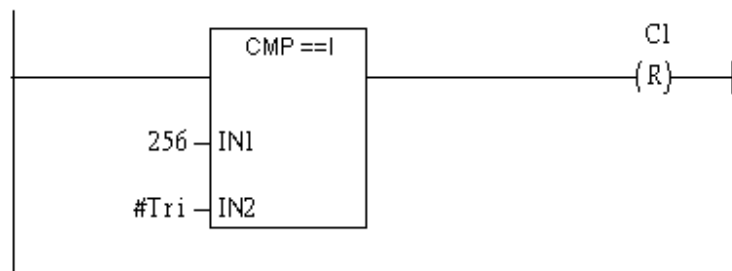
Counter(C1) add "1" and Tri add "1" , too.



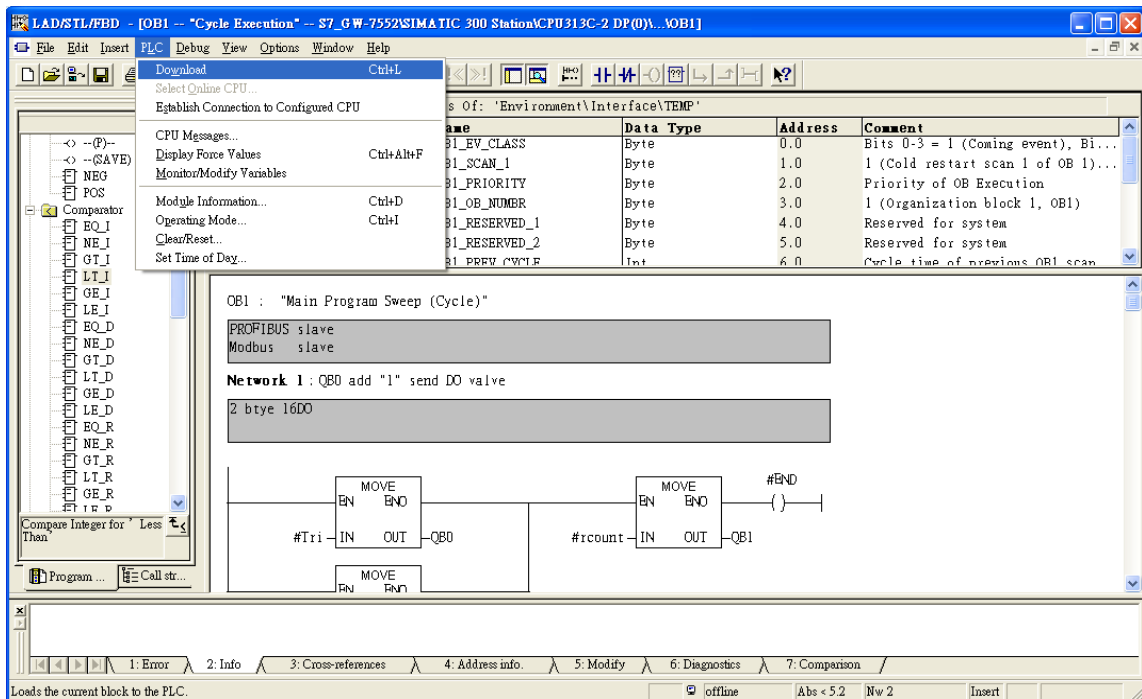
If Tri is equal to 256, reset counter (C1)

Network 4 : Compare Tri with 256

If Tri is equal to 256 that will reset C1.



