

# ***GW-7552 (Modbus RTU Slave)***

## ***Example for SIMATIC STEP 7***

- 連線前置作業
- 範例 1: PLC 從Modbus master 接收 DO 資料
- 範例 2: PLC 從Modbus master 更新DI資料
- 範例 3: PLC 從Modbus master 接收AO資料
- 範例 4: PLC 從 Modbus master 更新AI資料



## 設置裝置(PLC、GW-7552)參數如下



SIMATIC PLC  
\* PROFIBUS Device **2**(Master)

### Comport Settings:

- Baud rate:115200
- Data bit: 8
- Stop bit : 1
- Parity: None
- Byte order: Big Endian



GW-7552  
• PROFIBUS Device **6** (Slave)  
• Modbus Device **99** (RTU Slave)



## 新增一個PROFIBUS 連線並新增一個GW-7552模組

HW Config - [SIMATIC 300 Station (Configuration) -- S7\_Pro2]

Station Edit Insert PLC View Options Window Help

Find: 7552 Profile: Standard

Output Relay/  
Output Relay/  
Input Relay/C  
Input Relay/C  
Input Relay/C  
Input Relay/C  
Input Relay/C  
Input Relay/C  
Input Relay/C  
Input Relay/C  
Input Relay/C  
Input Relay/C  
Input Relay/C  
Input Relay/C  
Input Relay/C  
Input Relay/C

PROFIBUS(1): DP master system (1)

(2) GW-7552

SIMATIC 300 Station

Slot	Designation
0	UR
PROFIBUS(1): DP master system (1)	DP master system (1)

Press F1 to get Help. Chg



## 設置PLC 在PROFIBUS 端的位址 如下



SIMATIC PLC  
\* PROFIBUS Device 2 (Master)

1. 雙擊 DP 圖示
2. 點選“Properties”
3. 更改PROFIBUS 位址
4. 點選 OK

The screenshot shows the SIMATIC Manager software interface. The main window displays the hardware rack configuration for a SIMATIC PLC. The selected module is 'CPU313 C-2 DP(1)'. The 'DP' module is highlighted, and its properties are being configured in the 'Properties - PROFIBUS interface DP (R0/S2.1)' dialog box. The 'Address' field is set to 2, which is highlighted with a red box. The 'Subnet' field is set to 'PROFIBUS(1)'. The 'Transmission rate' is set to 1.5 Mbps. The 'OK' button is visible at the bottom of the dialog box.

Module	Order	Address	Subnet
CPU313 C-2 DP(1)	6ES7 313-1CG03-0AB0	2	PROFIBUS(1)
DP		1023*	
DI16/DO16		124...125	124...125



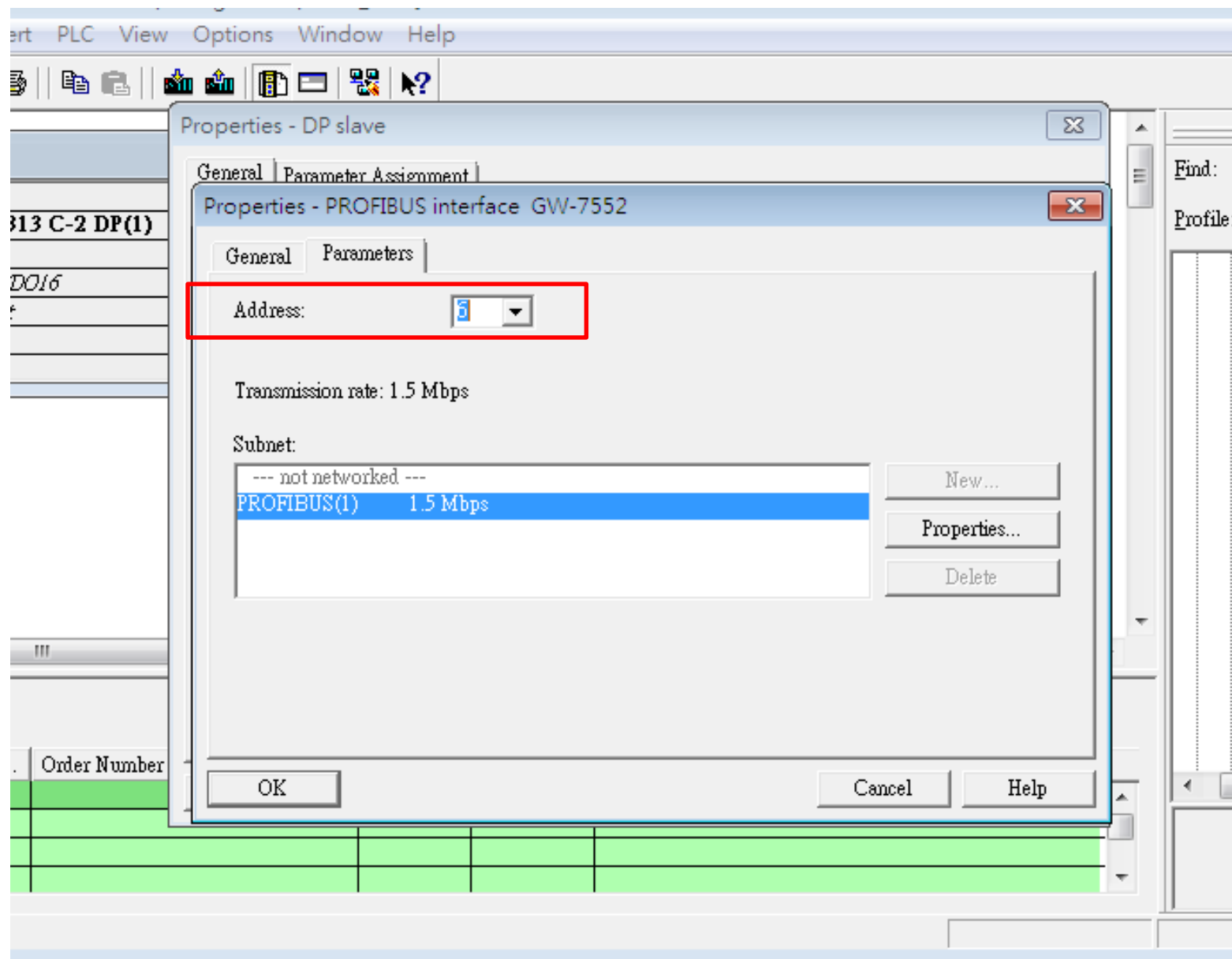
## 設置 GW-7552 在PROFBUS的位址



### GW-7552

- PROFIBUS Device **6** (Slave)
- Modbus Device **99** (RTU Master)

1. 雙擊GW7552 圖示
2. 點選 PROFIBUS
3. 更改位址
4. 點選 OK





## 設置Gw-7552 comport 如下



- Comport Settings:
- Baudrate:115200
  - Data bit: 8
  - Stop bit : 1
  - Parity: None
  - Byte order: Big Endian
  - Output Data Mode : Auto
  - Modbus Device ID (S) :99

1. 雙擊 GW7552 圖示
  2. 點選Parameter Assignment
  3. 修正  
 Modbus Type : Slave  
 Byte order: big Endian  
 Output Data Mode : Auto  
 Modbus Device ID: 99
  4. 點選“OK”
- 可以在此修正參數

The screenshot shows a software interface for configuring a DP slave. A tree view on the left shows the hierarchy: 'Station parameters' > 'Device-specific parameters'. The 'Properties - DP slave' dialog box is open, with the 'Parameter Assignment' tab selected. It contains a table of parameters and their values.

