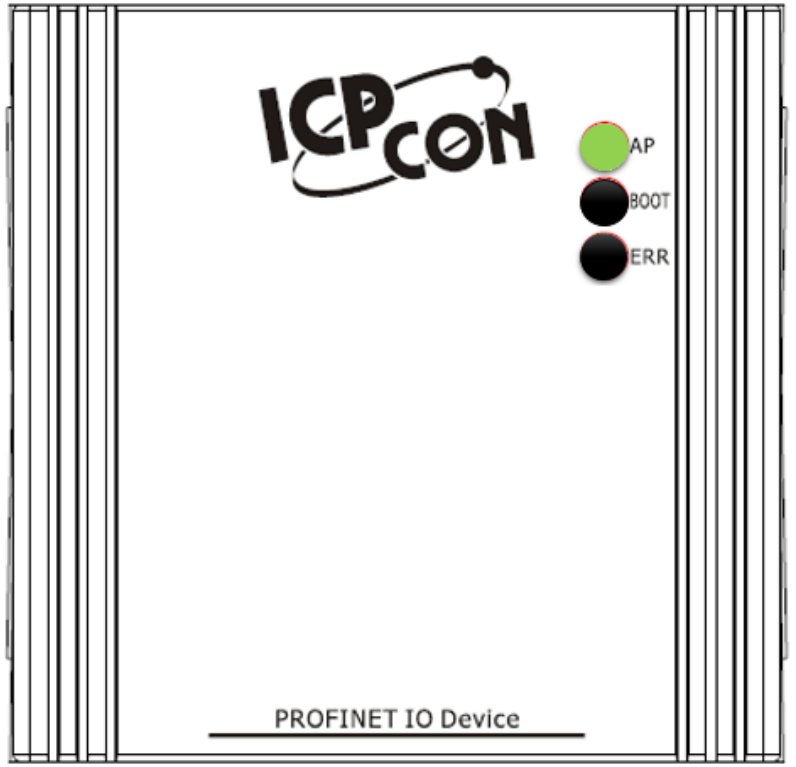
GW-7662 (Modbus RTU Master) How to Communicate with Modbus slave? Example for SIMATIC TIA portal

- **Preceding Operation**
- **Example 1:Reads and Writes DO data**
- **Example 2:Reads DI data**
- **Example 3:Reads and Writes AO data**
- **Example 4:Reads AI data**

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Preceding Operation

- ✓ Check wire connection between GW-7662 & Modbus devices.
  How to check the wire connection?
- ✓ Communication with PLC (LED => AP:ON, BOOT:OFF, ERR:OFF).
  How to configure GW-7662 in SIMATIC TIA portal?
- ✓ Download PFN_Tool utility from FTP side
  PFN_Tool

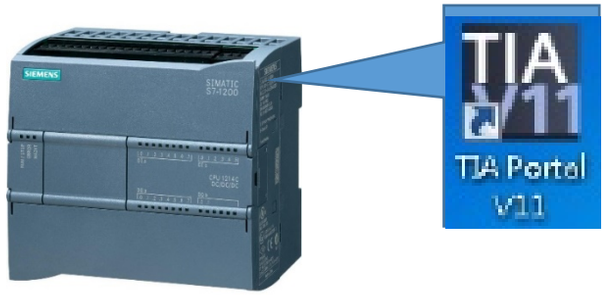


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Read and Write 16-channel DO

SIMATIC S7-1200

PROFINET IO Controller
(Master)



PROFINET

GW-7662



Comport Setting:

