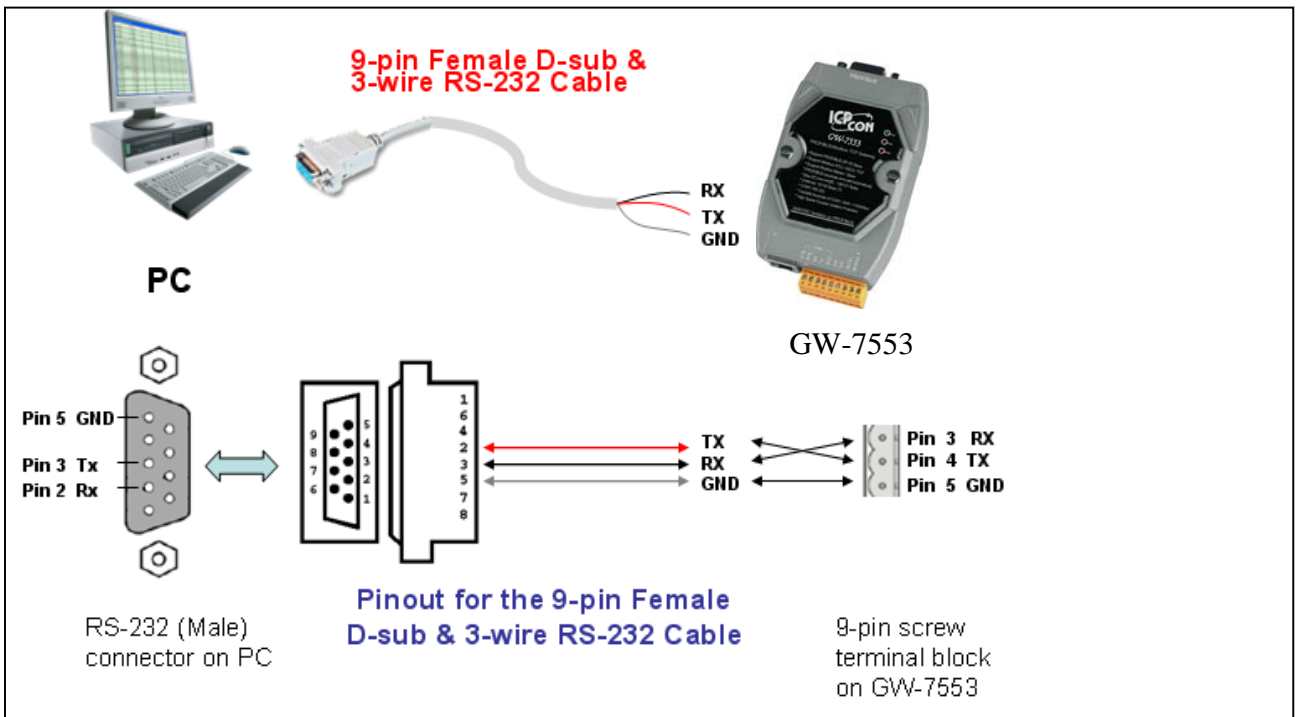
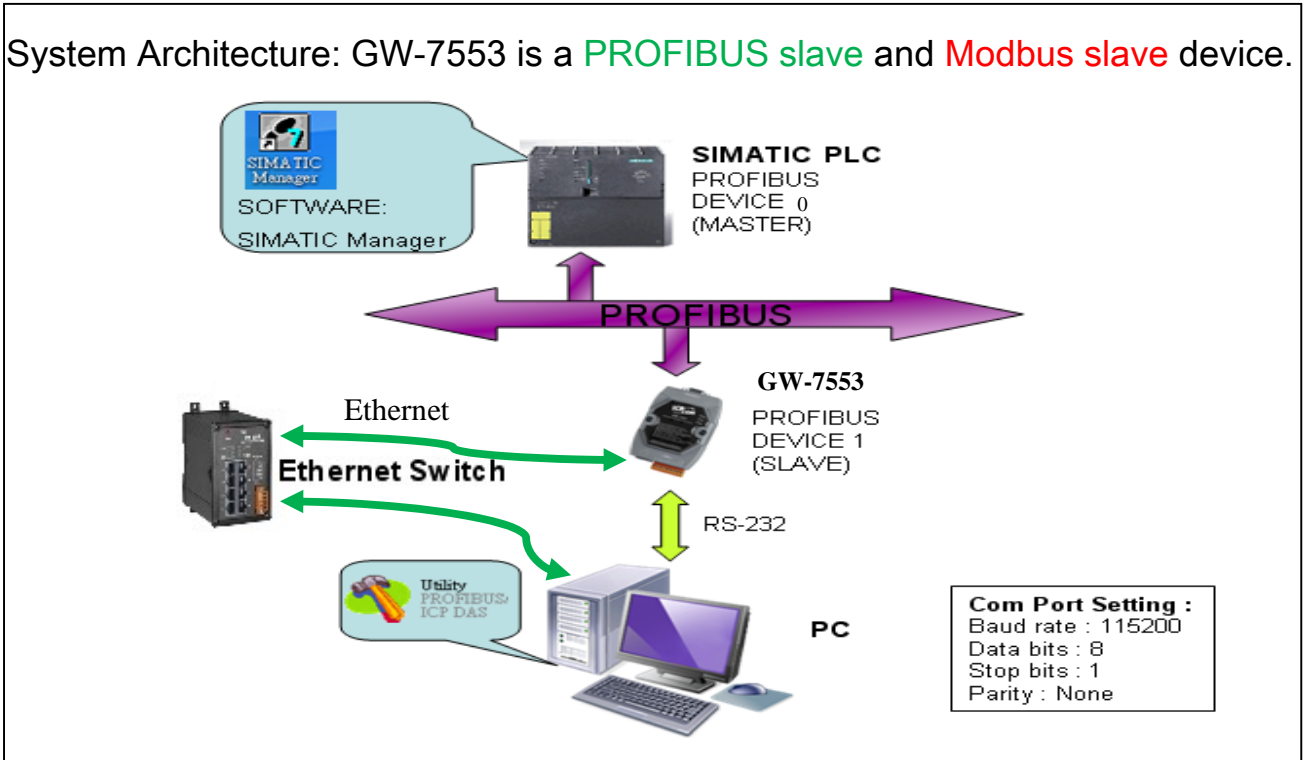


GW-7553 (Modbus TCP slave)

example for SIMATIC STEP 7

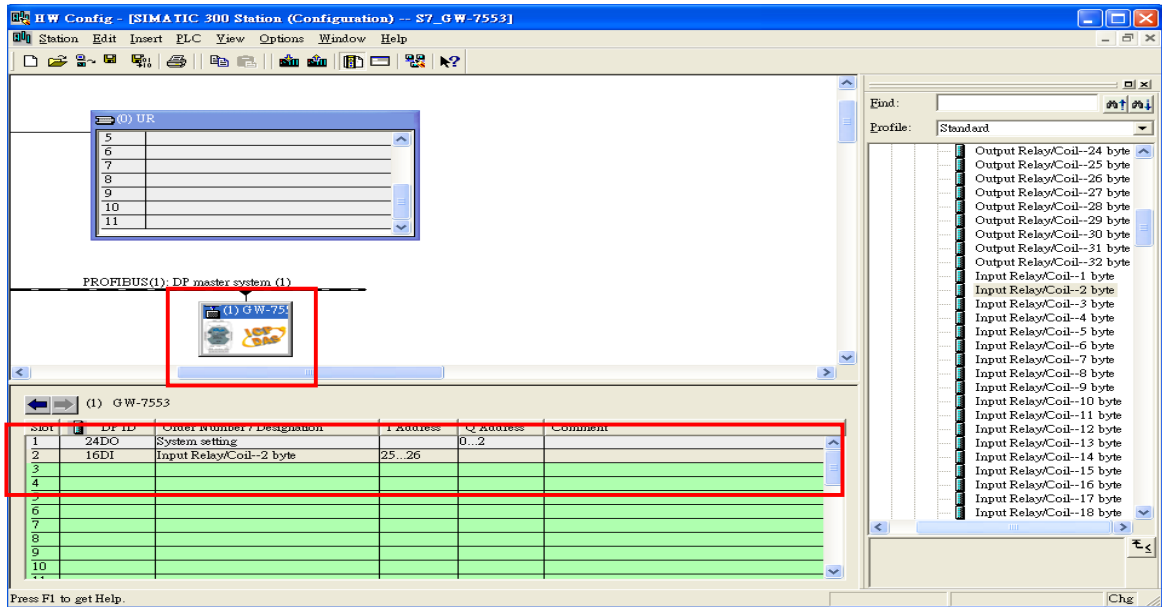
System Architecture: GW-7553 is a PROFIBUS slave and Modbus slave device.