Parameters	Value
Station parameters	
Device-specific parameters	
baud rate	115200 baud
parity	none
data	8 data bit
stop bit	1 stop bit
Modbus Type	Slave
Modbus Format	Modbus RTU
I/O Safe Mode	Retain Last Value
Byte Order	Big Endian(Motorola format)
Output Data Mode	Auto
Modbus Device ID (S)	99
Modbus Polling Interval(ms) (M)	500
Query timeout Value(ms)(M)	500
Hex parameter assignment	

Buttons: OK, Cancel, Help

1  
2  
3  
4  
5  
6  
7  
8  
9  
1  
1

確定GW-7552 背後的指撥開關為 Normal模式

Refer to [GW-7552 user manual](#) 2.6



更改指撥以設置PROFIBUS的位址  
設置GW-7552 在PROFIBUS端連線位置為6

Refer to to [GW-7552 user manual 2.4](#)

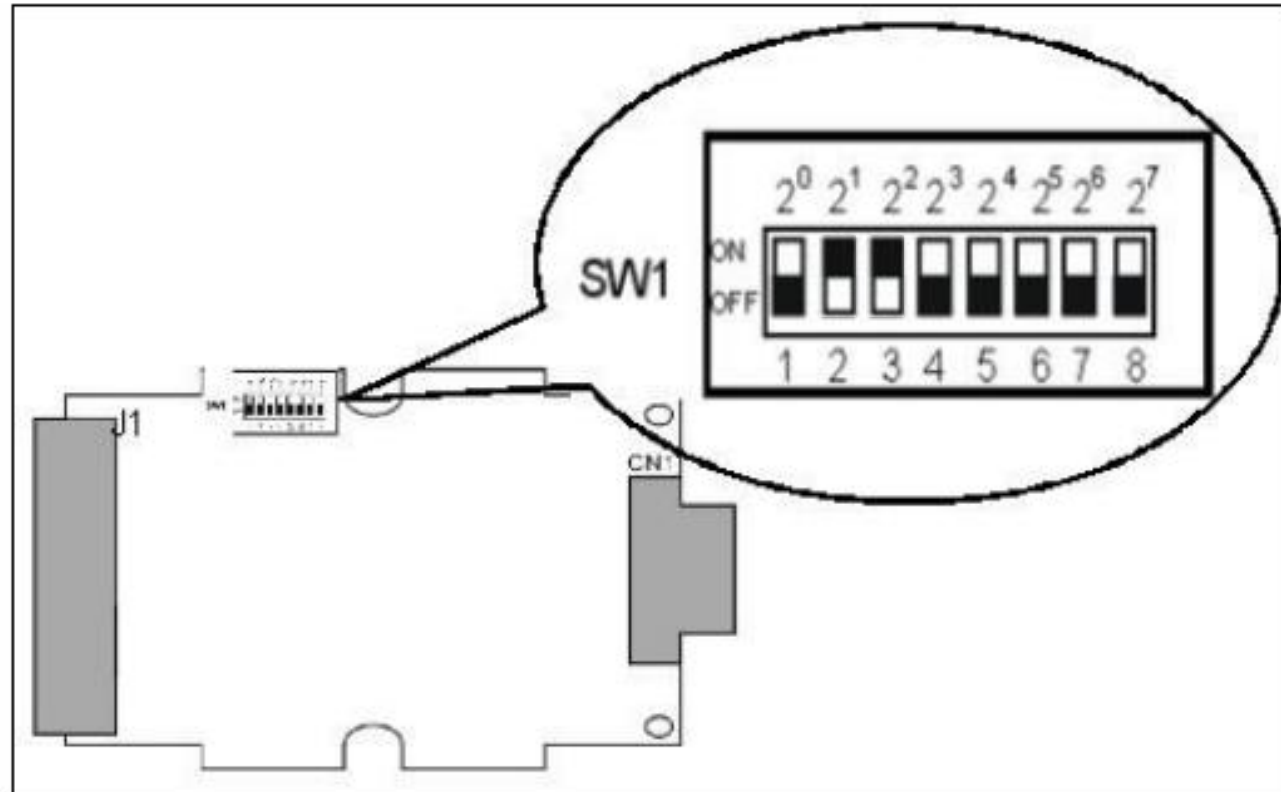
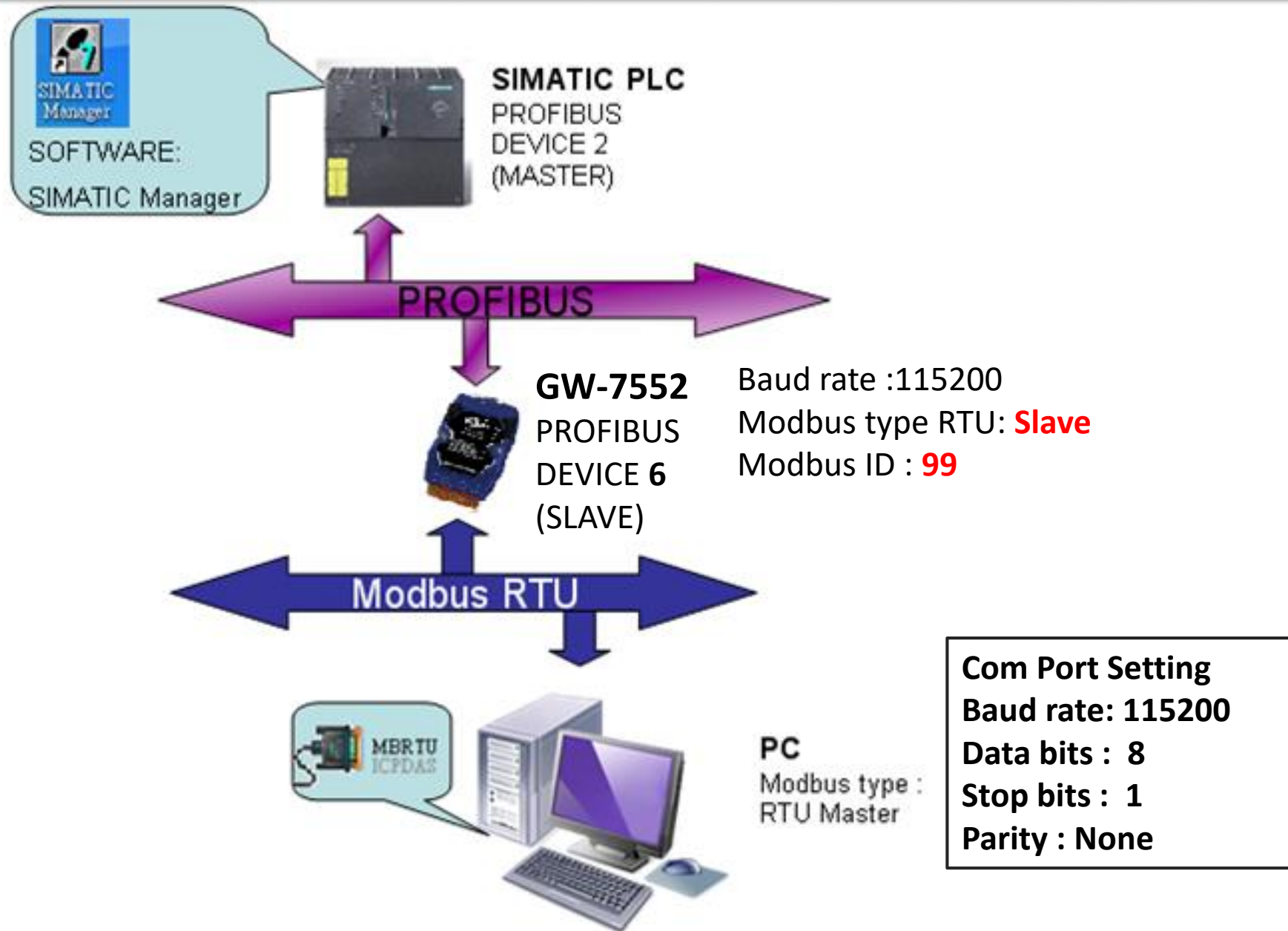