6. S7 program download



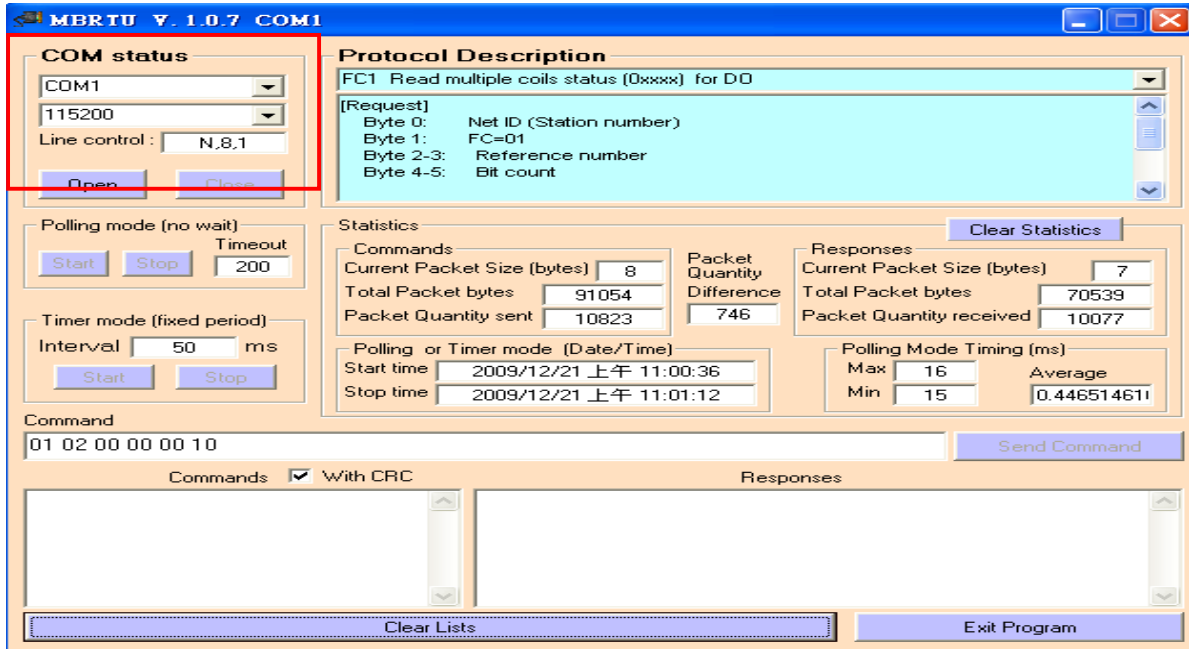
7. Make sure the RUN LED of the GW-7552 is on and the switch of the GW-7552 is at Normal mode.