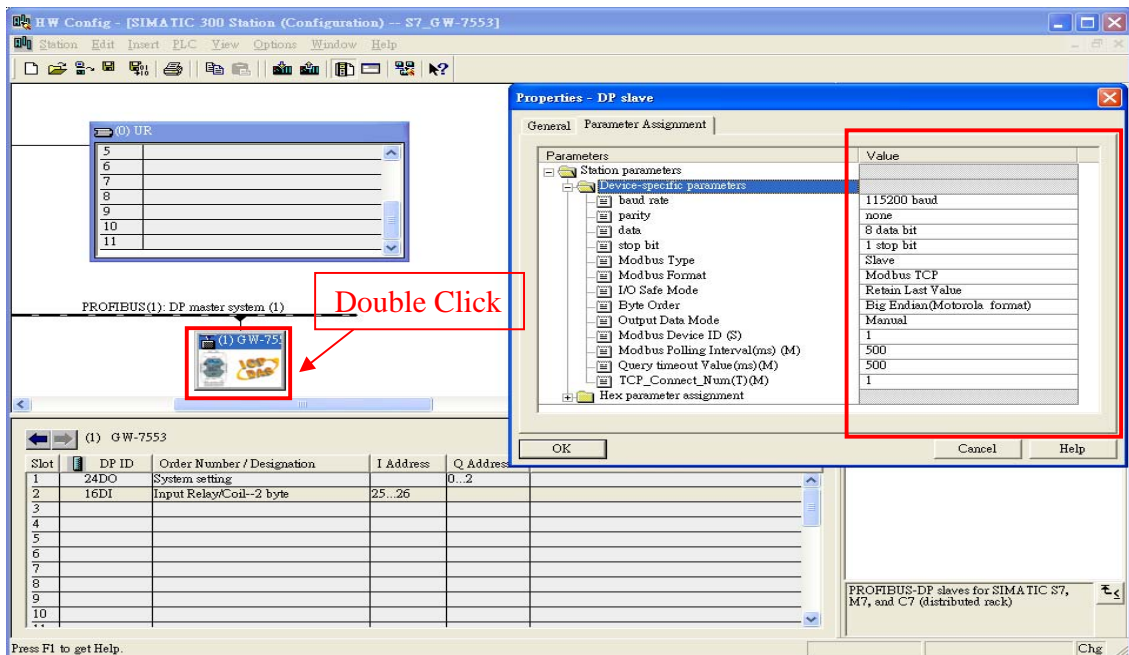
Example 1: PLC receives DO data from Modbus master.

SIMATIC STEP 7 Edit

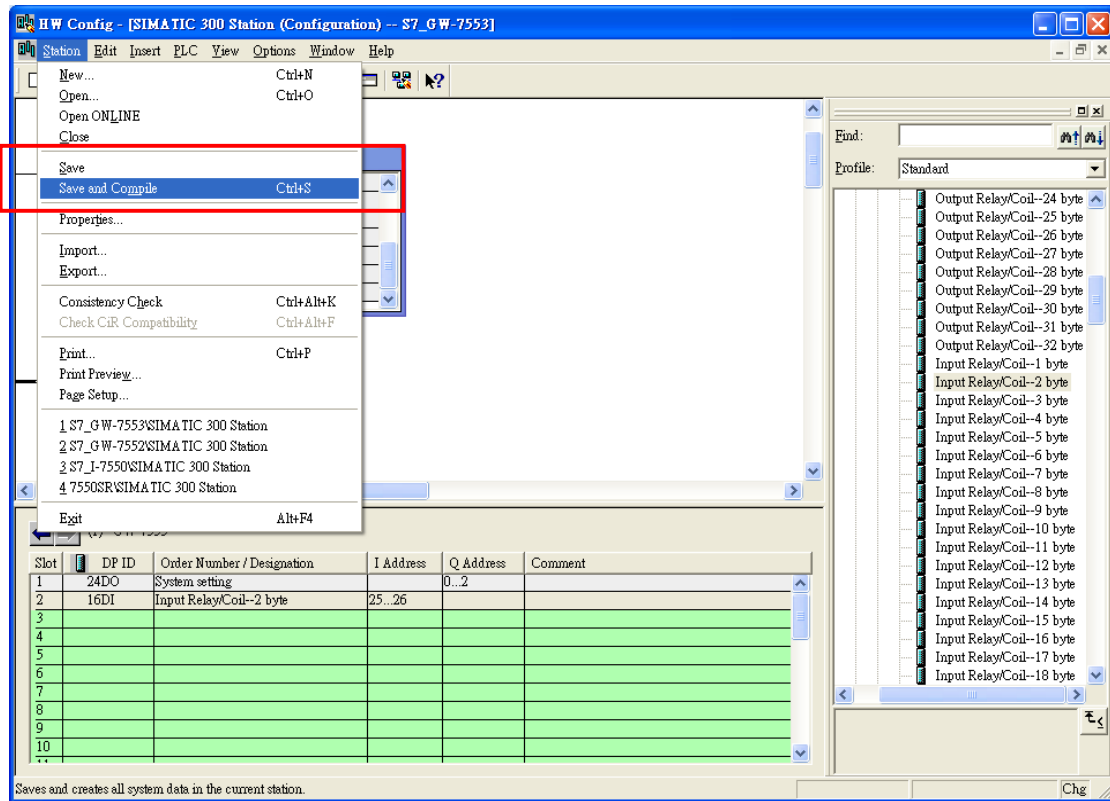
1. HW Config. – configure GW-7553 (ex: System setting module x1, Input Relay/Coil—2 byte module x1)



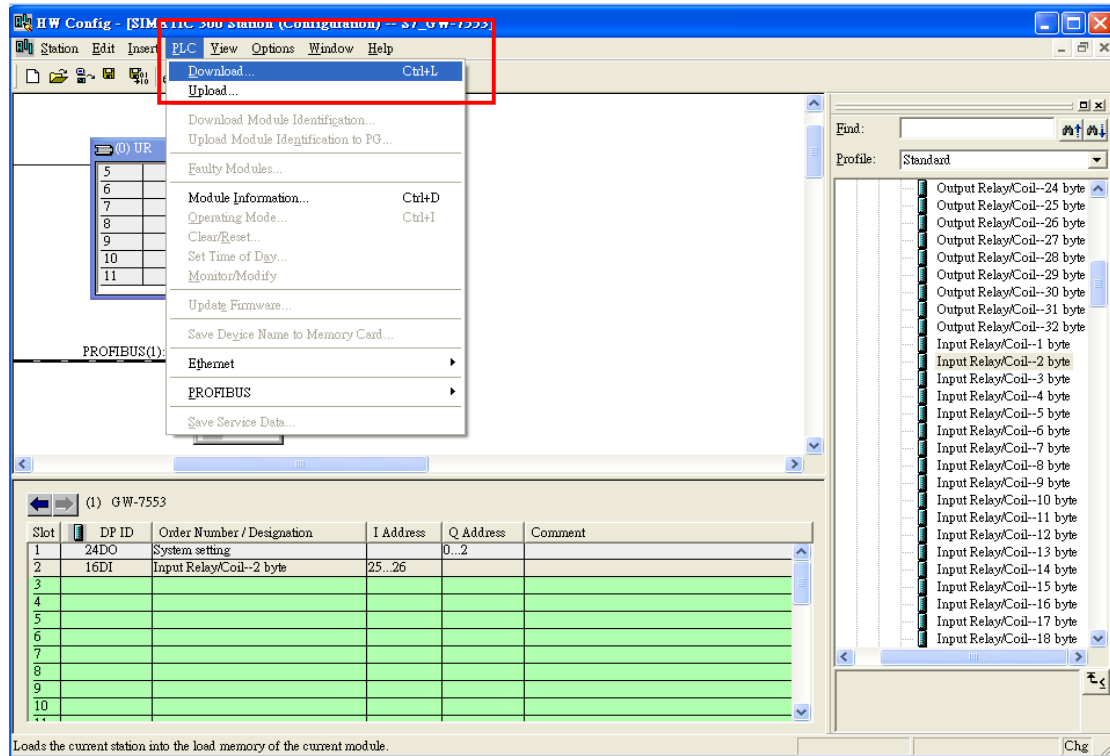
2. HW Config – Parameter assignment (ex: Com port settings, Modbus type: Slave, Modbus format: TCP, Byte Order: Big Endian). Confirm the GW-7553's Com Port setting is the same with MBTCP tool (ex: baud rate-115200, data bits-8, stop bits-1, parity-none). About the MBTCP tool, please refer to the “Communication 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:

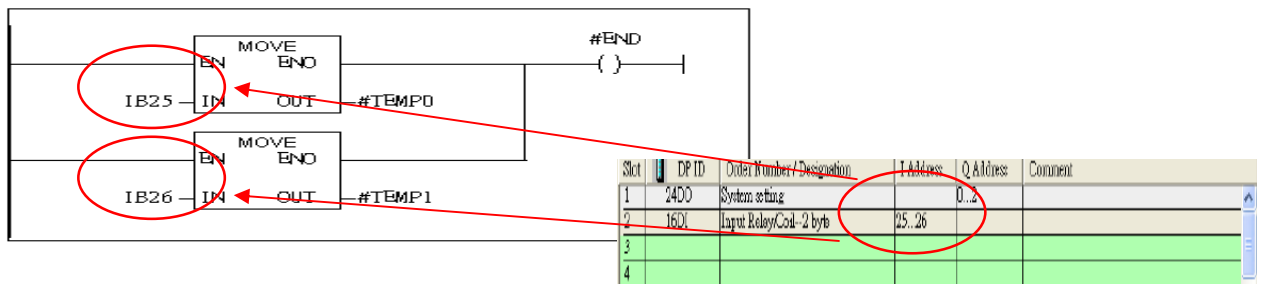
Contents Of: 'Environment\Interface\TEMP'				
	Name	Data Type	Address	Comment
OB1_EV_CLASS	OB1_OB_NUMBR	Byte	3.0	1 (Organization block 1, OB1)
OB1_SCAN_1	OB1_RESERVED_1	Byte	4.0	Reserved for system
OB1_PRIORITY	OB1_RESERVED_2	Byte	5.0	Reserved for system
OB1_OB_NUMBR	OB1_PREV_CYCLE	Int	6.0	Cycle time of previous OB1 scan (milliseconds)
OB1_RESERVED_1	OB1_MIN_CYCLE	Int	8.0	Minimum cycle time of OB1 (milliseconds)
OB1_RESERVED_2	OB1_MAX_CYCLE	Int	10.0	Maximum cycle time of OB1 (milliseconds)
OB1_PREV_CYCLE	OB1_DATE_TIME	Date_And_Time	12.0	Date and time OB1 started
OB1_MIN_CYCLE	TEMP0	Byte	20.0	
OB1_MAX_CYCLE	TEMP1	Byte	21.0	
TEMP0	END	Bool	22.0	
TEMP1				
END				

OB1 : "Main Program Sweep (Cycle)"

PROFIBUS Slave
Modbus Slave

Network 1: Title:

Comment:



6. S7 program download

Download

- Select Online CPU...
- Establish Connection to Configured CPU
- CPU Messages...
- Display Force Values
- Monitor/Modify Variables
- Module Information...
- Operating Mode...
- Clear/Reset...
- Set Time of Day...

OB1_MAX_CYCLE

PROFIBUS Slave
Modbus Slave

Network 1: Title:

Comment:

1: Error 2: Info 3: Cross-references 4: Address info. 5: Modify 6: Diagnostics 7: Comparison

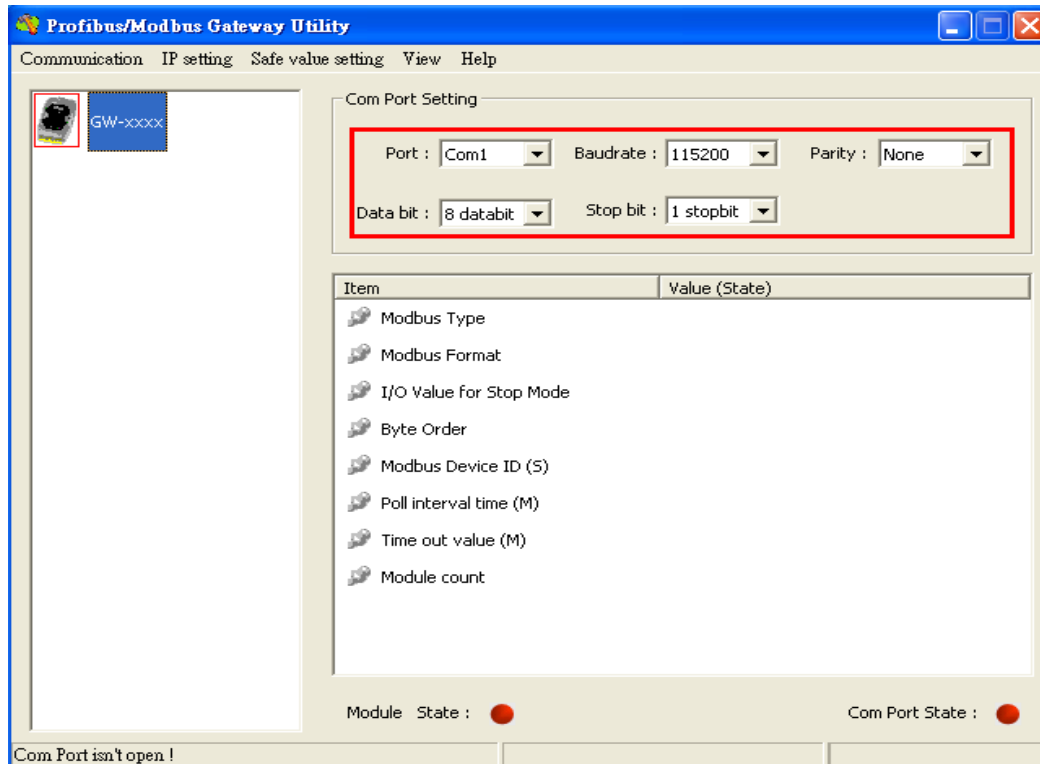
Loads the current block to the PLC. offline Abs < 5.2 Nw 1 Insert Chg

Setup IP of GW-7553 with Utility (the user can download the latest Utility at ftp://ftp.icpdas.com/pub/cd/fieldbus_cd/profibus/gateway/gw-7553/utilities/)

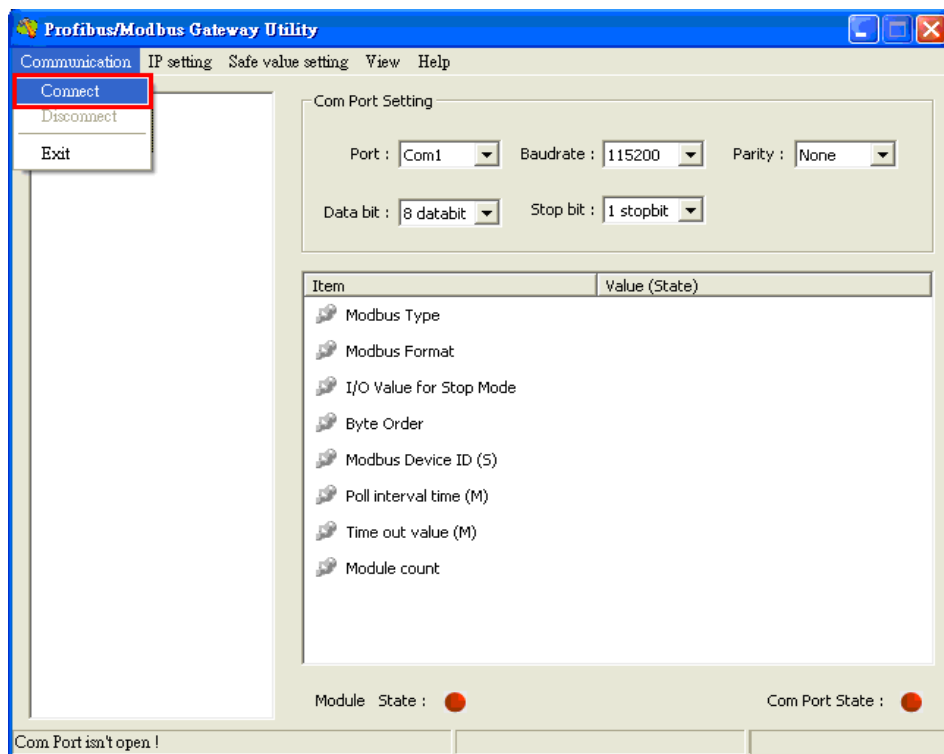
1. Before the connection, please make sure the RUN LED of the GW-7553 is on and the switch of the GW-7553 is at setting mode.