Figure 12: DIP switch



# PLC 從 Modbus master 接收 DO 資料



# PLC 從 Modbus master 接收 DO 資料



HW Config - [SIMATIC 300 Station (Configuration) -- S7\_Pro2]

Station Edit Insert PLC View Options Window Help

2 CPU313 C-2 DP(1)  
X2 DP  
2.2 DI16/DO16  
2.4 Count  
3  
4

BUS(1): DP master system (1)

(1) 選擇 GW-752 模組

(2) 雙擊  
1. "System setting module"  
2. "Input Relay/Coil - - 10 byte"

Find: 7552  
Profile: Standard

Output Relay/  
Input Relay/C  
Input Relay/C  
Input Relay/C  
Input Relay/C  
Input Relay/C  
Input Relay/C  
Input Relay/C  
Input Relay/C  
Input Relay/C  
Input Relay/C  
Input Relay/C  
Input Relay/C  
Input Relay/C  
Input Relay/C  
Input Relay/C  
Input Relay/C  
Input Relay/C  
Input Relay/C  
Input Relay/C

(6) GW-7552

Slot	DP ID	...	Order Number / Designation	I Address	Q Address	Comment
1	24DO		System setting		0...2	
2	32DI		--> System setting	0...3		
3	25		Input Relay/Coil--10 byte	4...13		
4						

Slot is occupied, module is too wide, or the functionality of the inserted module is not transferable to the new module

Chg

# PLC 從 Modbus master 接收 DO 資料



HW Config - [SIMATIC 300 Station (Configuration) -- S7\_Pro2]

Station Edit Insert PLC View Options Window Help

New... Ctrl+N  
Open... Ctrl+O  
Open ONLINE  
Close  
Save  
**Save and Compile**  
Properties...  
Import...  
Export...  
Consistency Check Ctrl+Alt+K  
Check CiR Compatibility Ctrl+Alt+F  
Print... Ctrl+P  
Print Preview...  
Page Setup...  
1 S7\_Pro2\SIMATIC 300 Station  
2 S7\_Pro1\SIMATIC 300 Station  
3 S7\_Pro4\SIMATIC 300 Station  
4 S7\_Pro3\SIMATIC 300 Station  
Exit Alt+F4

Find: 7552  
Profile: Standard

Output Relay/  
Input Relay/C  
Input Relay/C  
Input Relay/C  
Input Relay/C  
Input Relay/C  
Input Relay/C  
Input Relay/C  
Input Relay/C  
Input Relay/C  
Input Relay/C  
Input Relay/C  
Input Relay/C  
Input Relay/C  
Input Relay/C  
Input Relay/C  
Input Relay/C  
Input Relay/C  
Input Relay/C

Address	Q Address	Comment
	0...2	
3		
13		

Saves and creates all system data in the current station.

Chg

# PLC 從 Modbus master 接收 DO 資料



HW Config - [SIMATIC 300 Station (Configuration) -- S7\_Pro2]

Station Edit Insert **PLC** View Options Window Help

Download... Ctrl+L

Upload...

Download Module Identification...

Upload Module Identification to PG...

Faulty Modules...

Module Information... Ctrl+D

Operating Mode... Ctrl+I

Clear/Reset...

Set Time of Day...

Monitor/Modify

Update Firmware...

Save Device Name to Memory Card...

Ethernet

PROFIBUS

Save Service Data...

Find: 7552

Profile: Standard

Slot	DP ID	...	...	...	Comment
1	24DO		System setting	0...2	
2	32DI		--> System setting	0...3	
3	25		Input Relay/Coil--10 byte	4...13	
4					

Loads the current station into the load memory of the current module.

Chg

點選"Download to PLC"

# PLC 從 Modbus master 接收 DO 資料



The screenshot shows the SIMATIC Manager interface for a project named S7\_Pro2. The left-hand tree view shows the project structure: S7\_Pro2 -- C:\Program Files\Siemens\Step7\s7proj\S7\_Pro2, SIMATIC 300 Station, CPU313 C-2 DP(1), S7 Program(1), Sources, and Blocks. The main workspace displays a variable declaration table with the following entries:

System data	OB1	OB82	OB86	VAT_1

The 'VAT\_1' entry is highlighted with a red box. A context menu is open over the 'VAT\_1' entry, with the 'Insert New Object' option selected. The 'Insert New Object' submenu is also open, showing the following options:

- Organization Block
- Function Block
- Function
- Data Block
- Data Type
- Variable Table

The 'Variable Table' option is highlighted in blue. A red text box with the Chinese text '建立變數表並雙擊變數表' (Create variable table and double-click variable table) is overlaid on the workspace.

Inserts Variable Table at th

# PLC 從 Modbus master 接收 DO 資料



HW Config - [SIMATIC 300 Station (Configuration) -- S7\_Pro2]

Station Edit Insert PLC View Options Window Help

CPU 313 C-2 DP (1)

BUS(1): DP master system (1)

(6) GW-752

(6) GW-7552

Slot DP ID ... Order Number / Designation I Address Q Address Comment

Slot	DP ID	...	Order Number / Designation	I Address	Q Address	Comment
1	24DO		System setting		0...2	
2	32DI		--> System setting	0...3		
3	25		Input Relay/Coil--10 byte	4...13		
4						

1. 輸入對應的PROFIBUS位址  
2. 點選“Monitor”按鈕

Var - [VAT\_1 -- S7\_Pro2\SIMATIC 300 St...]

Table Edit Insert PLC Variable View Options Window Help

	Address	Symbol	Display format	Status value	Modify value
1	IB 4		HEX		
2	IB 5		HEX		
3	IB 6		HEX		
4	IB 7		HEX		
5	IB 8		HEX		
6	IB 9		HEX		
7	IB 10		HEX		
8	IB 11		HEX		
9	IB 12		HEX		
10	IB 13		HEX		
11					

Press F1 for help.

Press F1 to get Help.



## 連線測試

確認 GW-7552 的 Comport 設定與 Modbus Master Tool 相同

(ex: MBRTU, MBRTU 下載：[http://ftp.icpdas.com.tw/pub/cd/8000cd/napdos/modbus/modbus\\_utility/](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

The screenshot shows the MBRTU V. 1.0.9 COM1 software interface. The window title is "MBRTU V. 1.0.9 COM1".

**COM Status:** COM1, 115200, Line control: N,8,1. Buttons: Open, Close.

**Protocol Description:** FC15 Force multiple coils (0xxxx) for DO. [Request] details: Byte 0: Net ID (Station number), Byte 1: FC=0F (hex), Byte 2-3: Reference number, Byte 4-5: Bit count, Byte 6: Byte count (B=(bit count + 7)/8).

**Polling Mode (No Waiting):** Timeout: 200 ms. Buttons: Start, Stop.

**Timer Mode (Fixed Period):** Interval: 50 ms. Buttons: Start, Stop.

**Statistics:** Clear Statistics button. Commands: Current Packet Size (Bytes) 8, Total Packet Size (Bytes) 0, Packet Quantity Sent 0. Responses: Current Packet Size (Bytes) 7, Total Packet Size (Bytes) 0, Packet Quantity Received 0. Difference in Packet Quantity: 0.