115200, n, 8, 1

Modbus RTU

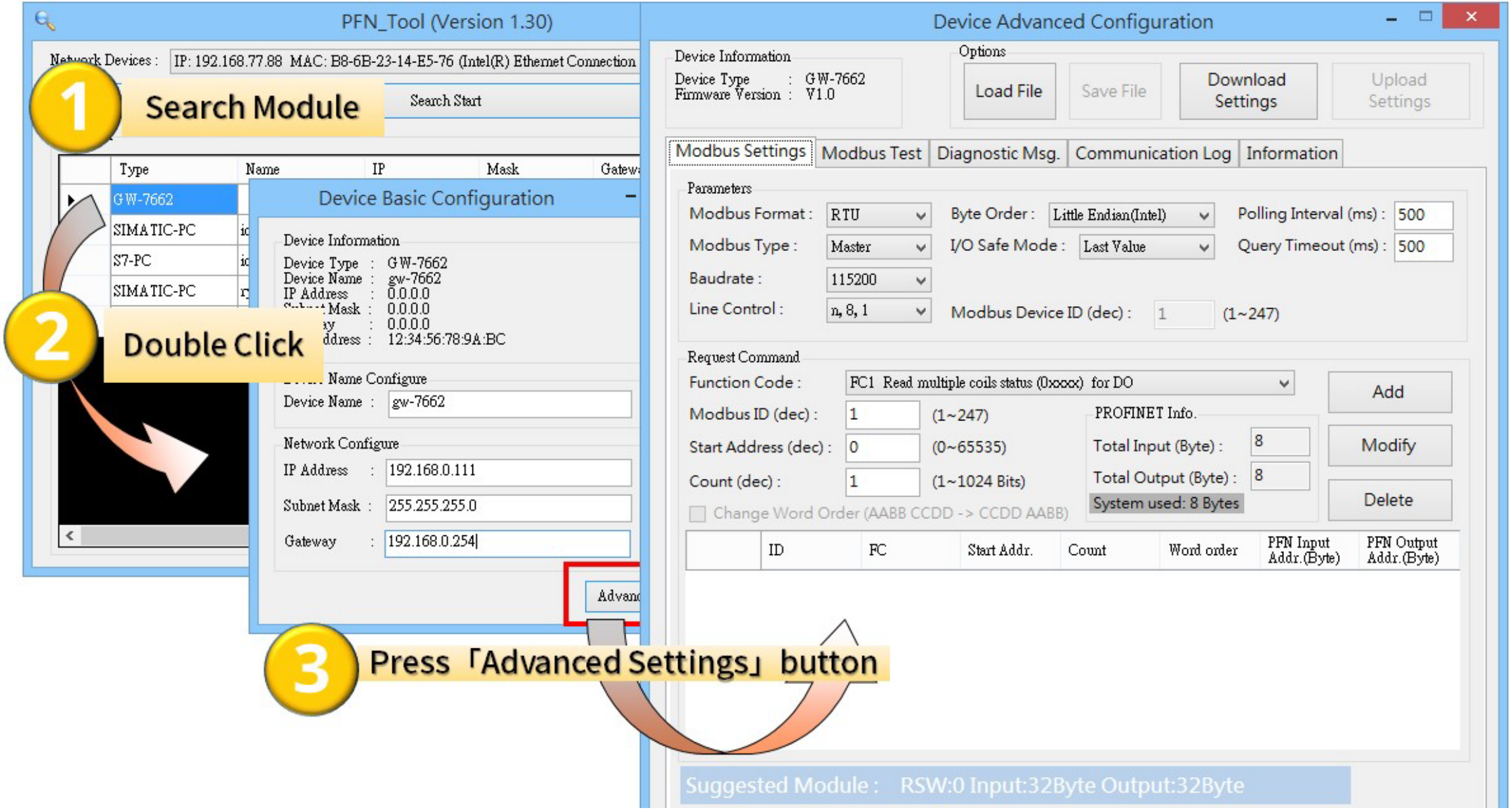
DO module (RTU Slave)
- **Modbus ID: 2**
- **Data Address: 00001~00016**
- **Data Length: 2**