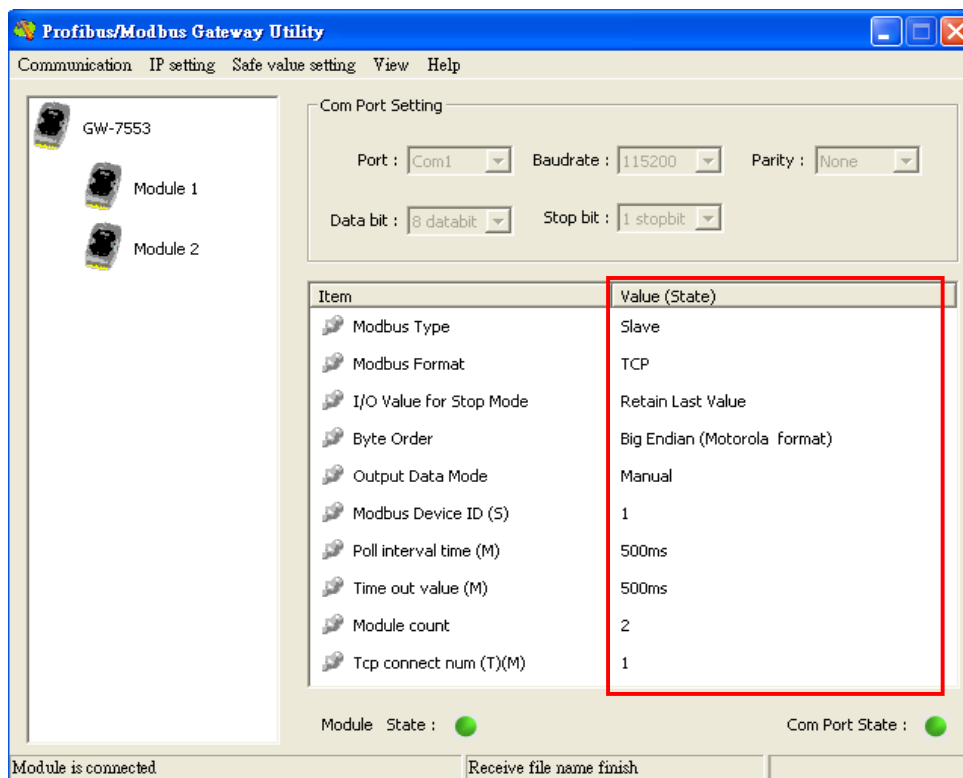
2. Set the Com Port Setting of the Utility



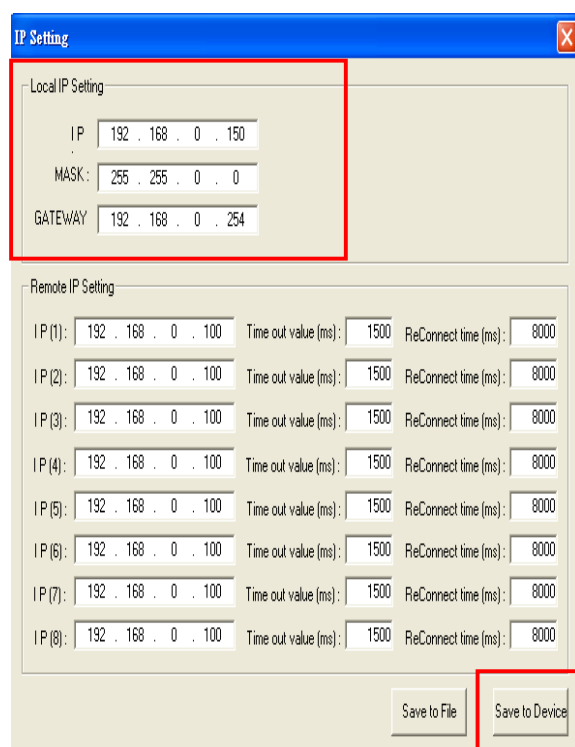
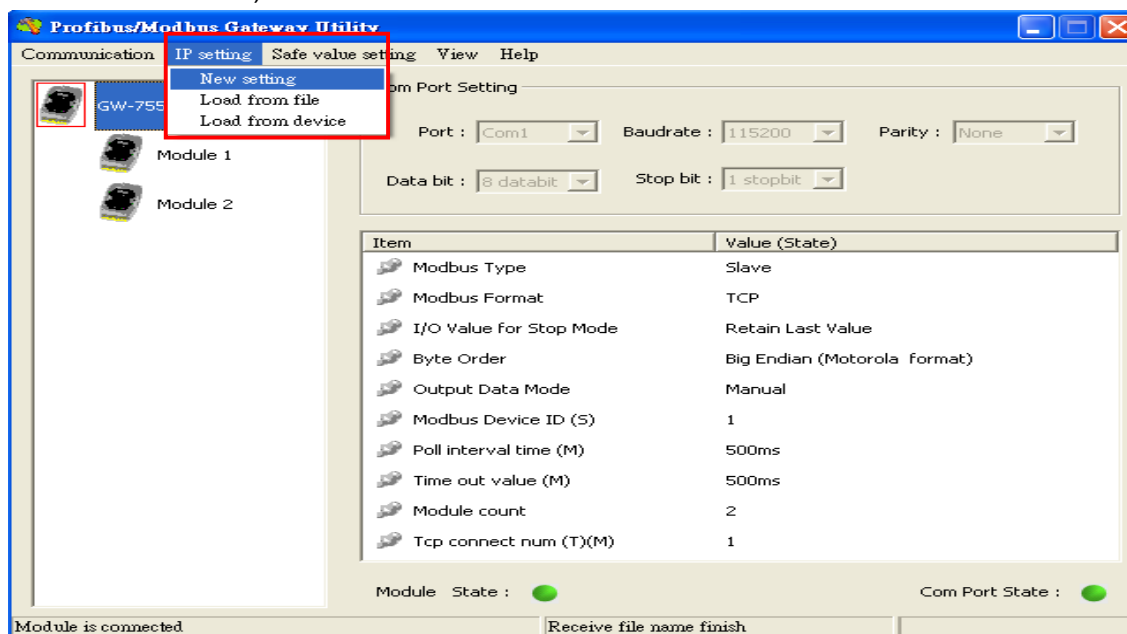
3. Click connect



4. Connection success



5. The settings of the GW-7553 must have the same domain and different IP with the PC (ex: PC's IP=192.168.0.118, MASK=255.255.0.0; GW-7553's IP=192.168.0.150, MASK=255.255.0.0). Then click save to device.



3. PLC will receives the “DO Value (0xF9, 0x7F)” at PLC address IB25&IB26

The screenshot displays the SIMATIC Manager interface for a SIMATIC 300 station. The main window shows a Ladder Logic (LAD) program with two MOVE instructions:

- Instruction 1:** MOVE 16#000000F9 (IN, IB25) to #TEMP0 (OUT).
- Instruction 2:** MOVE 16#0000007F (IN, IB26) to #TEMP1 (OUT).

The variable declaration table for the TEMP data block is as follows:

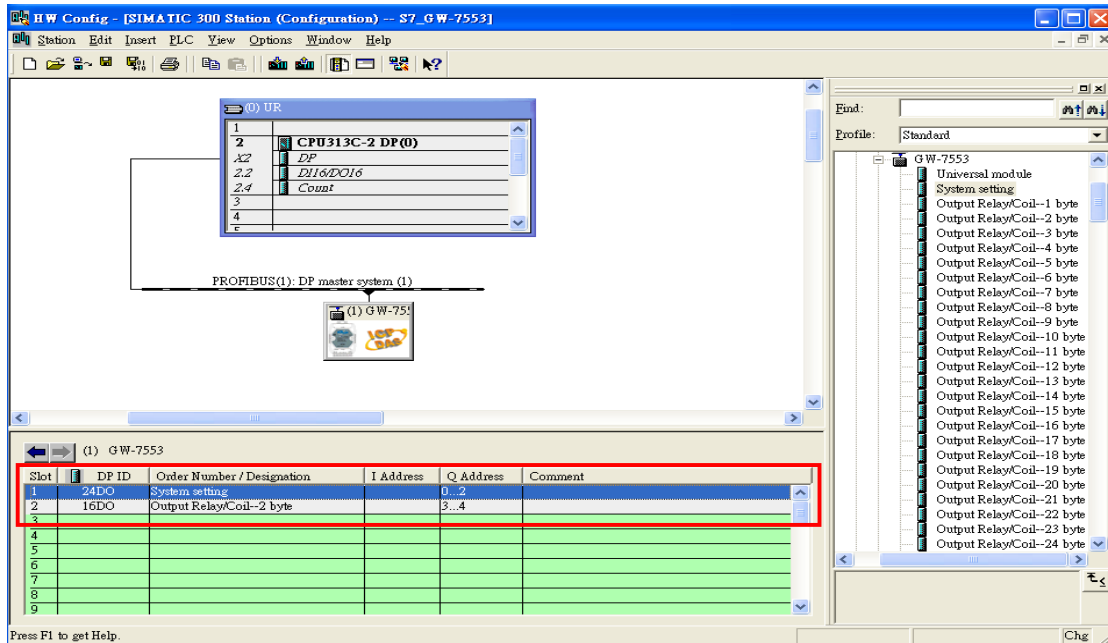
Name	Data Type	Address	Comments
OB1_OB_NUMBER	Byte	3.0	1 (Org
OB1_RESERVED_1	Byte	4.0	Reserv
OB1_RESERVED_2	Byte	5.0	Reserv
OB1_PREV_CYCLE	Int	6.0	Cycle
OB1_MIN_CYCLE	Int	8.0	Minimu
OB1_MAX_CYCLE	Int	10.0	Maximu
OB1_DATE_TIME	Date_And_Time	12.0	Date a
TEMP0	Byte	20.0	

The status bar at the bottom indicates the PLC is in **RUN** mode.