**Timing:** Start Time: Time Start, Stop Time: Time Stop. Polling Mode Timing (ms): Max 000, Min 100, Average 000.

**Command:** 1 4 0 0 1. Send Command button.

**Include CRC:**  Include CRC.

**Clear Lists** and **Exit Program** buttons at the bottom.

# PLC 從 Modbus master 接收 DO 資料



MBRTU V. 1.0.9 COM1

**COM Status**  
COM1  
Line Control: N,8,1  
Open Close

**Protocol Description**  
FC15 Force multiple coils (0xxxx) for DO  
[Request]  
Byte 0: Net ID (Station number)  
Byte 1: FC=0F (hex)  
Byte 2-3: Reference number  
Byte 4-5: Bit count  
Byte 6: Byte count (B=(bit count + 7)/8)

**Statistics**  
Clear Statistics  
Commands: Current Packet Size (Bytes) 8, Total Packet Size (Bytes) 19, Packet Quantity 0  
Responses: Current Packet Size (Bytes) 8, Total Packet Size (Bytes) 8, Packet Quantity Received 1

**Modbus FCOF 格式**  
資料

**1. 輸出指令**  
Command: 63 0f 00 00 00 50 0a 11 22 33 44 55 66 77 88 99 aa  
Send Command

**2. 收到之資料**  
Responses: 63 0f 00 00 00 50 5d b5  
Gw-7552 Modbus ID :99

Clear Lists Exit Program

Var - [VAT\_1 -- @S7\_Pro2\SIMATIC 300 Station\CPU...

Table Edit Insert PLC Variable View Options Window Help

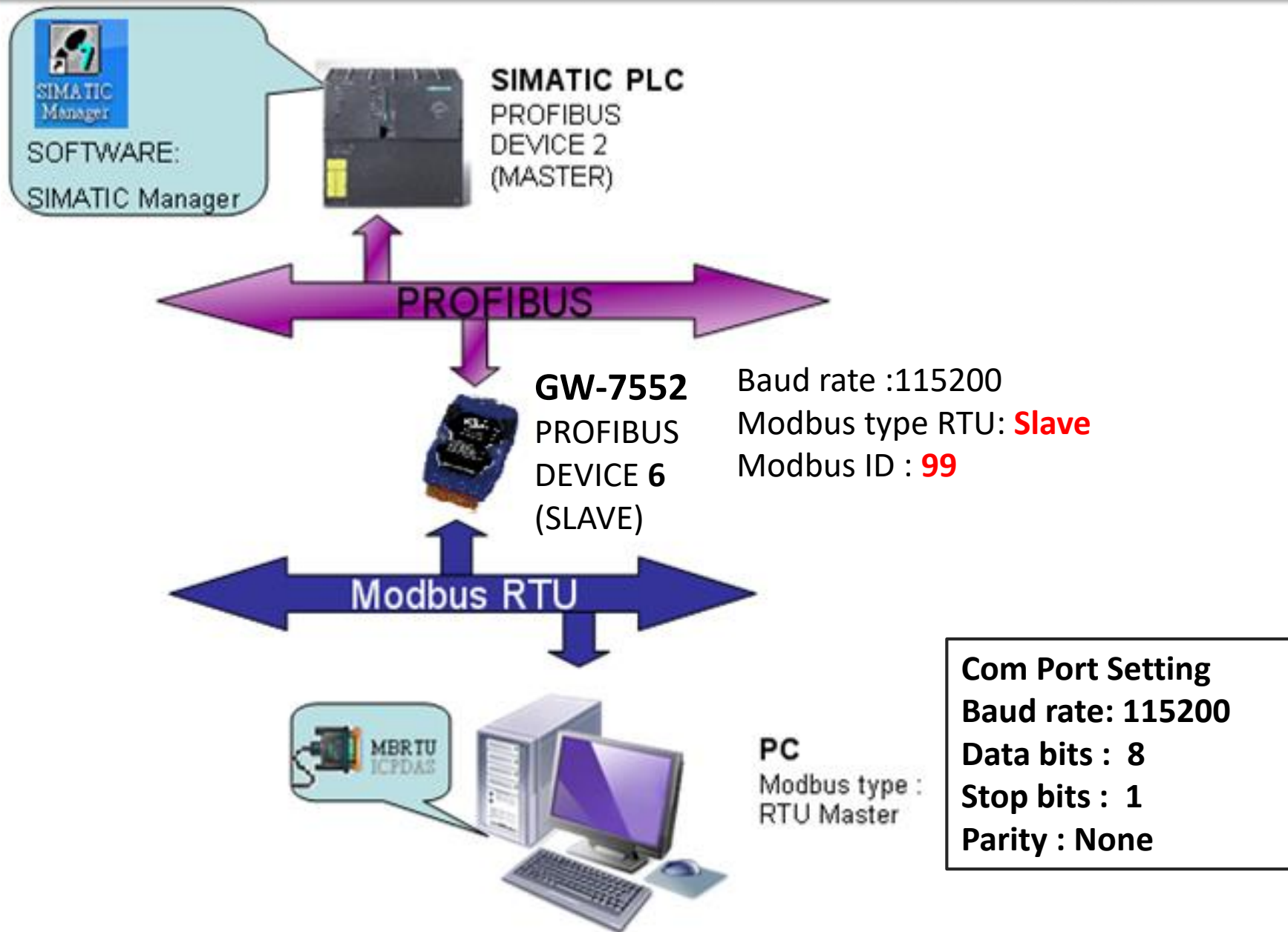
	Address	Symbol	Display format	Status value	Modify value
1	IB 4		HEX	B#16#11	
2	IB 5		HEX	B#16#22	
3	IB 6		HEX	B#16#33	
4	IB 7		HEX	B#16#44	
5	IB 8		HEX	B#16#55	
6	IB 9		HEX	B#16#66	
7	IB 10		HEX	B#16#77	
8	IB 11		HEX	B#16#88	
9	IB 12		HEX	B#16#99	
10	IB 13		HEX	B#16#AA	
11					

S7\_Pro2\SIMATIC 300 Station\...\S7 Program(1)

User can receive DO data in IB4~IB13



# PLC 從 Modbus master 接收 AO 資料



# PLC從Modbus master 接收 AO 資料



(1)選擇GW-7552 模組

(2)雙擊  
1. “System setting module”  
2. “Input Register - - 5 word”

Slot	DP ID	Order Number / Designation	I Address	Q Address	Comment
1	24DO	System setting		0...2	
2	32DI	--> System setting	0...3		
3	5AI	Input Register--5 word	256...265		
4					

# PLC 從 Modbus master 接收 AO 資料



HW Config - [SIMATIC 300 Station (Configuration) -- S7\_Pro2]

Station Edit Insert PLC View Options Window Help

New... Ctrl+N  
Open... Ctrl+O  
Open ONLINE  
Close  
Save  
**Save and Compile Ctrl+S**  
Properties...  
Import...  
Export...  
Consistency Check Ctrl+Alt+K  
Check CiR Compatibility Ctrl+Alt+F  
Print... Ctrl+P  
Print Preview...  
Page Setup...  
1 S7\_Pro2\SIMATIC 300 Station  
2 S7\_Pro1\SIMATIC 300 Station  
3 S7\_Pro4\SIMATIC 300 Station  
4 S7\_Pro3\SIMATIC 300 Station  
Exit Alt+F4

Find: 7552  
Profile: Standard

Output Register  
Output Register  
Output Register  
Output Register  
Output Register  
Input Register  
Input Register  
Input Register  
Input Register  
Input Register  
Input Register  
Input Register  
Input Register  
Input Register  
Input Register  
Input Register  
Input Register  
Input Register  
Input Register

Address	Q Address	Comment
	0...2	
3		
5...265		

Saves and creates all system data in the current station.

Chg

點選"Save and Compile"

# PLC 從 Modbus master 接收 AO 資料



The screenshot shows the SIMATIC Manager HW Config interface for a SIMATIC 300 Station. The 'PLC' menu is open, and the 'Download to PLC' option is highlighted with a red box and the text '點選"Download to PLC"'. The hardware rack configuration is visible on the left, and the DP ID table is at the bottom.