PROFINET IO device (Slave) | **Modbus RTU Master**

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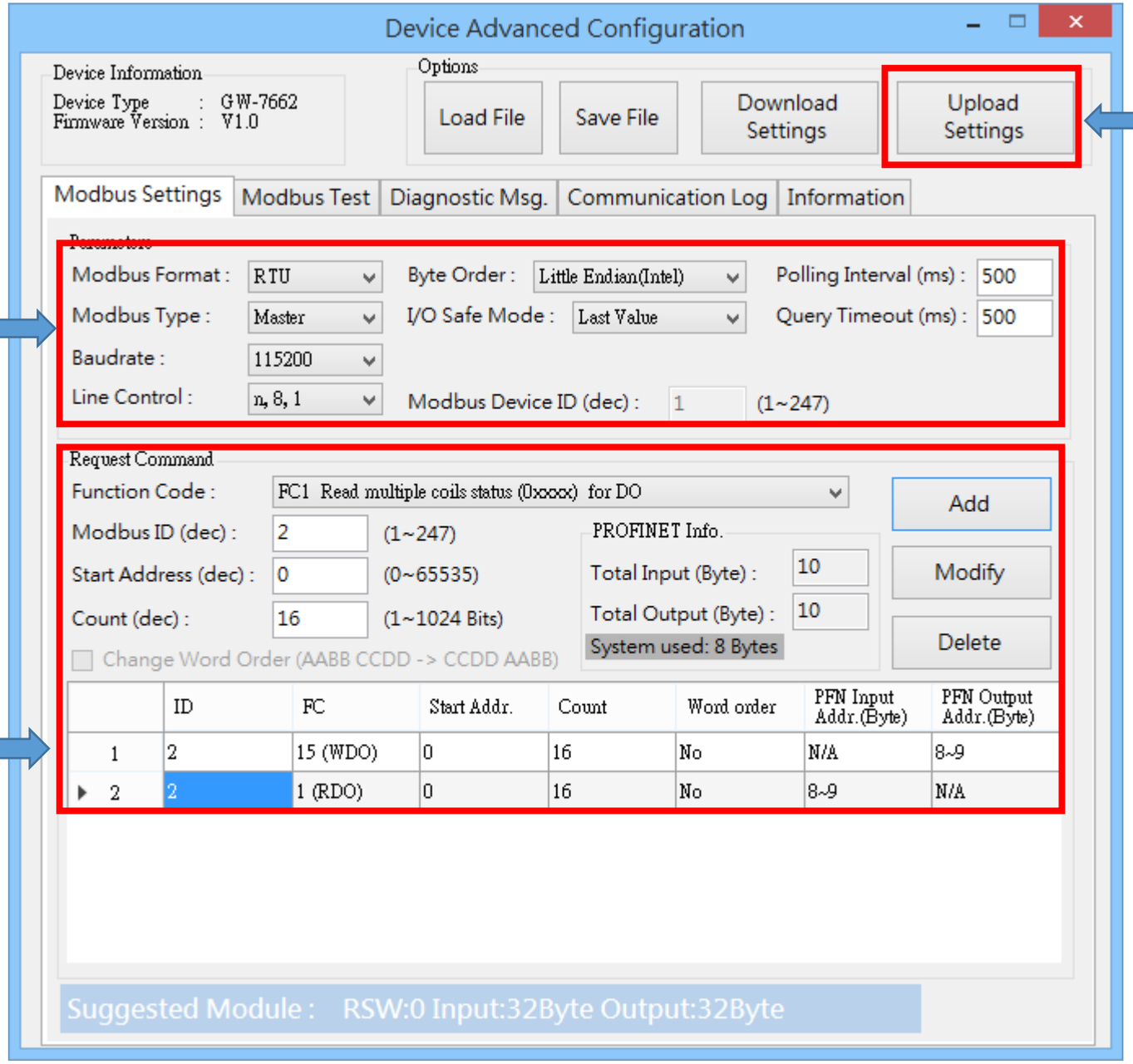
Read and Write 16-channel DO



Read and Write 16-channel DO

1. Set Modbus settings

2. Add Modbus Command



3. Upload

Read and Write 16-channel DO

The first input 8 bytes and output 8 bytes are allocated for system. (1~8)
The 9th byte to the 32th byte are allocated for Modbus. (9~32)

Device overview

	Module	Rack	Slot	I address	Q address	Type	Order no.
	GW-7662	0	0			GW-7662 2-Port De...	GW-7662
	Internal	0	0 X1			GW-7662	
	RSW:0 Input:32Byte Output:32Byte_1	0	1	1...32	1...32	RSW:0 Input:32Byte...	