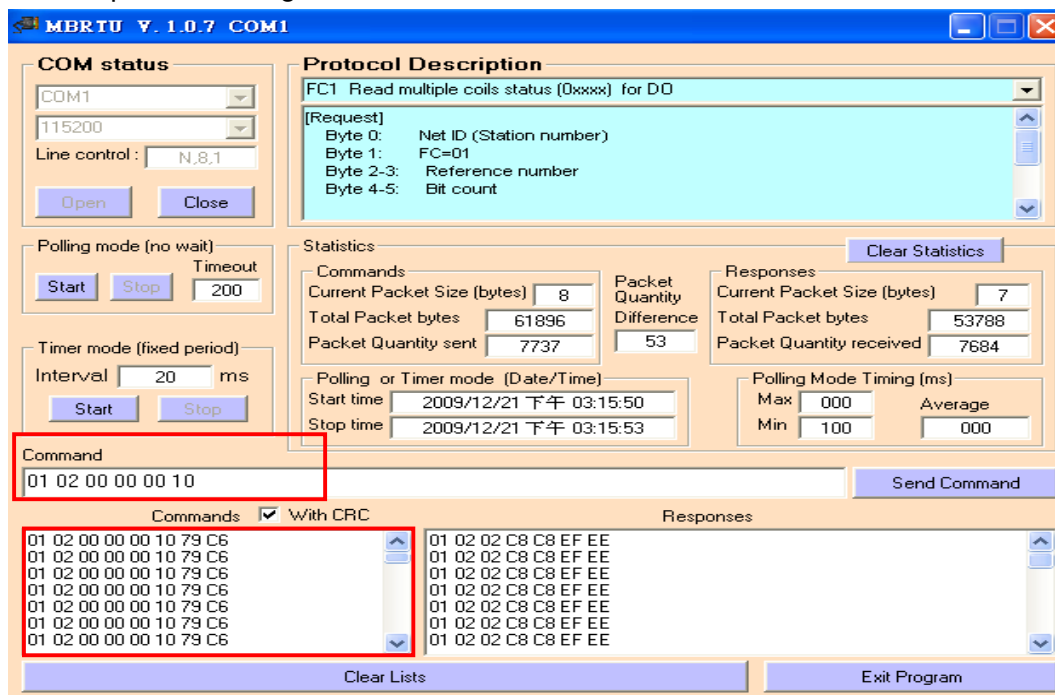
Communication test

1. Confirm the Com Port setting of Modbus Master tool is the same with GW-7552's (ex: MBRTU, you can download MBRTU from http://ftp.icpdas.com.tw/pub/cd/8000cd/napdos/modbus/modbus_utility/)

Com Port Settings: baud rate-115200, data bits-8, stop bits-1, parity-none



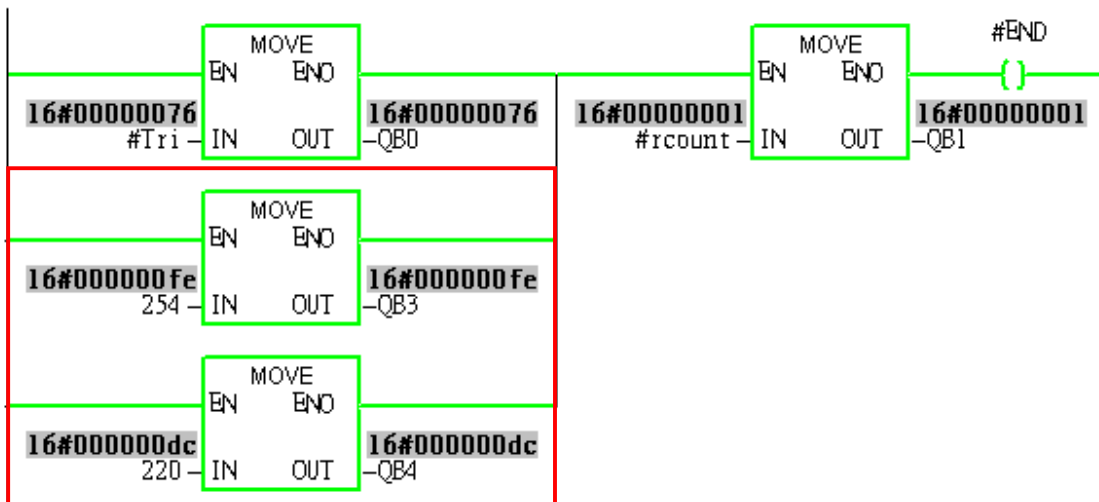
2. Input command (" 01 02 00 00 00 10") in MBRTU and click <Send Command> button to send Modbus command: "01 02 00 00 00 10 79 C6". We can get the DI value (0xC8, 0xC8) from the response message.



- We change QB3 to 0xFE and QB4 to 0xDC, and then we can click <Send Command> button to read DI again at MBRTU and we will get the new DI value (0xFE, 0xDC) from the response message.

Network 1: QB0 add "1" send DO valve

2 byte 16D0



COM status
 COM1
 115200
 Line control: N,8,1
 Open Close

Protocol Description
 FC1 Read multiple coils status (0xxxx) for DO
 [Request]
 Byte 0: Net ID (Station number)
 Byte 1: FC=01
 Byte 2-3: Reference number
 Byte 4-5: Bit count

Statistics
 Commands: Current Packet Size (bytes) 8, Total Packet bytes 65408, Packet Quantity sent 8176
 Packet Quantity Difference 53
 Responses: Current Packet Size (bytes) 7, Total Packet bytes 56861, Packet Quantity received 8123

Command
 01 02 00 00 00 10
 Send Command

Responses
 01 02 00 00 00 10 79 C6
 01 02 02 FE DC F8 41