

GW-7552 (Modbus RTU Slave)

Example for SIMATIC STEP 7

- **Before Connecting**
- **Example 1: Receives DO data from Modbus master**
- **Example 2: Refreshes DI data from Modbus master**
- **Example 3: Receives AO data from Modbus master**
- **Example 4: Refreshes AI data from Modbus master**



Set the parameters of device as shown as below



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)

Before connecting



Add a profibus master system and a profibus slave (GW-7552)

The screenshot shows the HW Config window for a SIMATIC 300 station. On the left, the rack configuration (UR) is shown with slots 1-4. Slot 2 contains a CPU313 C-2 DP(1). A Profibus DP master system (1) is connected to slot 2. A GW-7552 gateway is connected to the Profibus DP master system. The right panel shows the search results for the gateway, listing its I/O modules. The bottom panel shows the station configuration table.

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

Press F1 to get Help.

Chg

Before connecting



Set the address of PLC in profibus as below



SIMATIC PLC
* PROFIBUS Device 2 (Master)

1. Double Click DP icon
2. Click "Properties"
3. Change address
4. Click OK

The screenshot shows the SIMATIC Manager software interface. The main window displays a hardware rack configuration with the following modules:

Module	Order
CPU313 C-2 DP(1)	6ES7 313-6CG03-0AB0
DP	
DI16/DO16	
Count	

The 'Properties - PROFIBUS interface DP (R0/S2.1)' dialog box is open, showing the following configuration:

- Address: 2 (highlighted with a red box)
- Highest address: 126
- Transmission rate: 1.5 Mbps
- Subnet: --- not networked ---
- Selected network: PROFIBUS(1) 1.5 Mbps

The background software interface shows the 'Hardware Catalog' on the right with the following items:

- PROFIBUS DP
- PROFIBUS-PA
- PROFINET IO
- SIMATIC 300
- SIMATIC 400
- SIMATIC PC B
- SIMATIC PC S

The status bar at the bottom indicates: PROFIBUS-DP slaves for SIMATIC S7, M7, and C (distributed rack)

Before connecting



Set the address of GW-7552 as below



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

1. Double click GW7552 icon
2. Click PROFIBUS
3. Change the address
4. Click OK

Properties - DP slave

General | Parameter Assienment

Properties - PROFIBUS interface GW-7552

General | Parameters

Address:

Transmission rate: 1.5 Mbps

Subnet:

--- not networked ---	
PROFIBUS(1)	1.5 Mbps

New...
Properties...
Delete

OK Cancel Help



Set Gw-7552 comport setting as below



- 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.Double click GW7552 icon
 - 2.Click Parameter Assignment
 - 3.Change
 - Modbus Type : Slave
 - Byte order: big Endian
 - Output Data Mode : Auto
 - Modbus Device ID: 99
 - 4.Click "OK"
- You can change parameters here

The screenshot shows a software interface with a bus diagram on the left and a 'Properties - DP slave' dialog box on the right. The bus diagram shows a 'BUS(1): DP master system' connected to a device icon labeled '(6) G W-7552'. The dialog box has two tabs: 'General' and 'Parameter Assignment'. The 'Parameter Assignment' tab is active, showing a tree view of parameters. The 'Device-specific parameters' folder is expanded, and the following parameters are listed in a table:

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	

At the bottom of the dialog box are 'OK', 'Cancel', and 'Help' buttons.

1
2
3
4
5
6
7
8
9
1
1
1

Before connecting



Make sure the switch of the GW-7552 is at Normal mode.