	Name	Address	Display format
1		%QB9	
2		%QB10	Hex
3		%IB9	Hex
4		%IB10	Hex
5		<Add new>	

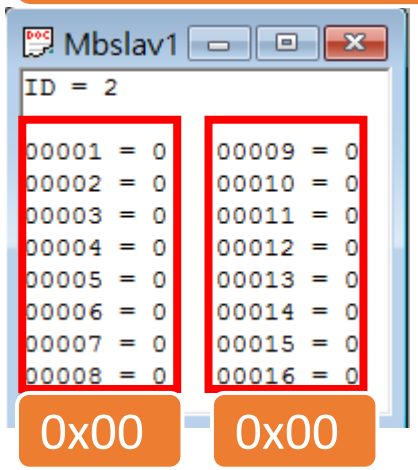
QB9 => used to write DO 1~8
QB10 => used to write DO 9~16

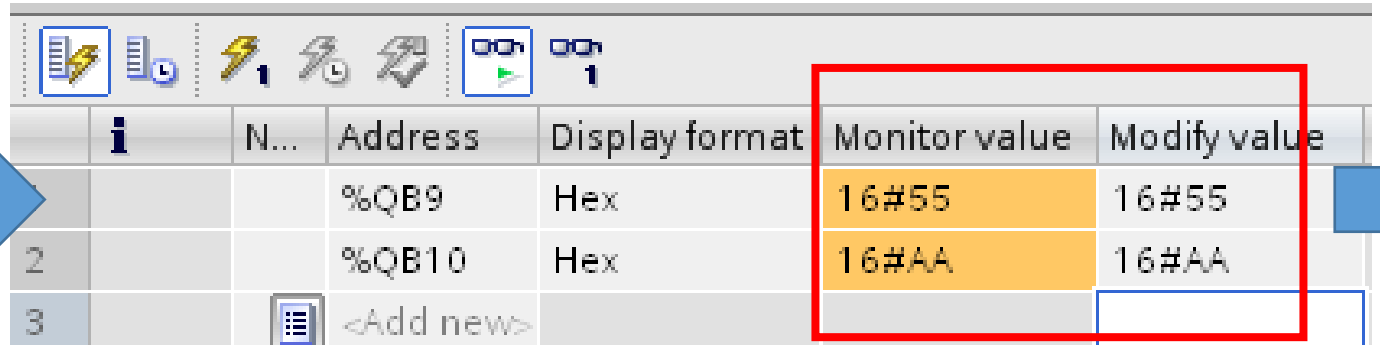
IB9 => used to read DO 1~8
IB10 => used to read DO 9~16