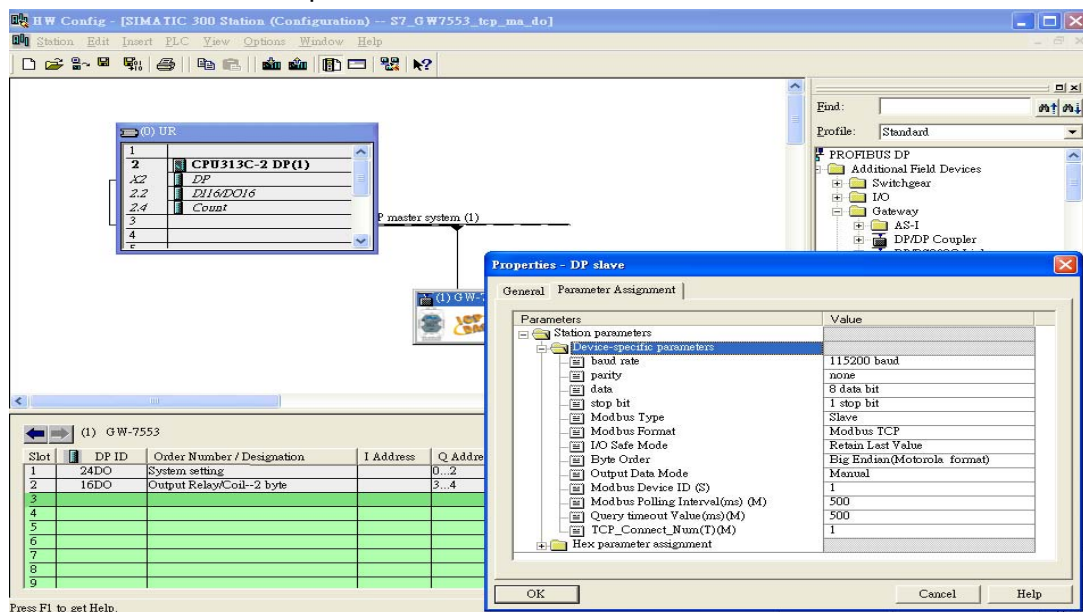
Example 2: PLC refreshes DI data to Modbus master.

SIMATIC STEP 7 Edit

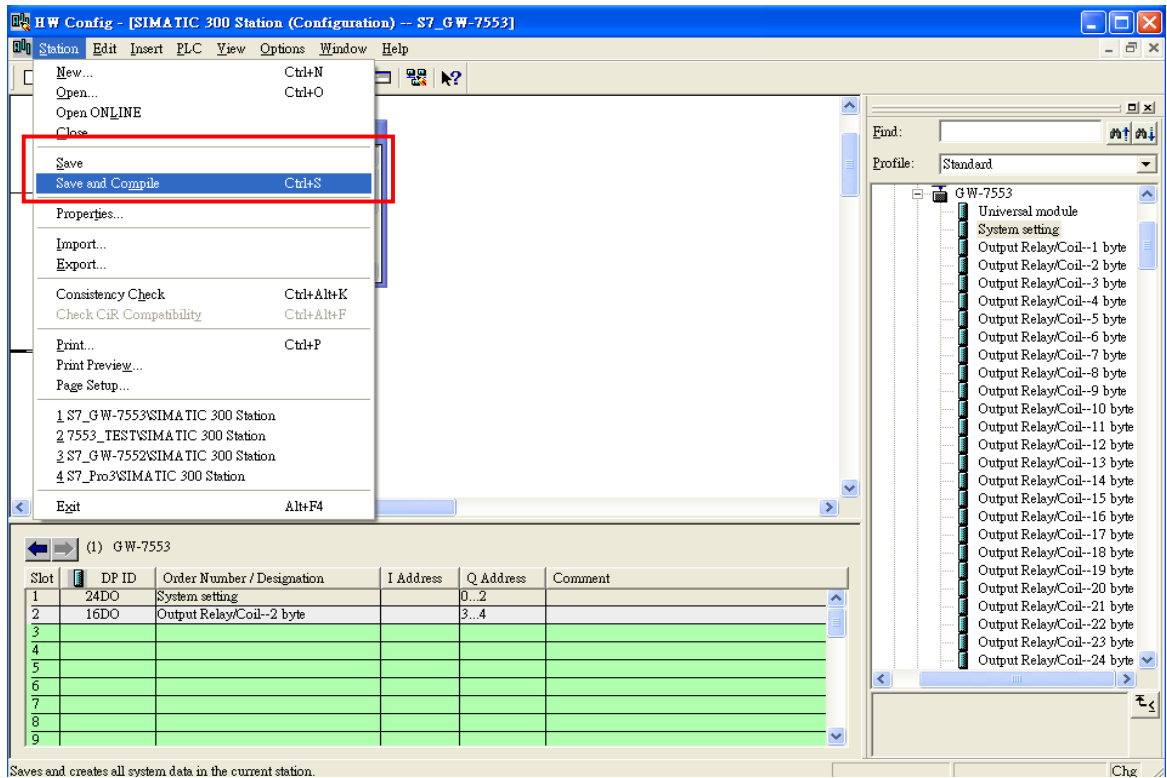
1. HW Config. – configure GW-7553 (ex: System setting module x1, Output Relay/Coil—2 byte module x1)



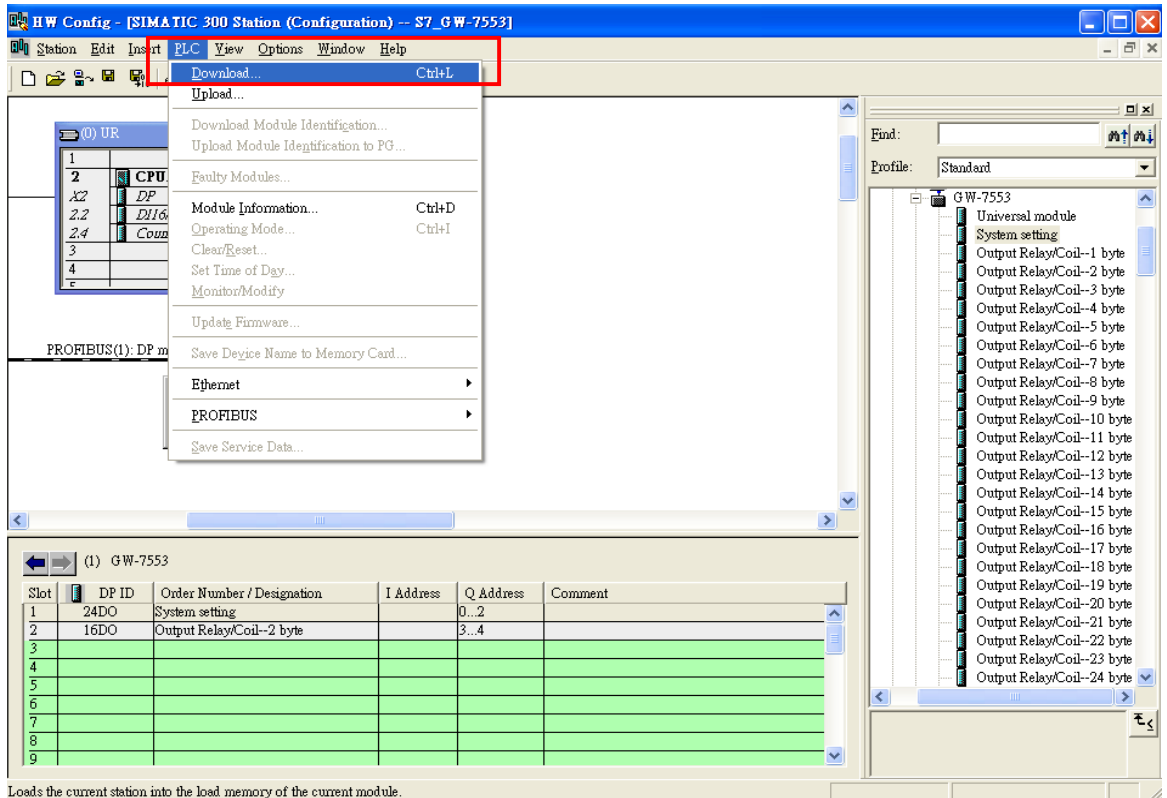
2. HW Config – Parameter assignment (ex: Com port settings, Modbus type: Slave, Modbus format: TCP, Byte Order: Big Endian). Confirm the GW-7553's Com Port setting is the same with MBTCP tool (ex: baud rate-115200, data bits-8, stop bits-1, parity-none). About the MBTCP tool, please refer to the “Communication 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:

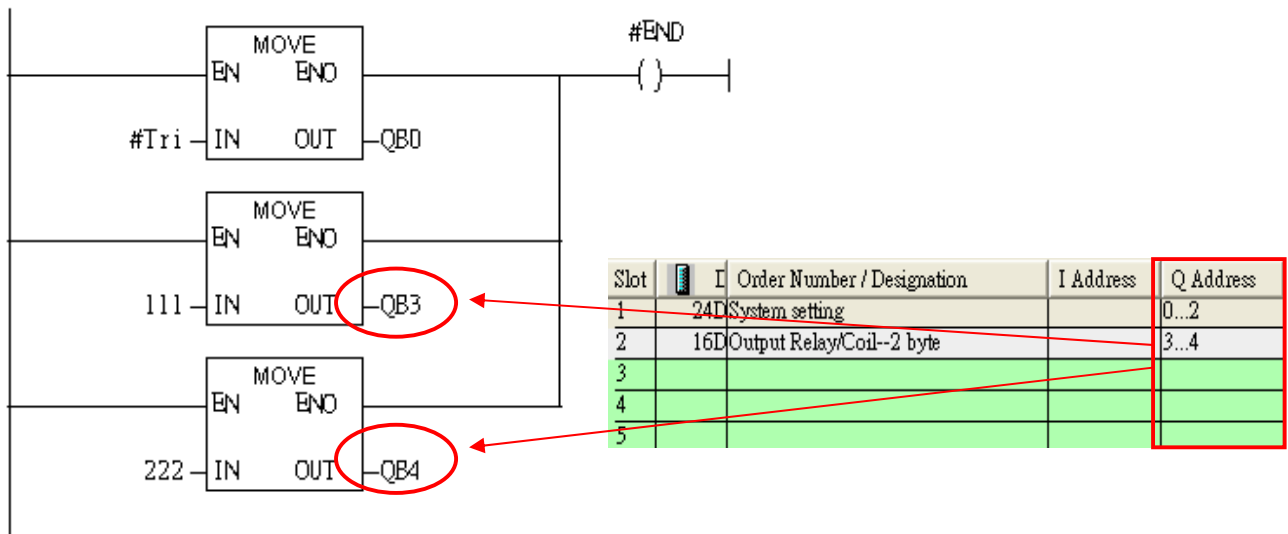
Contents Of: 'Environment\Interface\TEMP'				
	Name	Data Type	Address	Comment
OB1_MAX_CYCL	END	Bool	20.0	
OB1_DATE_TIM	Tri	Int	22.0	
END				
Tri				

OB1 : "Main Program Sweep (Cycle)"

```
PROFIBUS slave
Modbus slave
```

Network 1: QB0 add "1" refresh DO value

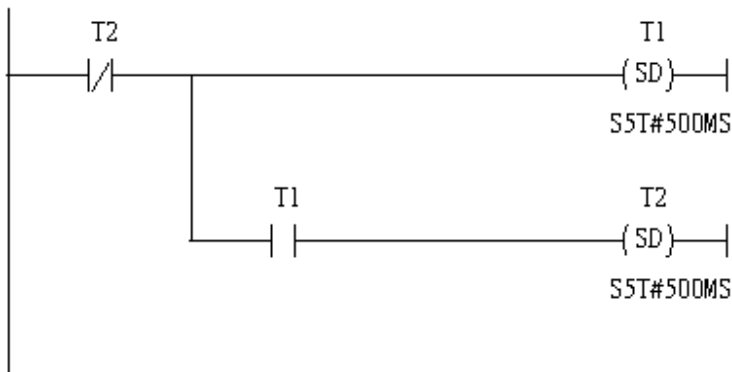
```
2 byte 16 DO
```



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

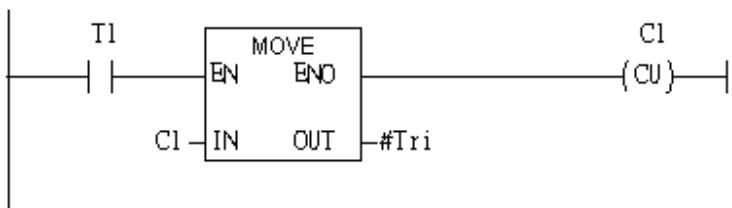
Network 2 : Timer T1 & T2

Using T2 trigger T1



Network 3 : T1 trigger Counter(C1)

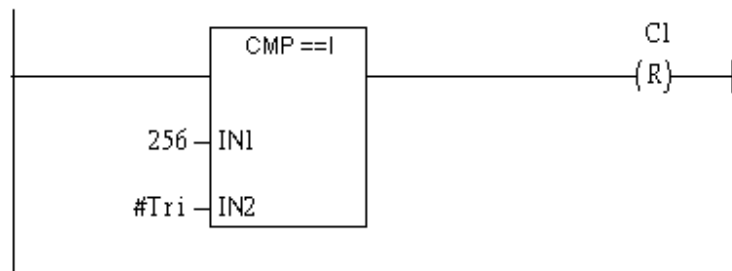
Counter(C1) add "1" and Tri add "1" , too.



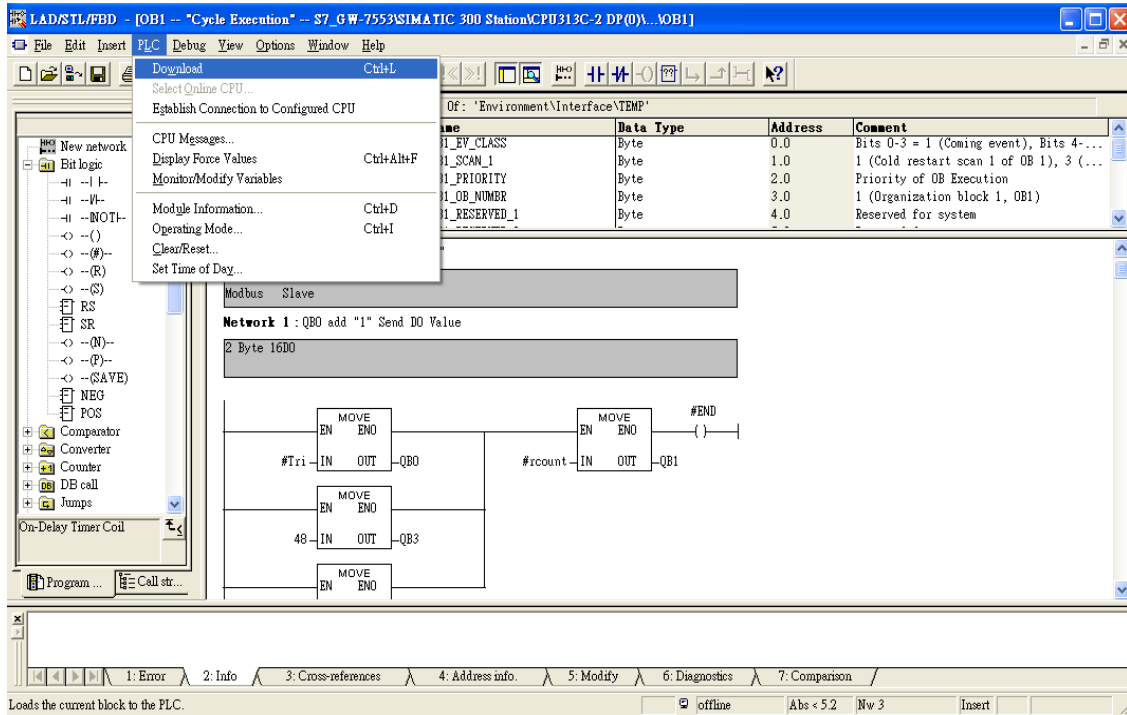
If Tri is equal to 256 then reset counter (C1)

Network 4 : Compare Tri with 256

If Tri is equal to 256 that will reset C1.