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



Before connecting



Setup the address by the DIP switch to set GW-7552's address as 6 in PROFIBUS

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

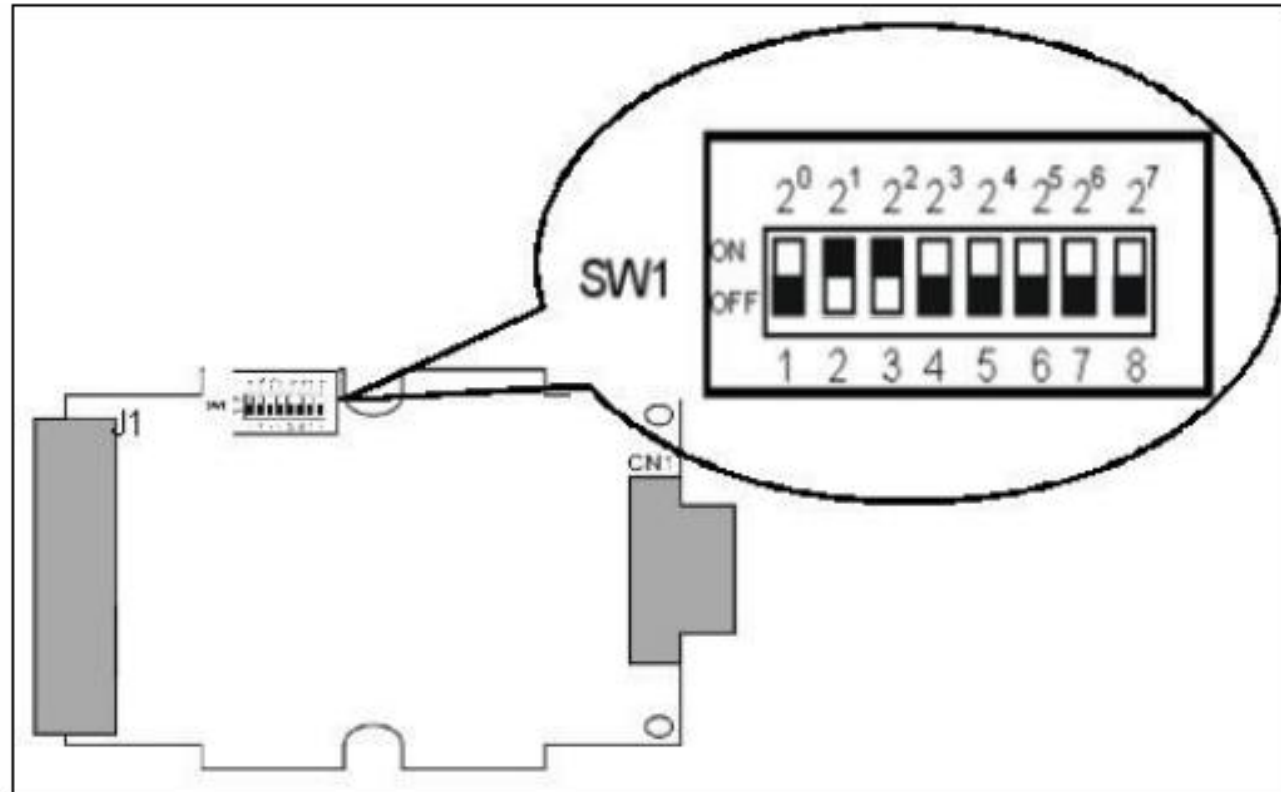
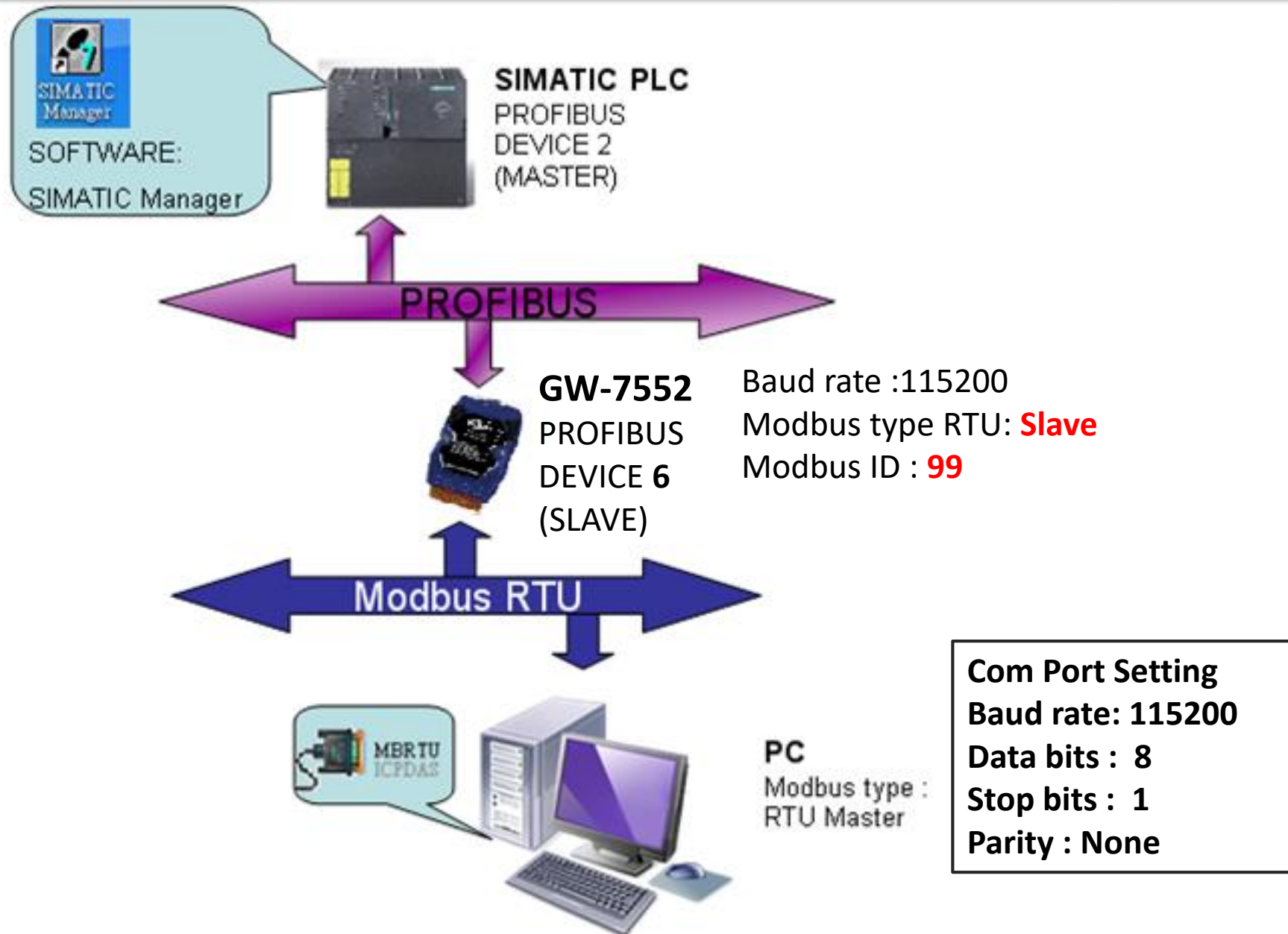