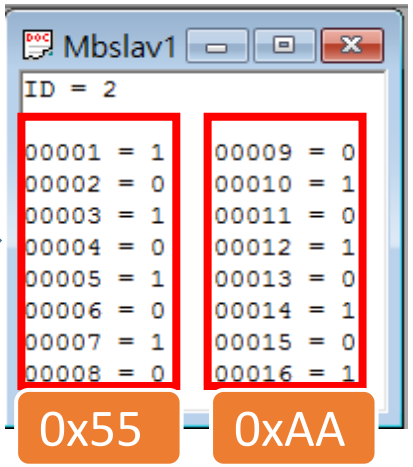
Read and Write 16-channel DO

Original DO value

PLC Write 0x55 to DO 1~8
PLC Write 0xAA to DO 9~16



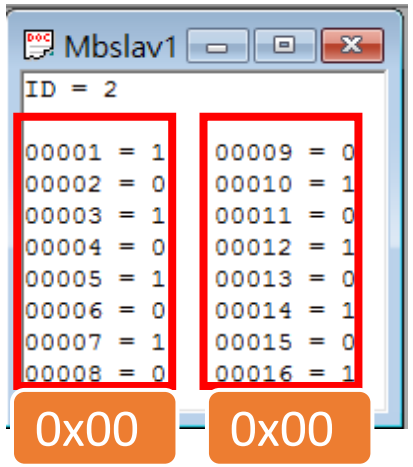


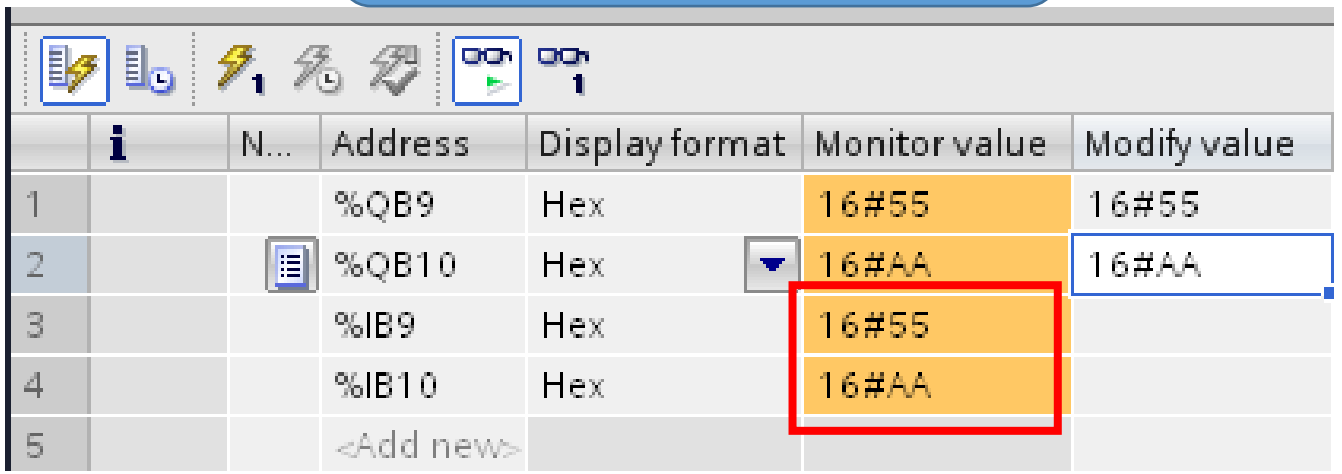


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Read and Write 16-channel DO

PLC Read 0x55 from DO 1~8
PLC Read 0xAA from DO 9~16



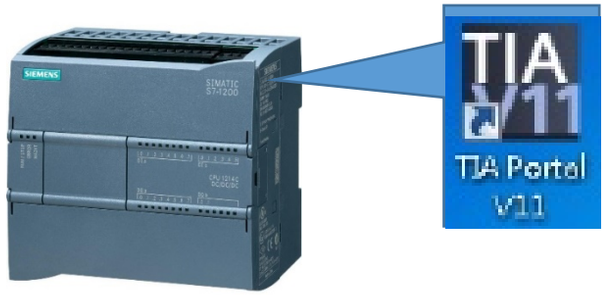


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Read 14-channel DI

SIMATIC S7-1200

PROFINET IO Controller
(Master)



PROFINET

GW-7662



Comport Setting:

115200, n, 8, 1

Modbus RTU

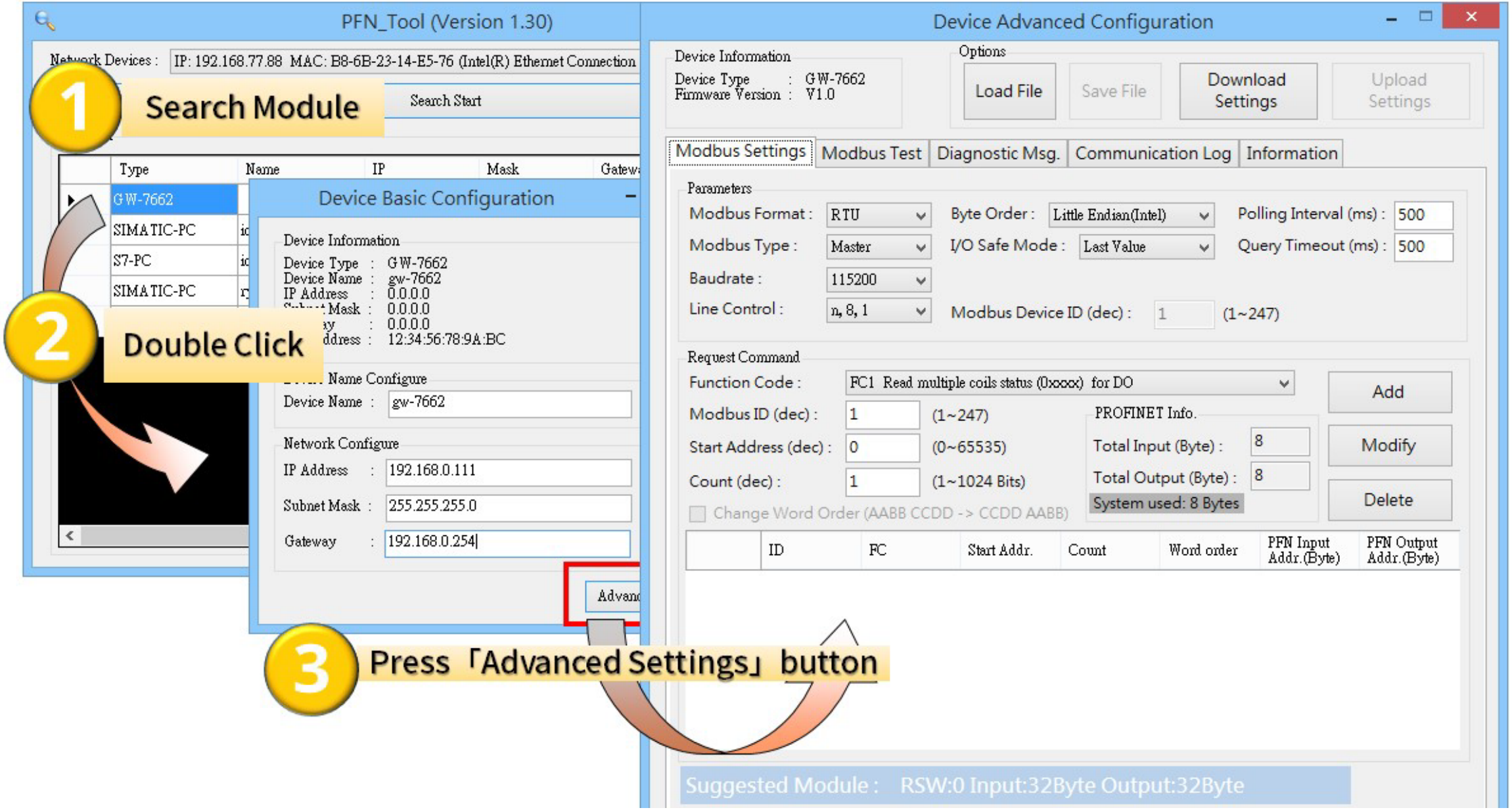
DI module (RTU Slave)
- **Modbus ID: 3**
- **Data Address: 10001~10014**
- **Data Length: 2**