6. S7 program download

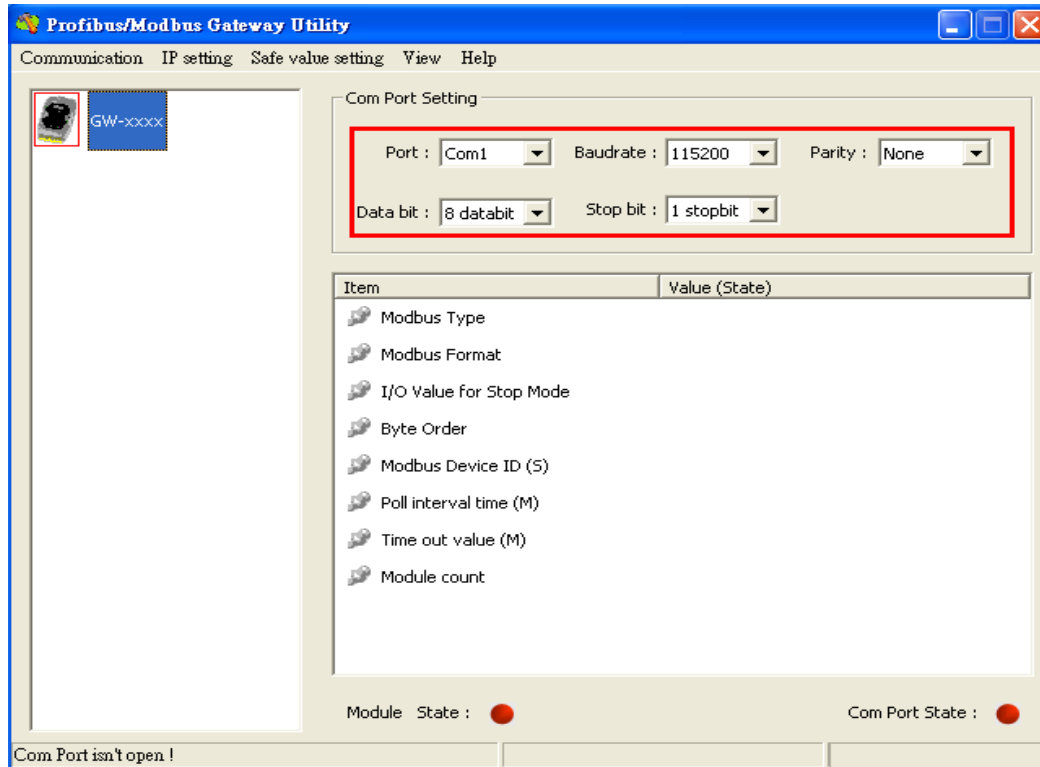


Setup IP of GW-7553 with Utility (the user can download the latest Utility at ftp://ftp.icpdas.com/pub/cd/fieldbus_cd/profibus/gateway/gw-7553/utilities/)

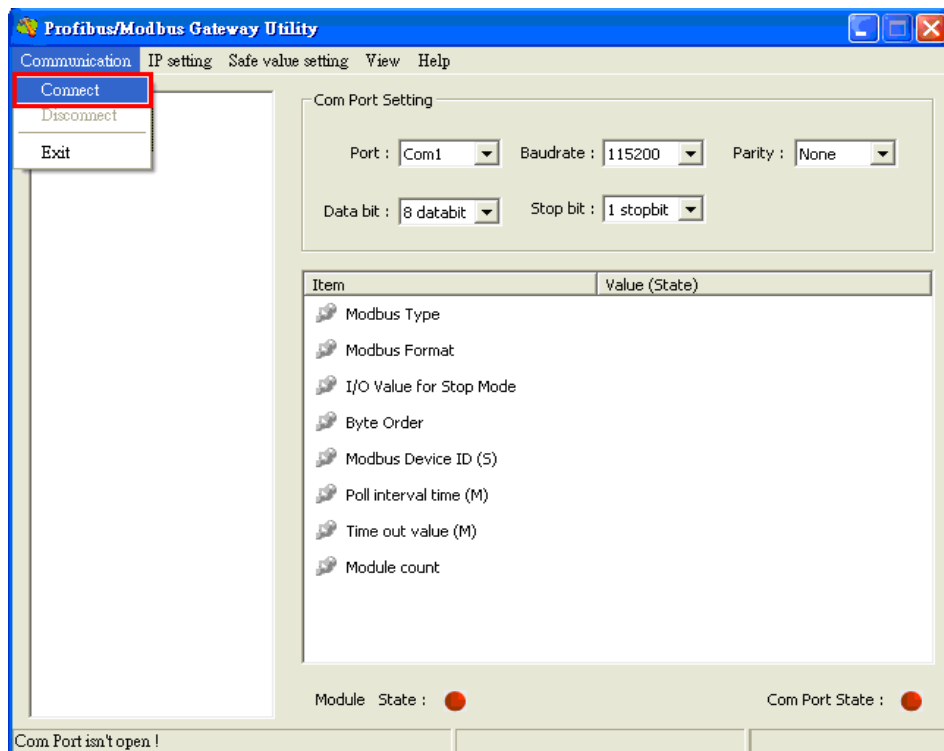
1. Before the connection, please make sure the RUN LED of the GW-7553 is on and the switch of the GW-7553 is at setting mode.



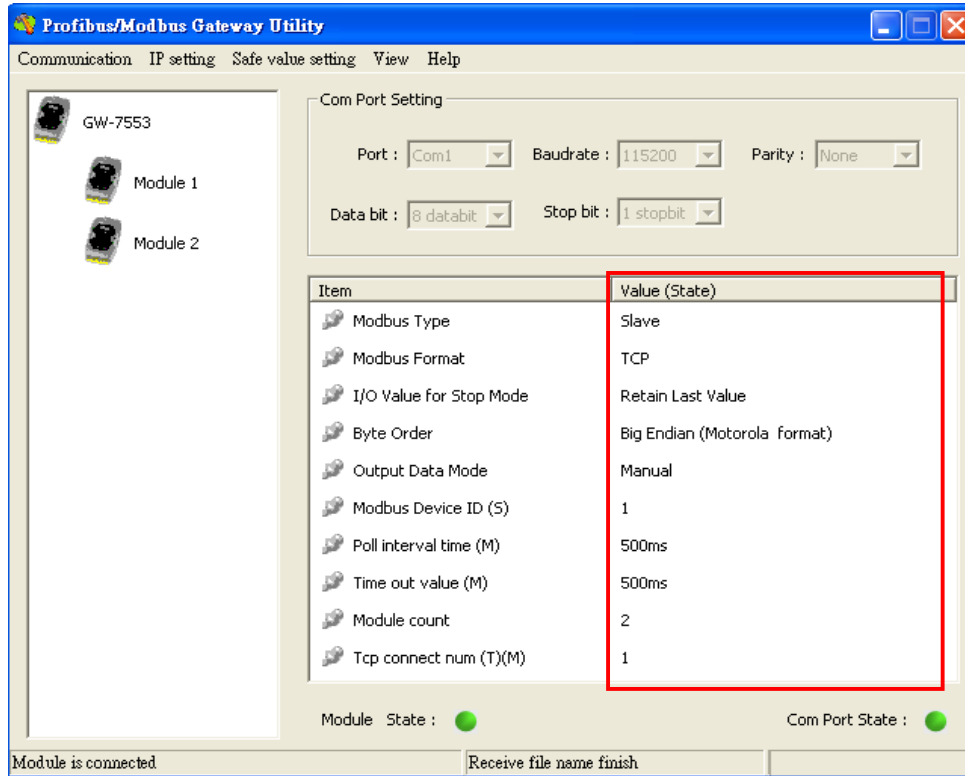
2. Set the Com Port Setting of the Utility