Slot	DP ID	...	...	...	Comment
1	24DO	...	System setting	0...2	
2	32DI	...	--> System setting	0...3	
3	5AI	...	Input Register--5 word	256...265	
4					

Loads the current station into the load memory of the current module.

# PLC 從 Modbus master 接收 AO 資料



SIMATIC Manager - S7\_Pro2

File Edit Insert PLC View Options Window Help

S7\_Pro2 -- C:\Program Files\Siemens\Step7\s7proj\S7\_Pro2

System data OB1 OB82 OB86 VAT\_1

S7\_Pro2

- SIMATIC 300 Station
  - CPU313 C-2 DP(1)
    - S7 Program(1)
      - Sources
      - Blocks

Cut Ctrl+X

Copy Ctrl+C

Paste Ctrl+V

Delete Del

Insert New Object

- Organization Block
- Function Block
- Function
- Data Block
- Data Type
- Variable Table

Rewire...

Compare Blocks...

Reference Data

Check Block Consistency...

Print

Rename F2

Object Properties... Alt+Return

Special Object Properties

Inserts Variable Table

新建變數表並雙擊變數表

# PLC從Modbus master 接收 AO 資料



HW Config - [SIMATIC 300 Station (Configuration) -- S7\_Pro2]

Station Edit Insert PLC View Options Window Help

(0) UR

1	
2	CPU313 C-2 DP(1)
X2	DP
2.2	DI16/DO16
2.4	Count
3	
4	

(6) GW-752

(6) GW-7552

Slot	DP ID	Order Number / Designation	I Address	Q Address	Comment
1	24DO	System setting		0...2	
2	32DI	--> System setting	0...1		
3	5AI	Input Register--5 word	256...265		
4					

1. 輸入所對應PROFIBUS的位址  
2. Click "Monitor" button

Var - [VAT\_1 -- @S7\_Pro2\SIMATIC 300 Station\CPU...

Table Edit Insert PLC Variable View Options Window Help

	Address	Symbol	Display format	Status value	Modify value
1	PIW 256		HEX	W#16#0000	
2	PIW 258		HEX	W#16#0000	
3	PIW 260		HEX	W#16#0000	
4	PIW 262		HEX	W#16#0000	
5	PIW 264		HEX	W#16#0000	
6					

S7\_Pro2\SIMATIC 300 Station\...\S7 Program(1)

Press F1 to get Help.



## 連線測試

確認 GW-7552的Comport設定與 Modbus Master Tool相同

(ex: MBRTU, MBRTU 下載：[http://ftp.icpdas.com.tw/pub/cd/8000cd/napdos/modbus/modbus\\_utility/](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

The screenshot shows the MBRTU V. 1.0.9 COM1 software interface. The window title is "MBRTU V. 1.0.9 COM1".

**COM Status:** COM1, 115200, Line control: N,8,1. Buttons: Open, Close.

**Protocol Description:** FC16 Write multiple registers (4xxxx) for AO. [Request] details: Byte 0: Net ID (Station number), Byte 1: FC=10 (hex), Byte 2-3: Reference number, Byte 4-5: Word count, Byte 6: Byte count (B=2 x word count).

**Polling Mode (No Waiting):** Timeout: 200 ms. Buttons: Start, Stop.

**Timer Mode (Fixed Period):** Interval: 50 ms. Buttons: Start, Stop.

**Statistics:** Clear Statistics button. Commands: Current Packet Size (Bytes) 8, Total Packet Size (Bytes) 0, Packet Quantity Sent 0. Responses: Current Packet Size (Bytes) 7, Total Packet Size (Bytes) 0, Packet Quantity Received 0. Difference in Packet Quantity: 0.

**Timing:** Start Time: Time Start, Stop Time: Time Stop. Polling Mode Timing (ms): Max 000, Min 100, Average 000.

**Command:** 1 4 0 0 1. Send Command button.

**Include CRC:** Checked.

**Clear Lists** and **Exit Program** buttons at the bottom.

# PLC 從 Modbus master 接收 AO 資料



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

**Protocol Description**  
FC16 Write multiple registers (4xxxx) for AO  
[Request]  
Byte 0: Net ID (Station number)  
Byte 1: FC-16 (hex)  
Byte 2-3: Reference number  
Byte 4-5: Word count  
Byte 6: Byte count (B=2 x word count)

**Statistics**  
Clear Statistics

**Commands**  
Current Packet Size (Bytes) 8  
Total Packet Size (Bytes) 13  
Packet Quantity Sent 1

**Difference in Packet Quantity** 0

**Responses**  
Current Packet Size (Bytes) 8  
Total Packet Size (Bytes) 8  
Packet Quantity Received 1

**Polling Mode (No Waiting)**  
Timeout 200 ms  
Start Stop

**Timer Mode (Fixed Period)**  
Start Stop

**Send Command**

**Commands**  Include CRC  
63 10 00 01 00 02 04 11 22 33 44 76 2F

**Responses**  
63 10 00 01 00 02 18 4A

Clear Lists Exit Program

1. 傳送命令以寫入 AO 的值  
( 0x1122, 0x3344 )

63 10 00 01 00 02 04 11 22 33 44

63 10 00 01 00 02 18 4A

GW-7552 modbus address 99

2. 收到資料

Var - [VAT\_1 -- @S7\_Pro2\SIMATIC 300 Stati...]

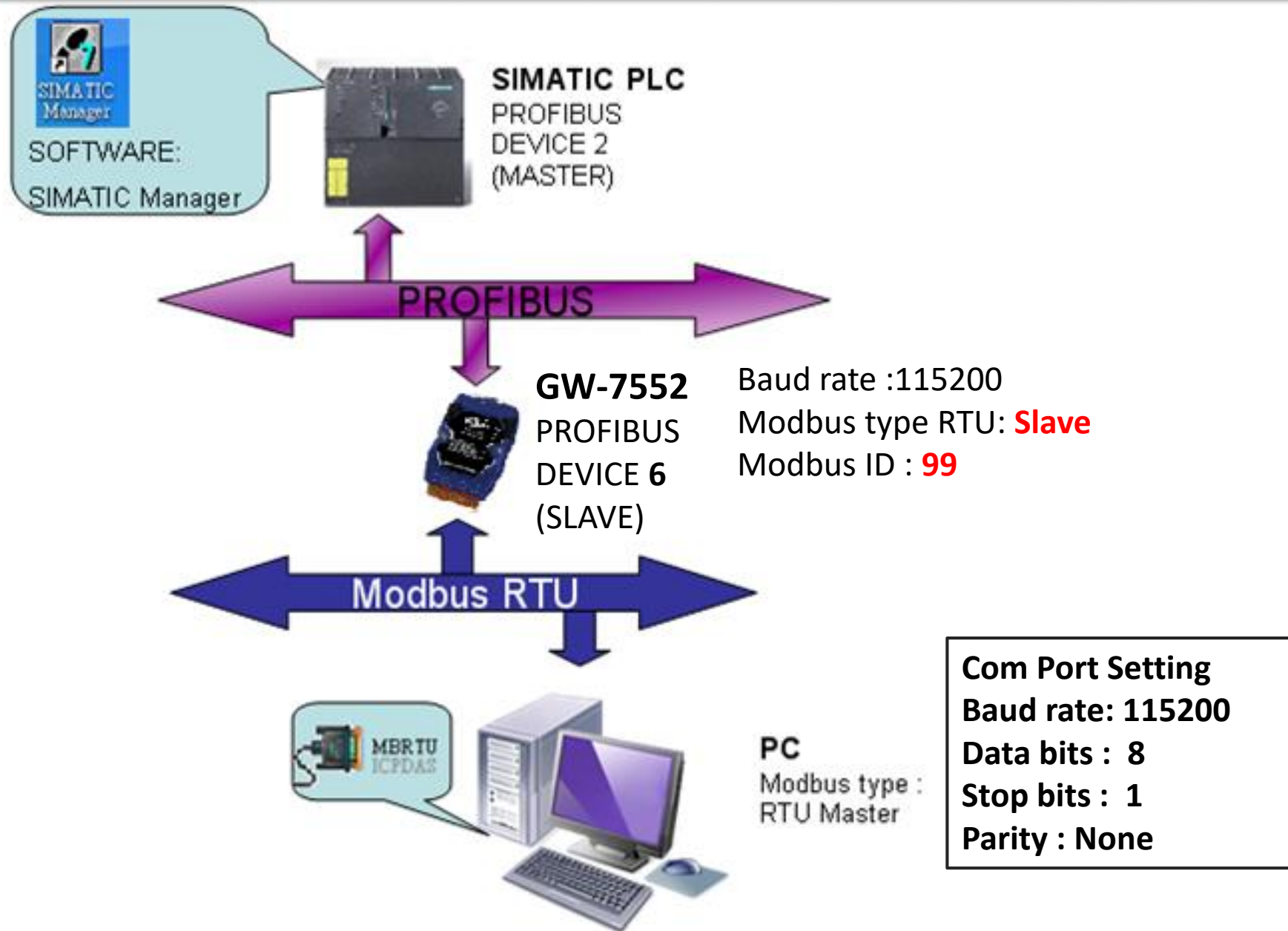
Table Edit Insert PLC Variable View Options  
Window Help