Figure 12: DIP switch

PLC Receives DO from Modbus master



PLC Receives DO from Modbus master



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) Select GW-7552 module

(2) Double click
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

(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 Receives DO from Modbus master



The screenshot shows the SIMATIC Manager HW Config interface. The 'Station' menu is open, and the 'Save and Compile' option is highlighted with a red box. The main workspace displays a ladder logic diagram for a 'Master system (1)'. On the right, the 'Hardware Catalog' is visible, showing a list of modules including 'Output Relay/C' and multiple 'Input Relay/C' modules. The 'Find' field is set to '7552' and the 'Profile' is 'Standard'. At the bottom, a table shows the configuration of the modules.

Address	Q Address	Comment
	0...2	
3		
13		

Saves and creates all system data in the current station.

PLC Receives DO from Modbus master



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. The interface includes a hardware rack view on the left, a main menu bar, and a right-hand panel with search and profile settings.

Hardware Rack View:

Slot	Module
2	CPU 313
X2	DP
2.2	DI16/DO4
2.4	Count
3	
4	

PLC Menu Options:

- 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...

Right Panel:

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

Bottom Panel:

(6) GW-7552

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

PLC Receives DO from Modbus master



The screenshot shows the SIMATIC Manager interface for a project named S7_Pro2. The main workspace displays a project tree on the left and a list of objects (System data, OB1, OB82, OB86, and VAT_1) in the center. The VAT_1 object is highlighted with a red box. A context menu is open over the VAT_1 object, with the 'Insert New Object' option selected. This option has opened a sub-menu where 'Variable Table' is highlighted. A red box with the text 'Double click' is positioned below the VAT_1 object.

File Edit Insert PLC View Options Window Help

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

Double click

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 at th

PLC Receives DO from Modbus master



HW Config - [SIMATIC 300 Station (Configuration) -- S7_Pro2]

Station Edit Insert PLC View Options Window Help

CPU 313 C-2 DP (1)

X2 DP

2.2 DI16/DO16

2.4 Count

BUS(1): DP master system (1)

(6) GW-752

Click "Monitor" button

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.

(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						

Press F1 to get Help.

Chg



Communication test

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

Confirm the setting of MBRTU is
the same with GW-7552's setting

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: Polling or Timer Mode (Date/Time): Start Time, Time Start, Stop Time, Time Stop. Polling Mode Timing (ms): Max 000, Average, Min 100.

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

Include CRC: Checked.

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

PLC Receives DO from Modbus master



MBRTU V. 1.0.9 COM1

COM Status
COM1
115200
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 1
Responses: Current Packet Size (Bytes) 8, Total Packet Size (Bytes) 8, Packet Quantity Received 1
Difference in Packet Quantity: 0

Modbus FCOF
Polling or Timer Mode (Date/Time)
Start Time: Time Start, Stop Time: Time Stop
Mode Timing (ms): Min 100, Average 000

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

Responses
63 0f 00 00 00 50 5d b5
2.Recived Response
Gw-7552 Modbus Address :15
Clear Lists Exit Program

Var - [VAT_1 -- @S7_Pro2\SIMATIC 300 Station\CPU...