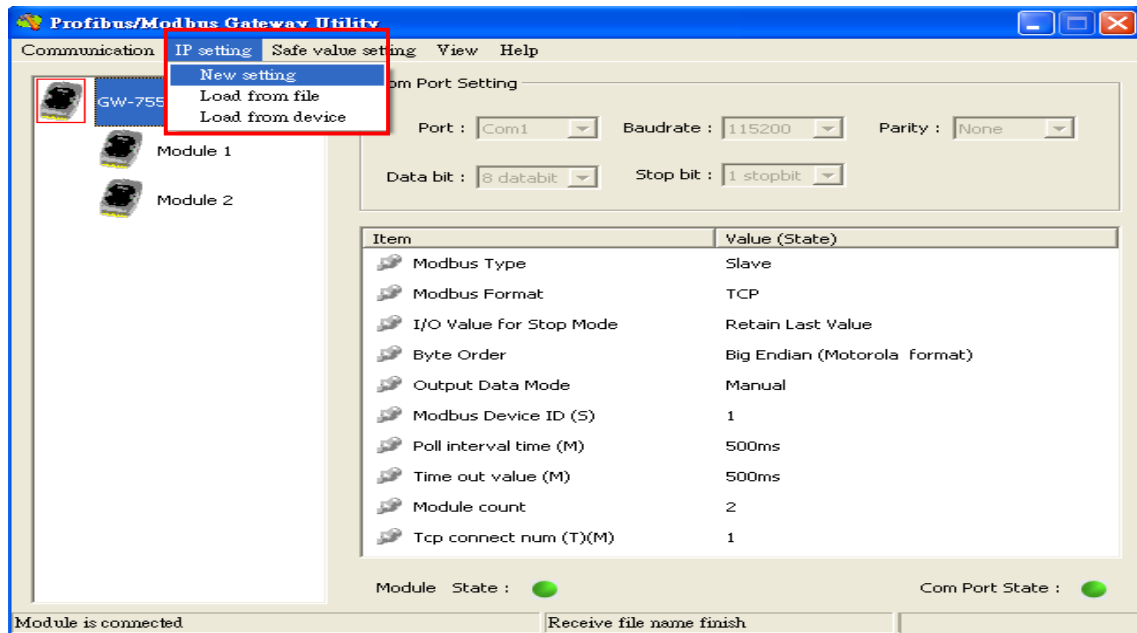
3. Click connect

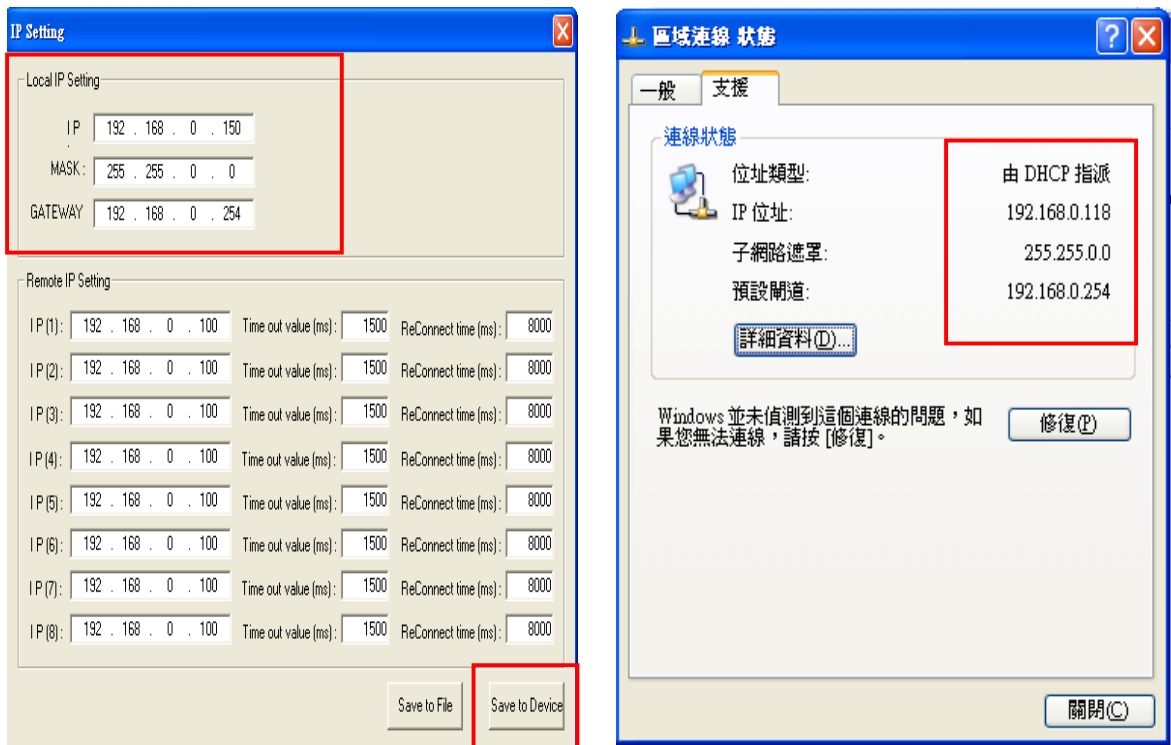


4. Connection success



5. The settings of the GW-7553 must have the same domain and different IP with the PC (ex: PC's IP=192.168.0.118, MASK=255.255.0.0; GW-7553's IP=192.168.0.150, MASK=255.255.0.0). Then click save to device.



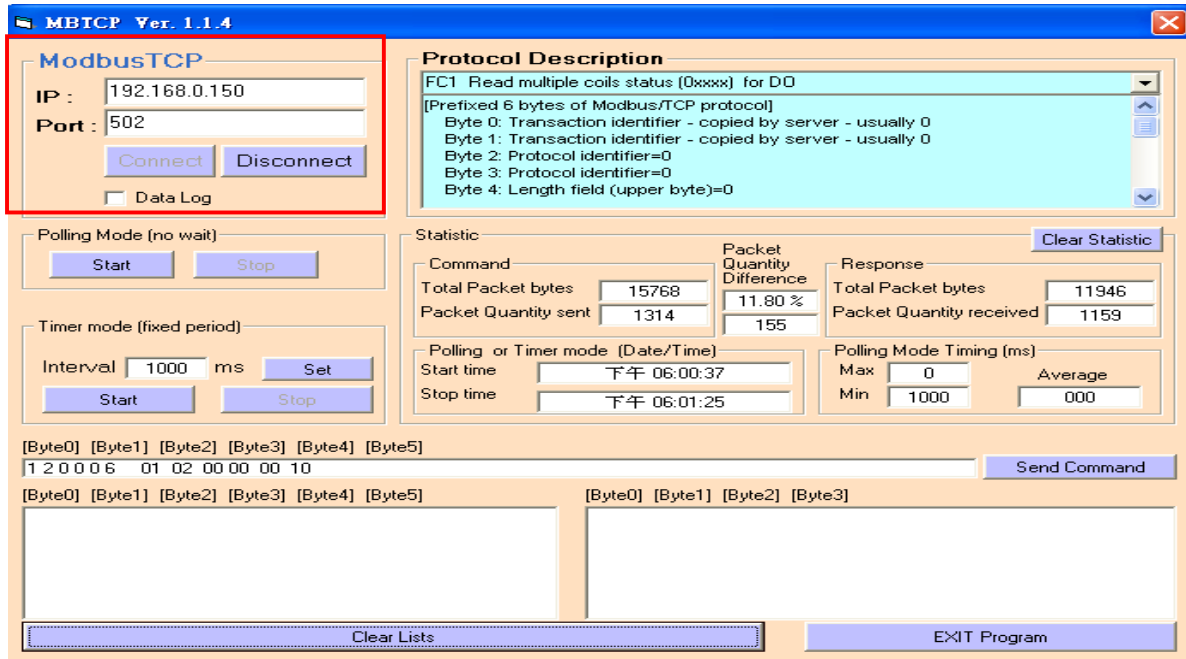


6. Make sure the RUN LED of the GW-7553 is on and the switch of the GW-7553 is at normal mode.

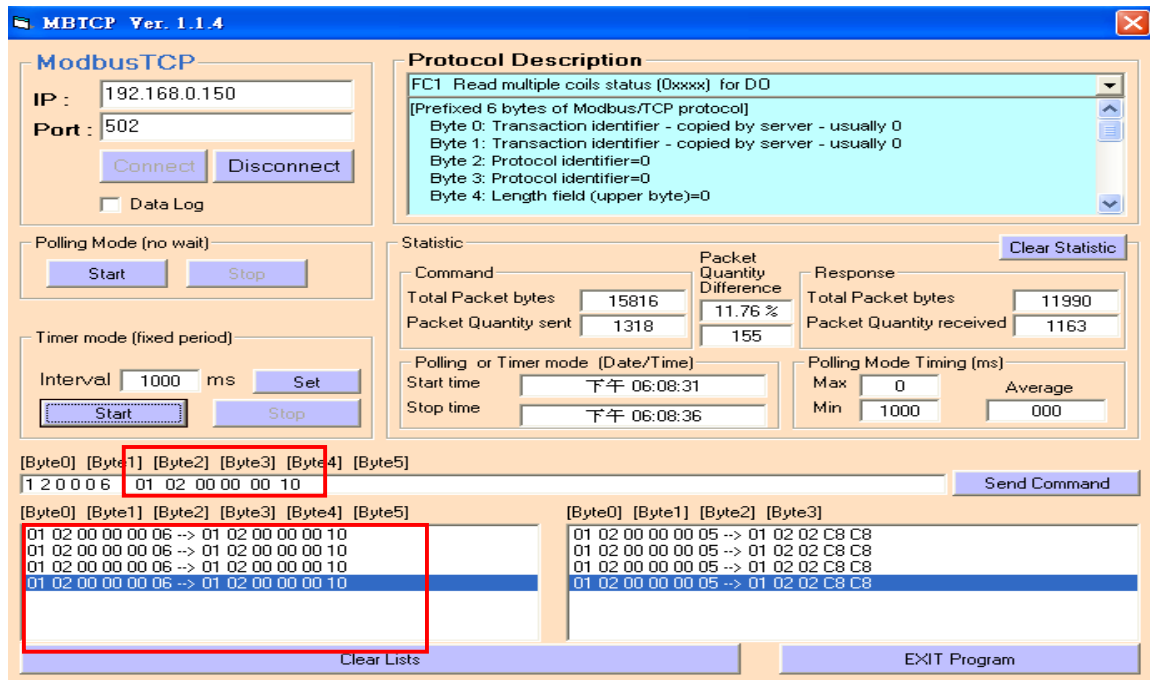


Communication test

1. Confirm the IP and Port setting of Modbus Master tool is the same with GW-7553's (you can download MBTCP from http://ftp.icpdas.com.tw/pub/cd/8000cd/napdos/modbus/modbus_utility/)



2. Input command ("01 02 00 00 00 10") in MBTCP and click <Send Command> button to send Modbus command: "01 02 00 00 00 10". 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 MBTCP 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