	Address	Symbol	Display format	Status value	Modify value
1	PIW 256		HEX	W#16#0000	
2	PIW 258		HEX	W#16#1122	
3	PIW 260		HEX	W#16#3344	
4	PIW 262		HEX	W#16#0000	
5	PIW 264		HEX	W#16#0000	
6					

S7\_Pro2\SIMATIC 300 Station\...\S7 Program(1)

User can receive AO data in  
PIW 256~ PIW 264





# PLC從Modbus master更新DI



(1)選擇 GW-7552 模組

(2)雙擊

1. “System setting module”
2. “Output Relay/Coil – 4byte”

Slot	DP ID	Order Number / Designation	I Address	Q Address	Comment
1	24DO	System setting		0...2	
2	32DI	--> System setting	0...3		
3	32DO	Output Relay/Coil--4 byte		3...6	
4					

Press F1 to get Help. Chg

# PLC 從Modbus master更新 DI



The screenshot shows the SIMATIC Manager HW Config interface. The 'Station' menu is open, and the 'Save and Compile' option is highlighted. A red box with the Chinese text '點選“Save and Compile”' (Click 'Save and Compile') is overlaid on the menu item. The background shows a hardware rack configuration for a SIMATIC 300 station, including a DP/DP Coupler, DP/RS232C Link, and a GW-7552 gateway. The rack contains 12 modules, with the last 10 being Output Relay/Coil modules.

Address	Q Address	Comment
	0...2	
3		
	3...6	

Saves and creates all system data in the current station.

# PLC從Modbus master更新 DI



The screenshot shows the SIMATIC Manager HW Config interface. The 'PLC' menu is open, and the 'Download to PLC' option is highlighted with a red box and the text '點選"Download to PLC"'. The interface includes a rack configuration table on the left, a main workspace, and a component tree on the right.

Slot	Module
1	
2	CPU313
X2	DP
2.2	DI16/DO16
2.4	Count
3	
4	

Slot	DP ID	Module	Address	Comment
1	24DO	System setting	0...2	
2	32DI	--> System setting	0...3	
3	32DO	Output Relay/Coil--4 byte	3...6	
4				

Component Tree (Right):

- AS-I
  - DP/DP Coupler
  - DP/RS232C Link
  - GW-7552
    - Universal module
    - System setting
    - Output Relay/Coil--1 byte
    - Output Relay/Coil--2 byte
    - Output Relay/Coil--3 byte
    - Output Relay/Coil--4 byte
    - Output Relay/Coil--5 byte
    - Output Relay/Coil--6 byte
    - Output Relay/Coil--7 byte
    - Output Relay/Coil--8 byte
    - Output Relay/Coil--9 byte
    - Output Relay/Coil--10 byte
    - Output Relay/Coil--11 byte
    - Output Relay/Coil--12 byte

點選"Download to PLC"

Loads the current station into the load memory of the current module.

Chg

# PLC 從Modbus master更新 DI



SIMATIC Manager - S7\_Pro2

File Edit Insert PLC View Options Window Help

< No Filter >

S7\_Pro2 -- C:\Program Files\Siemens\Step7\s7proj\S7\_Pro2

S7\_Pro2

- SIMATIC 300 Station
  - CPU313 C-2 DP(1)
    - S7 Program(1)
      - Sources
      - Blocks
- System data
- OB1
- OB82
- OB86
- VAT\_1

新建變數表並雙擊變數表

Cut Ctrl+X

Copy Ctrl+C

Paste Ctrl+V

Delete Del

Insert New Object

- Organization Block
- Function Block
- Function
- Data Block
- Data Type
- Variable Table

PLC

Rewire...

Compare Blocks...

Reference Data

Check Block Consistency...

Print

Rename F2

Object Properties... Alt+Return

Special Object Properties

Inserts Variable Table at

# PLC從Modbus master更新DI



1. 輸入所對應PROFIBUS的位址  
2. 點選“Monitor”按鈕

Address	Symbol	Display format	Status value	Modify value
1	QB 3	HEX	B#16#00	
2	QB 4	HEX	B#16#00	
3	QB 5	HEX	B#16#00	
4	QB 6	HEX	B#16#00	
5				

Slot	DP ID	Order Number / Designation	I Address	Q Address	Comment
1	24DO	System setting		0...2	
2	32DI	--> System setting	0...3		
3	32DO	Output Relay/Coil--4 byte		3..6	
4					



## 連線測試

確認 GW-7552的Comport設定與 Modbus Master Tool相同

(ex: MBRTU, MBRTU 下載：[http://ftp.icpdas.com.tw/pub/cd/8000cd/napdos/modbus/modbus\\_utility/](http://ftp.icpdas.com.tw/pub/cd/8000cd/napdos/modbus/modbus_utility/))

### Com Port Settings:

baud rate-2400,  
data bits-8, stop bits-1,  
parity-none

The screenshot shows the MBRTU V. 1.0.9 COM1 software interface. The window title is "MBRTU V. 1.0.9 COM1".

**COM Status:** COM1, 115200, Line control: N,8,1. Buttons: Open, Close.

**Protocol Description:** FC2 Read multiple input discretes (1xxxx) for DI. [Request] Byte 0: Net ID (Station number), Byte 1: FC=02, Byte 2-3: Reference number, Byte 4-5: Bit count.

**Statistics:** Clear Statistics button. Commands: Current Packet Size (Bytes) 8, Total Packet Size (Bytes) 0, Packet Quantity Sent 0. Responses: Current Packet Size (Bytes) 8, Total Packet Size (Bytes) 0, Packet Quantity Received 0. Difference in Packet Quantity 0.

**Timing:** Polling Mode (No Waiting) Timeout 200 ms (Start, Stop). Timer Mode (Fixed Period) Interval 50 ms (Start, Stop). Polling or Timer Mode (Date/Time) Start Time, Stop Time. Polling Mode Timing (ms) Max 000, Min 100, Average 000.