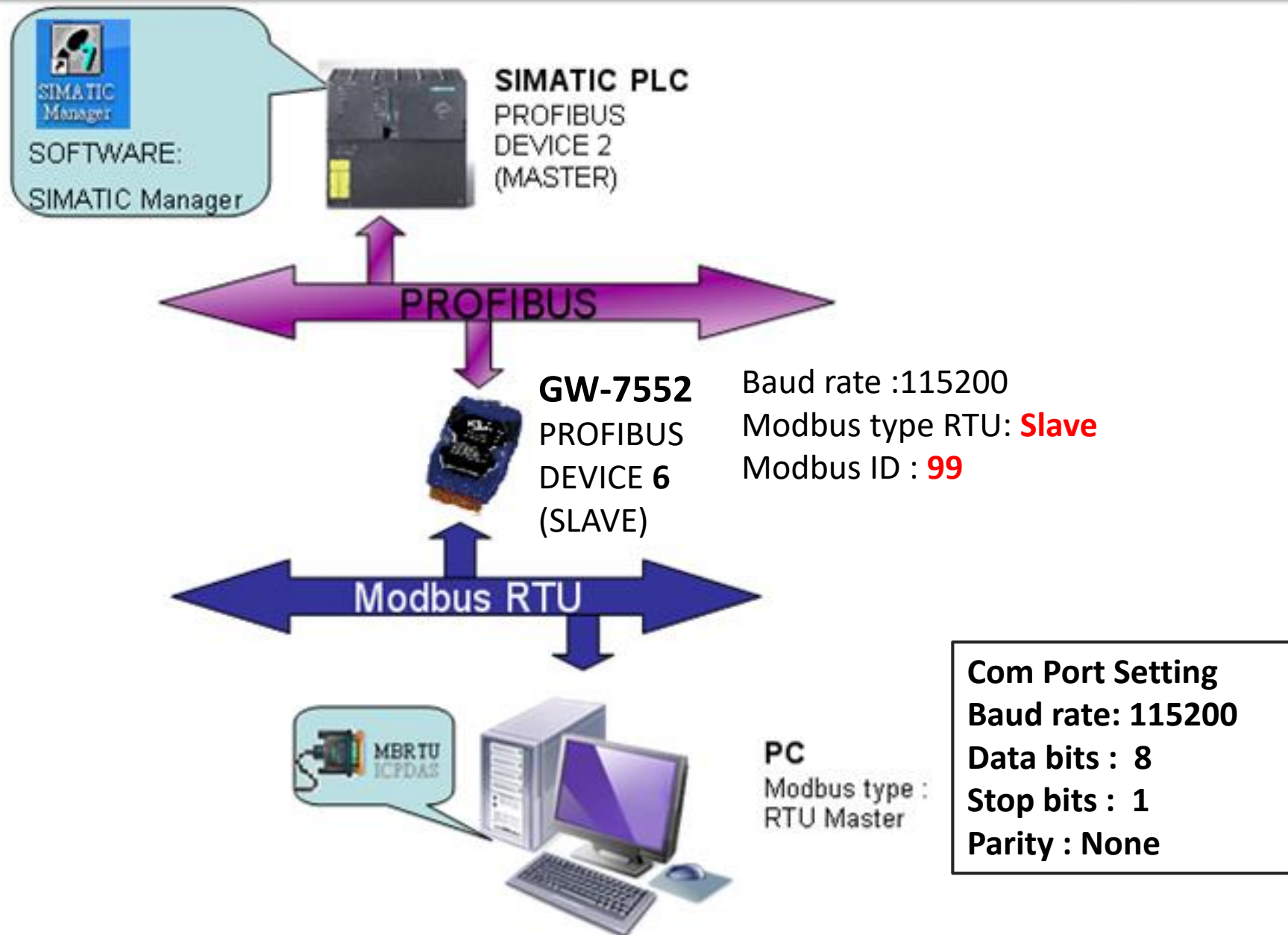
Table Edit Insert PLC Variable View Options Window Help

	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 Receives AO from Modbus master



PLC Receives AO from Modbus master



The screenshot shows the SIMATIC Manager HW Config interface for a SIMATIC 300 Station. The rack configuration is as follows:

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

A bus labeled "BUS(1): DP master system (1)" connects the rack to a GW-7552 module in slot 6. A red box highlights the selection of the GW-7552 module in the rack view with the text: (1) Select GW-7552 module.