PROFINET IO device (Slave) | **Modbus RTU Master**

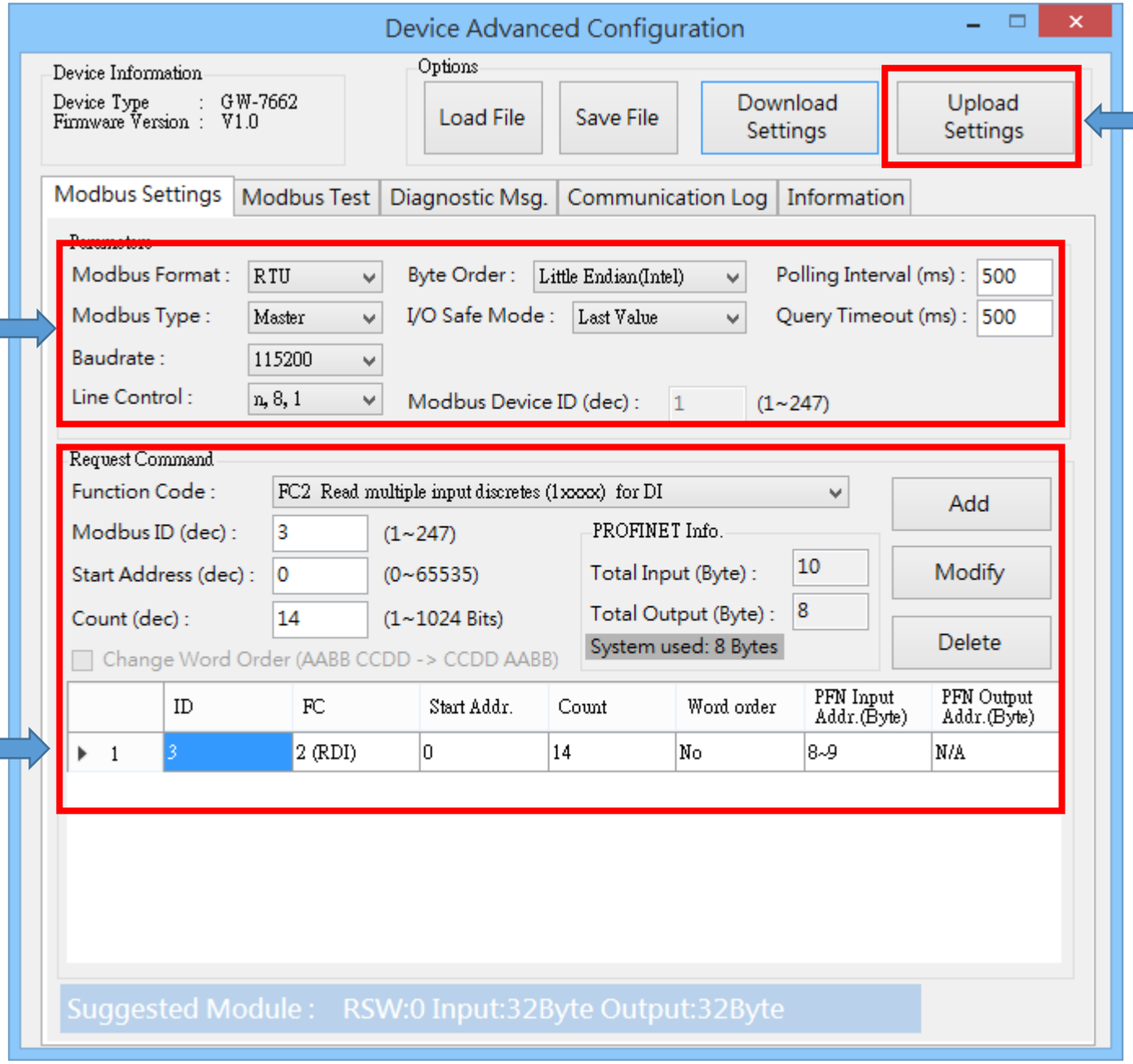
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Read 14-channel DI



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Read 14-channel DI



1. Set Modbus settings

2. Add Modbus Command

3. Upload

Read 14-channel DI

The first input 8 bytes and output 8 bytes are allocated for system. (1~8)
The 9th byte to the 32th byte are allocated for Modbus. (9~32)

Device overview

	Module	Rack	Slot	I address	Q address	Type	Order no.
	GW-7662	0	0			GW-7662 2-Port De...	GW-7662
	Internal	0	0 X1			GW-7662	
	RSW:0 Input:32Byte Output:32Byte_1	0	1	1...32	1...32	RSW:0 Input:32Byte...	

	N...	Address	Display format	Monitor value
1		%IB9	Hex	16#00
2		%IB10	Hex	16#00
3		%I9.0	Bool	FALSE
4		%I9.1	Bool	FALSE
5		%I9.2	Bool	FALSE
6		%I9.3	Bool	
7		%I9.4	Bool	FALSE
8		%I9.5	Bool	FALSE
9		%I9.6	Bool	FALSE
10		%I9.7	Bool	FALSE
11		%I10.0	Bool	FALSE
12		%I10.1	Bool	FALSE
13		%I10.2	Bool	FALSE
14		%I10.3	Bool	FALSE
15		%I10.4	Bool	FALSE
16		%I10.5	Bool	FALSE