**Command:** 1 4 0 0 1. Send Command button.

**Commands:**  Include CRC. Responses. Clear Lists, Exit Program buttons at the bottom.

# PLC 從Modbus master更新 DI



MBRTU V.1.0.9 COM1

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

**Protocol Description**  
FC2 Read multiple input discretes (1xxxx) for DI  
[Request]  
Byte 0: Net ID (Station number)  
Byte 1: FC=02  
Byte 2-3: Reference number  
Byte 4-5: Bit count

**Statistics**  
Clear Statistics

Commands  
Current Packet Size (Bytes) 8  
Total Packet Size (Bytes) 8  
Packet Quantity Sent 1  
Difference in Packet Quantity 0

Responses  
Current Packet Size (Bytes) 9  
Total Packet Size (Bytes) 9  
Packet Quantity Received 1

Polling Mode (No Waiting)  
Timeout 200 ms  
Start Stop

Timer Mode (Fixed Period)  
Interval 50 ms  
Start Stop

Polling or Timer Mode (Date/Time)  
Start Time Time Start Stop

Polling Mode Timing (ms)  
Max 000 Average  
Min 100 000

3.送出Modbus命令讀取DI 的值

63 02 00 00 00 20

Send Command

Commands  Include CRC Responses

63 02 00 00 00 20 71 90

63 02 04 00 00 00 00 B8 24

4.收到回應資料

Clear Lists Exit Program

2.點選“Modify variable”按鈕

Var - [VAT\_1 -- @S7\_Pro2\SIMATIC 300 Stati...

Table Edit Insert PLC Variable View Options  
Window Help

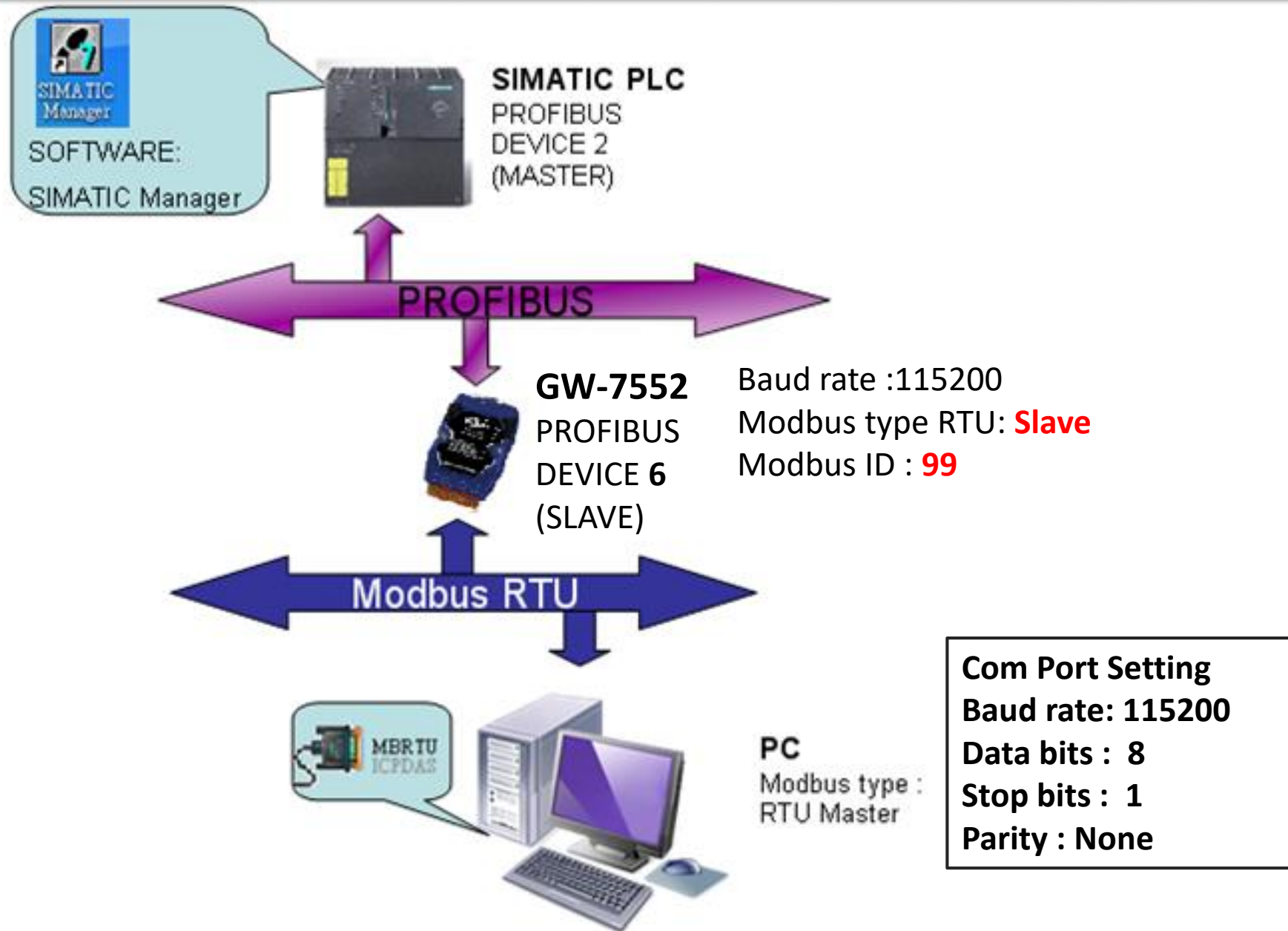
	Address	Symbol	Display format	Status value	Modify value
1	QB 3		HEX	B#16#00	B#16#AA
2	QB 4		HEX	B#16#00	B#16#BB
3	QB 5		HEX	B#16#00	B#16#CC
4	QB 6		HEX	B#16#00	B#16#DD
5					

1.定義 QB3~QB6 的值

S7\_Pro2\SIMATIC 300 Station\...\S7 Program(1)

User can refresh DI value in QB 3~ QB 6





# PLC從Modbus master 更新AI



HW Config - [SIMATIC 300 Station (Configuration) -- S7\_Pro2]

Station Edit Insert PLC View Options Window Help

(0) UR

1	
2	CPU313 C-2 DP(1)
X2	DP
2.2	DI16/DO16
2.4	Count
3	
4	

BUS(1): DP master system (1)

(6) GW-7552

(1) 選擇 GW-7552 模組

(2) 雙擊

1. "System setting module"
2. "Output Register- - 8 word"

Find: 7552

Profile: Standard

Output Register--4 word  
Output Register--5 word  
Output Register--6 word  
Output Register--7 word  
Output Register--8 word  
Output Register--9 word  
Output Register--10 word  
Output Register--11 word  
Output Register--12 word  
Output Register--13 word  
Output Register--14 word  
Output Register--15 word  
Output Register--16 word  
Output Register--17 word  
Output Register--18 word  
Output Register--19 word  
Output Register--20 word  
Output Register--21 word

(6) GW-7552

Slot	DP ID	...	Order Number / Designation	I Address	Q Address	Comment
1	24DO		System setting		0...2	
2	32DI		--> System setting	0...3		
3	8AO		Output Register--8 word		256...271	
4						

Press F1 to get Help.