Another red box highlights the configuration steps for the module with the text: (2) Double click
1. "System setting module"
2. "Input Register - - 5 word"

The configuration table for the (6) GW-7552 module is shown below:

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					

The right-hand pane shows a search for "7552" and a list of modules including multiple Output Registers and Input Registers. The status bar at the bottom indicates "Press F1 to get Help." and "Chg".

PLC Receives AO from Modbus master



The screenshot shows the SIMATIC Manager HW Config interface. The 'Station' menu is open, and the 'Save and Compile' option is highlighted with a red box. The text 'Save and Compile' is also displayed in a red box to the right of the menu. The background shows a configuration table with columns for Address, Q Address, and Comment. The bottom status bar indicates 'Saves and creates all system data in the current station.' and 'Chg'.

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

Find: 7552
Profile: Standard

- 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
- Input Register
- Input Register
- Input Register

Saves and creates all system data in the current station.

Chg

PLC Receives AO from Modbus master



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. 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 Receives AO from Modbus master



The screenshot shows the SIMATIC Manager interface for a project named S7_Pro2. The main workspace displays a project tree on the left and a list of objects in the center. The objects listed are System data, OB1, OB82, OB86, and VAT_1. The VAT_1 object is highlighted with a red box. A red text box with the text "Double click" is positioned below the VAT_1 object. A context menu is open over the VAT_1 object, showing options such as Cut, Copy, Paste, Delete, Insert New Object, PLC, Rewire..., Compare Blocks..., Reference Data, Check Block Consistency..., Print, Rename, Object Properties..., and Special Object Properties. The "Insert New Object" option is selected, and a sub-menu is open showing options like Organization Block, Function Block, Function, Data Block, Data Type, and Variable Table. The "Variable Table" option is selected. A status bar at the bottom left of the window displays the text "Inserts Variable Table".

SIMATIC Manager - S7_Pro2

File Edit Insert PLC View Options Window Help

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

Double click

Inserts Variable Table

PLC Receives AO from Modbus master



The screenshot shows the SIMATIC Manager HW Config interface. On the left, a rack configuration for a SIMATIC 300 station is shown. Slot 2 contains a CPU313 C-2 DP(1) with DP modules in slots 2.2 (DI16/DO16) and 2.4 (Count). A DP master system (1) is connected to a DP slave (6) GW-752. The slave's DP ID is 24DO, and its I Address is 256...265. A red box highlights the I Address field in the slave configuration table.

On the right, a 'Var - [VAT_1 -- @S7_Pro2\SIMATIC 300 Station\CPU...]' window is open, displaying a table of variables. A red box highlights the first five rows of this table, which correspond to the I Address range 256-265. A red arrow points from the highlighted 'I Address' in the slave configuration to the first row of the variable table. A red circle highlights the 'Monitor' button in the variable table's toolbar.

Click "Monitor" button

	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					

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

S7_Pro2\SIMATIC 300 Station\...\S7 Program(1)

Press F1 to get Help.



Communication test

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

Confirm the setting of MBRTU is
the same with GW-7552's setting

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 (selected), 115200 (baud rate), 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: Polling or Timer Mode (Date/Time): Start Time, Time Start, Stop Time, Time Stop. Polling Mode Timing (ms): Max 000, Average, Min 100.

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

Include CRC: Checked.

Commands and Responses: Two empty text areas for logging.

Buttons: Clear Lists, Exit Program.

PLC Receives AO from Modbus master



MBRTU V. 1.0.9 COM1

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

Timer Mode (Fixed Period)
Polling Mode (No Waiting)
Timeout 200 ms
Start Stop

1. Send command to write AO value (0x1122, 0x3344)

63 10 00 01 00 02 04 11 22 33 44

Send Command

2. Received Response

63 10 00 01 00 02 18 4A

GW-7552 modbus address 09

Clear Lists Exit Program

Var - [VAT_1 -- @S7_Pro2\SIMATIC 300 Stati...