Chg

# PLC 從Modbus master 更新AI



HW Config - [SIMATIC 300 Station (Configuration) -- S7\_Pro2]

Station Edit Insert PLC View Options Window Help

- New... Ctrl+N
- Open... Ctrl+O
- Open ONLINE
- Close
- Save
- Save and Compile**
- Properties...
- Import...
- Export...
- Consistency Check Ctrl+Alt+K
- Check CiR Compatibility Ctrl+Alt+F
- Print... Ctrl+P
- Print Preview...
- Page Setup...
- 1 S7\_Pro2\SIMATIC 300 Station
- 2 S7\_Pro1\SIMATIC 300 Station
- 3 S7\_Pro4\SIMATIC 300 Station
- 4 S7\_Pro3\SIMATIC 300 Station
- Exit Alt+F4

點選“Save and Compile”

Address	Q Address	Comment
	0...2	
3		
	256...271	

Find: 7552

Profile: Standard

- Output Register--4 word
- Output Register--5 word
- Output Register--6 word
- Output Register--7 word
- Output Register--8 word
- Output Register--9 word
- Output Register--10 word
- Output Register--11 word
- Output Register--12 word
- Output Register--13 word
- Output Register--14 word
- Output Register--15 word
- Output Register--16 word
- Output Register--17 word
- Output Register--18 word
- Output Register--19 word
- Output Register--20 word
- Output Register--21 word
- Output Register--22 word

Saves and creates all system data in the current station.

Chg

# PLC 從Modbus master 更新AI



The screenshot shows the SIMATIC Manager HW Config interface. The 'PLC' menu is open, and the 'Download to PLC' option is highlighted. A red box with the text '點擊"Download to PLC"' is overlaid on the menu. The background shows the hardware rack configuration and the DP ID table.

Slot	DP ID	...	...	...	Comment
1	24DO	System setting		0...2	
2	32DI	--> System setting		0...3	
3	8AO	Output Register--8 word		256...271	
4					

Loads the current station into the load memory of the current module.

# PLC 從Modbus master 更新AI



SIMATIC Manager - S7\_Pro2

File Edit Insert PLC View Options Window Help

< No Filter >

S7\_Pro2 -- C:\Program Files\Siemens\Step7\s7proj\S7\_Pro2

S7\_Pro2

- SIMATIC 300 Station
  - CPU313 C-2 DP(1)
    - S7 Program(1)
      - Sources
      - Blocks
- System data
- OB1
- OB82
- OB86
- VAT\_1

新建變數表並雙擊變數表

Cut Ctrl+X

Copy Ctrl+C

Paste Ctrl+V

Delete Del

Insert New Object

- Organization Block
- Function Block
- Function
- Data Block
- Data Type
- Variable Table

PLC

Rewire...

Compare Blocks...

Reference Data

Check Block Consistency...

Print

Rename F2

Object Properties... Alt+Return

Special Object Properties

Inserts Variable Table at t

# PLC 從 Modbus master 更新 AI



HW Config - [SIMATIC 300 Station (Configuration) -- S7\_Pro2]

Station Edit Insert PLC View Options Window Help

(0) UR

1	
2	CPU313 C-2 DP(1)
X2	DP
2.2	DI16/DO16
2.4	Count
3	
4	

BUS(1)

(6) GW-752

(6) GW-7552

Slot	DP ID	Order Number / Designation	I Address	Q Address	Comment
1	24DO	System setting		0...2	
2	32DI	--> System setting	0...3		
3	8AO	Output Register--8 word		256...271	
4					

Var - [VAT\_1 -- @S7\_Pro2\SIMATIC 300 Stati...]

Table Edit Insert PLC Variable View Options Window Help

Address	Symbol	Display format	Status value	Modify value
1	PQW 256	HEX	00	
2	PQW 258	HEX	00	
3	PQW 260	HEX	00	
4	PQW 262	HEX	00	
5	PQW 264	HEX	00	
6	PQW 266	HEX	00	
7	PQW 268	HEX	00	
8	PQW 270	HEX	00	
9				

S7\_Pro2\SIMATIC 300 Station\...\S7 Program(1)

Press F1 to get Help.

Chg

1. 輸入所對應PROFIBUS的位址  
2. 點選 "Monitor" 按鈕



## 連線測試

確認 GW-7552的Comport設定與 Modbus Master Tool相同

(ex: MBRTU, MBRTU 下載：[http://ftp.icpdas.com.tw/pub/cd/8000cd/napdos/modbus/modbus\\_utility/](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

The screenshot shows the MBRTU V. 1.0.9 COM1 software interface. The window title is "MBRTU V. 1.0.9 COM1".

**COM Status:** COM1, 115200, Line control: N,8,1. Buttons: Open, Close.

**Protocol Description:** FC4 Read multiple input registers (3xxxx) for AI. [Request] details: Byte 0: Net ID (Station number), Byte 1: FC=04, Byte 2-3: Reference number, Byte 4-5: Word count.

**Statistics:** Clear Statistics button. Commands: Current Packet Size (Bytes) 8, Total Packet Size (Bytes) 0, Packet Quantity Sent 0. Responses: Current Packet Size (Bytes) 9, Total Packet Size (Bytes) 0, Packet Quantity Received 0. Difference in Packet Quantity 0.

**Timing:** Polling Mode (No Waiting) Timeout 200 ms (Start/Stop buttons). Timer Mode (Fixed Period) Interval 50 ms (Start/Stop buttons). Polling or Timer Mode (Date/Time) Start Time, Stop Time, Time Start, Time Stop. Polling Mode Timing (ms) Max 000, Min 100, Average 000.

**Command:** 1 4 0 0 1. Send Command button.

**Include CRC:** Checked. Commands and Responses list areas. Clear Lists button.

**Exit Program:** Button.

# PLC 從 Modbus master 更新 AI



MBRTU V. 1.0.9 COM1

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

**Protocol Description**  
FC4 Read multiple input registers (3xxxx) for AI  
[Request]  
Byte 0: Net ID (Station number)  
Byte 1: FC=04  
Byte 2-3: Reference number  
Byte 4-5: Word count

**Statistics**  
Clear Statistics

Commands  
Current Packet Size (Bytes) 8  
Total Packet Size (Bytes) 8  
Packet Quantity Sent 1

Difference in Packet Quantity 0

Responses  
Current Packet Size (Bytes) 21  
Total Packet Size (Bytes) 21  
Packet Quantity Received 1

Polling Mode (No Waiting)  
Timeout 200 ms  
Start Stop

Timer Mode (Fixed Period)  
Interval 50 ms

Polling or Timer Mode (Date/Time)  
Start Time Time Start  
Stop

Polling Mode Timing (ms)  
Max 000 Average  
Min 100 000

Commands  Include CRC

Command: 63 04 00 00 00 08

Send Command

Commands 63 04 00 00 00 08 F9 8E

Responses 63 04 10 11 11 23 23 44 44 55 55 66 66 77 77 AB FA 0F FF AC A2

Clear Lists Exit Program

2. 點擊“Modify variable”按鈕

1. 定義 PQW 256~ PQW 260 的值

Var - [VAT\_1 -- @S7\_Pro2\SIMATIC 300 Stati...

Table Edit Insert PLC Variable View Options  
Window Help

	Address	Symbol	Display format	Status value	Modify value
1	PQW 256		HEX	<del>W#16#1111</del>	<del>W#16#1111</del>
2	PQW 258		HEX	<del>W#16#2323</del>	<del>W#16#2323</del>
3	PQW 260		HEX	<del>W#16#4444</del>	<del>W#16#4444</del>
4	PQW 262		HEX	<del>W#16#5555</del>	<del>W#16#5555</del>
5	PQW 264		HEX	<del>W#16#6666</del>	<del>W#16#6666</del>
6	PQW 266		HEX	<del>W#16#7777</del>	<del>W#16#7777</del>
7	PQW 268		HEX	<del>W#16#ABFA</del>	<del>W#16#ABFA</del>
8	PQW 270		HEX	<del>W#16#0FFF</del>	<del>W#16#0FFF</del>
9					

S7\_Pro2\SIMATIC 300 Station\...\S7 Program(1)

3. 送出 Modbus 命令讀取 AI 值

4. 收到回應

User can refresh AI value in  
PIW 256~ PIW 260