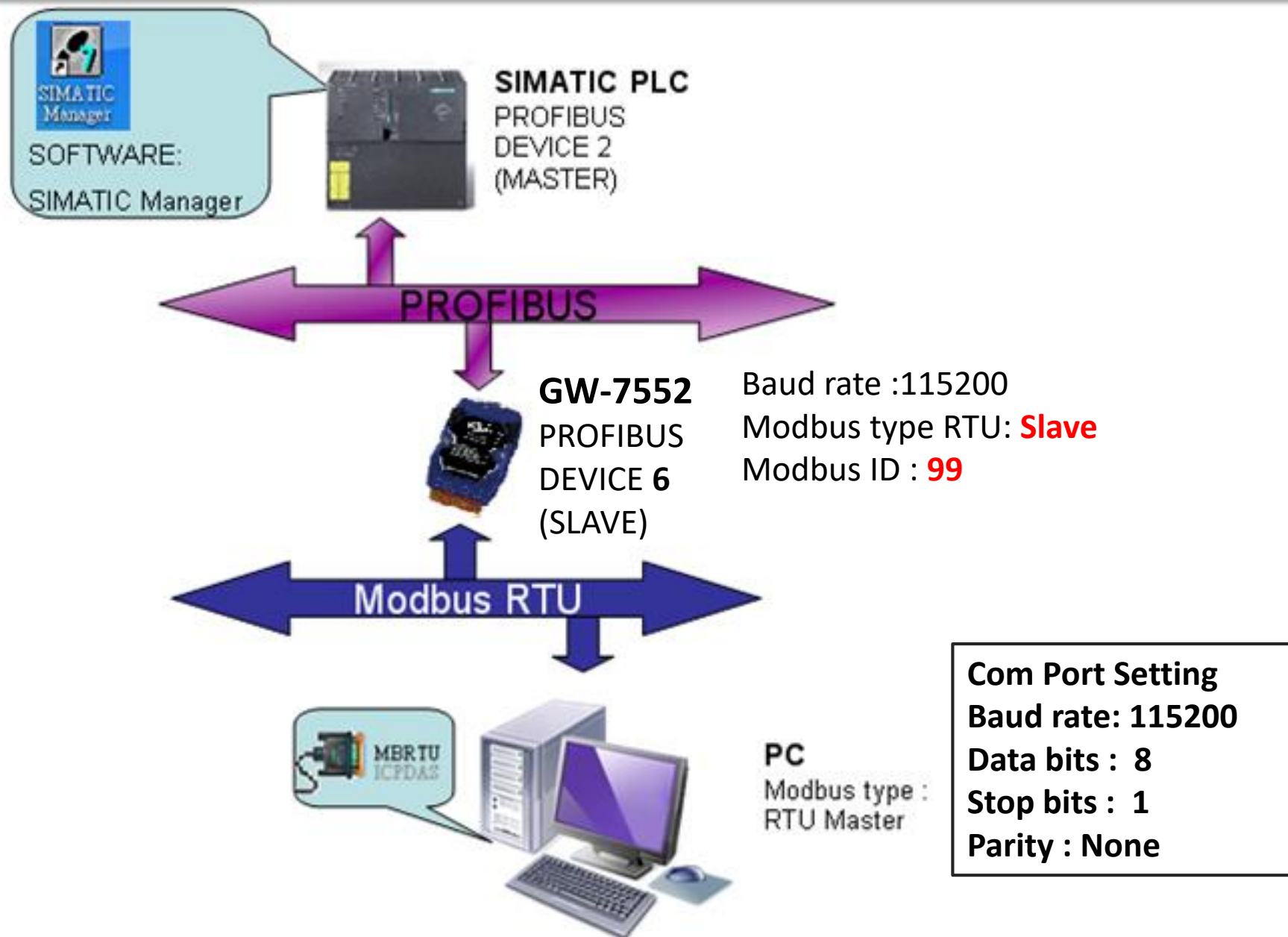
Table Edit Insert PLC Variable View Options
Window Help

	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 Refreshes DI from Modbus master



PLC Refreshes DI from Modbus master



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) G W-75

(2) Double click

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

(1) Select GW-7552 module

Find: 7552
Profile: Standard

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

(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	32DO	Output Relay/Coil--4 byte		3...6	
4					

Press F1 to get Help.

Chg

PLC Refreshes DI from Modbus master



The screenshot shows the SIMATIC Manager HW Config interface. The 'Station' menu is open, and the 'Save and Compile' option is highlighted with a red box. The interface includes a menu bar, a toolbar, a main workspace, and a right-hand panel with a search bar and a component tree.

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

- 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

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

Saves and creates all system data in the current station.

Chg

PLC Refreshes DI from Modbus master



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. The hardware rack is visible on the left, and the HW Config table is at the bottom.

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

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

PLC Refreshes DI from Modbus master



The screenshot shows the SIMATIC Manager interface. The main window displays a project tree on the left and a workspace on the right. The workspace contains several objects: System data, OB1, OB82, OB86, and VAT_1. The VAT_1 object is highlighted with a red box. A context menu is open over the VAT_1 object, with the 'Variable Table' option selected. A red box highlights the VAT_1 object, and a red box with the text 'Double click' is positioned below it.

File Edit Insert PLC View Options Window Help

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

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

Double click

Inserts Variable Table at

PLC Refreshes DI from Modbus master



Click "Monitor" button

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					



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-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 (selected), 115200 (baud rate), Line control: N,8,1. Buttons: Open, Close.

Protocol Description: FC2 Read multiple input discretes (1xxxx) for DI. [Request] details: Byte 0: Net ID (Station number), Byte 1: FC=02, Byte 2-3: Reference number, Byte 4-5: Bit 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) 8, Total Packet Size (Bytes) 0, Packet Quantity Received 0. Difference in Packet Quantity: 0.

Polling or Timer Mode (Date/Time): Start Time: Time Start, Stop Time: Time Stop.

Polling Mode Timing (ms): Max: 000, Average: 000, Min: 100.

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

Commands: Include CRC. Responses: (empty list).

Buttons at the bottom: Clear Lists, Exit Program.

PLC Refreshes DI from Modbus master



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 or Timer Mode (Date/Time): Start Time, Time Start, Stop
Polling Mode Timing (ms): Max 000, Average, Min 100, 000

3. Send command to read DI value
63 02 00 00 00 20
Send Command

4. Received Response
63 02 04 00 00 00 00 B8 24

Clear Lists Exit Program

2. Click "Modify variable" button

Var - [VAT_1 -- @S7_Pro2\SIMATIC 300 Stati...

Table Edit Insert PLC Variable View Options
Window Help

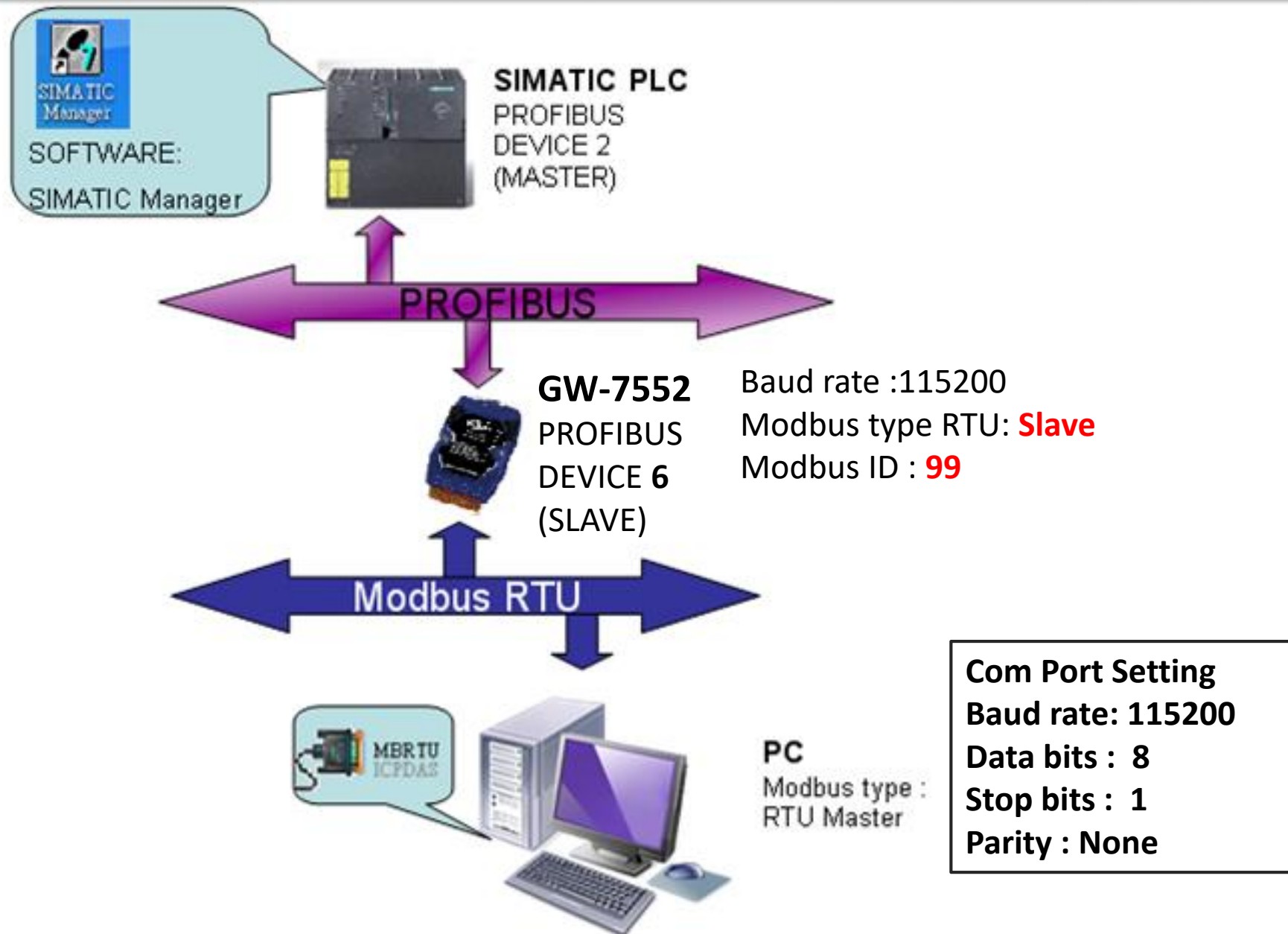
	Address	Symbol	Display format	Status value	Modify value
1	QB 3		HEX	B#16#00	B#16#AA
2	QB 4		HEX	B#16#00	B#16#BB
3	QB 5		HEX	B#16#00	B#16#CC
4	QB 6		HEX	B#16#00	B#16#DD
5					

1. Modify QB3~QB6 value

S7_Pro2\SIMATIC 300 Station\...\S7 Program(1)

User can refresh DI value in QB 3~ QB 6

PLC Refreshes AI from Modbus master



PLC Refreshes AI from Modbus master



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-752

(1) Select GW-752 module

(2) Double click

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 Refreshes AI from Modbus master



The screenshot shows the SIMATIC Manager HW Config interface. The 'Station' menu is open, and the 'Save and Compile' option is highlighted with a red box. A tooltip for 'Save and Compile' is visible, stating: 'Saves and creates all system data in the current station.' The background shows a table with columns 'Address', 'Q Address', and 'Comment'. The right sidebar displays a list of output registers from 4 to 21.

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

Saves and creates all system data in the current station.

PLC Refreshes AI from Modbus master



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. The interface includes a rack configuration table, a DP ID table, and a list of output registers.

Slot	Module	DP ID	Address
1			
2	CPU313		
X2	DP		
2.2	DI16/DO4		
2.4	Count		
3			
4			

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					

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

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

PLC Refreshes AI from Modbus master



The screenshot shows the SIMATIC Manager interface for a project named S7_Pro2. The main workspace displays a project tree on the left and a list of objects in the center. The objects listed are System data, OB1, OB82, OB86, and VAT_1. The VAT_1 object is highlighted with a red box. A red text box with the text "Double click" is positioned below the VAT_1 object. A context menu is open over the VAT_1 object, showing options such as Cut, Copy, Paste, Delete, Insert New Object, PLC, Rewire..., Compare Blocks..., Reference Data, Check Block Consistency..., Print, Rename, Object Properties..., and Special Object Properties. The "Insert New Object" option is selected, and a sub-menu is open showing options like Organization Block, Function Block, Function, Data Block, Data Type, and Variable Table. The "Variable Table" option is highlighted. The status bar at the bottom left indicates "Inserts Variable Table at t".

SIMATIC Manager - S7_Pro2

File Edit Insert PLC View Options Window Help

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

Double click

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 Refreshes AI from Modbus master



HW Config - [SIMATIC 300 Station (Configuration) -- S7_Pro2]

Station Edit Insert PLC View Options Window Help

Click "Monitor" button

BUS(1): DP master system (1)

(6) GW-752

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	POW 270		HEX	00	
9					

S7_Pro2\SIMATIC 300 Station\...\S7 Program(1)

Press F1 to get Help.

Chg



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

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] 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 or Timer Mode (Date/Time) Start Time, Stop Time. Polling Mode Timing (ms) Max 000, Average, Min 100.

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

Commands: Include CRC. Responses.

Buttons: Clear Lists, Exit Program.

PLC Refreshes AI from Modbus master



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

Commands: 63 04 00 00 00 08
Send Command

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. Click "Modify variable" button



1. Modify PQW 256~ PQW 260 value

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	W#16#1111	W#16#1111
2	PQW 258		HEX	W#16#2323	W#16#2323
3	PQW 260		HEX	W#16#4444	W#16#4444
4	PQW 262		HEX	W#16#5555	W#16#5555
5	PQW 264		HEX	W#16#6666	W#16#6666
6	PQW 266		HEX	W#16#7777	W#16#7777
7	PQW 268		HEX	W#16#ABFA	W#16#ABFA
8	PQW 270		HEX	W#16#0FFF	W#16#0FFF
9					

S7_Pro2\SIMATIC 300 Station\...\S7 Program(1)

3. Send command to read AI value

4. Received Response

User can refresh AI value in PIW 256~ PIW 260