IB9 => used to read DI 1~8
IB10 => used to read DI 9~14

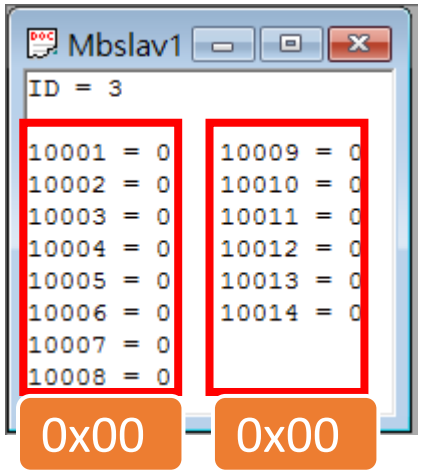
I9.0~I9.7 => used to read DI 1~8
I10.0~I10.5 => used to read DI 9~14

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Read 14-channel DI

PLC Read 0x00 from DI 1~8
PLC Read 0x00 from DI 9~14

Original DI value



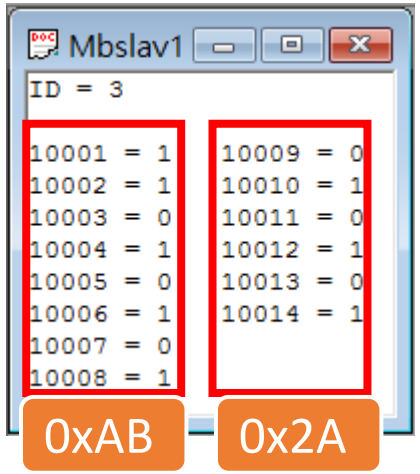
		N...	Address	Display format	Monitor value	M
1			%IB9	Hex	16#00	
2			%IB10	Hex	16#00	
3			%I9.0	Bool	FALSE	
4			%I9.1	Bool	FALSE	
5			%I9.2	Bool	FALSE	
6			%I9.3	Bool	FALSE	
7			%I9.4	Bool	FALSE	
8			%I9.5	Bool	FALSE	
9			%I9.6	Bool	FALSE	
10			%I9.7	Bool	FALSE	
11			%I10.0	Bool	FALSE	
12			%I10.1	Bool	FALSE	
13			%I10.2	Bool	FALSE	
14			%I10.3	Bool	FALSE	
15			%I10.4	Bool	FALSE	
16			%I10.5	Bool	FALSE	

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Read 14-channel DI

PLC Read 0xAB from DI 1~8
PLC Read 0x2A from DI 9~14

Change DI value



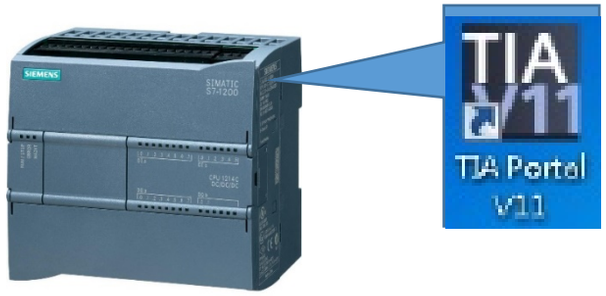
	i	N...	Address	Display format	Monitor value
1			%IB9	Hex	16#AB
2			%IB10	Hex	16#2A
3			%I9.0	Bool	TRUE
4			%I9.1	Bool	TRUE
5			%I9.2	Bool	FALSE
6			%I9.3	Bool	TRUE
7			%I9.4	Bool	FALSE
8			%I9.5	Bool	TRUE
9			%I9.6	Bool	FALSE
10			%I9.7	Bool	TRUE
11			%I10.0	Bool	FALSE
12			%I10.1	Bool	TRUE
13			%I10.2	Bool	FALSE
14			%I10.3	Bool	TRUE
15			%I10.4	Bool	FALSE
16			%I10.5	Bool	TRUE

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Read and Write 3-channel AO

SIMATIC S7-1200

PROFINET IO Controller
(Master)



PROFINET

GW-7662



Comport Setting:

115200, n, 8, 1

Modbus RTU

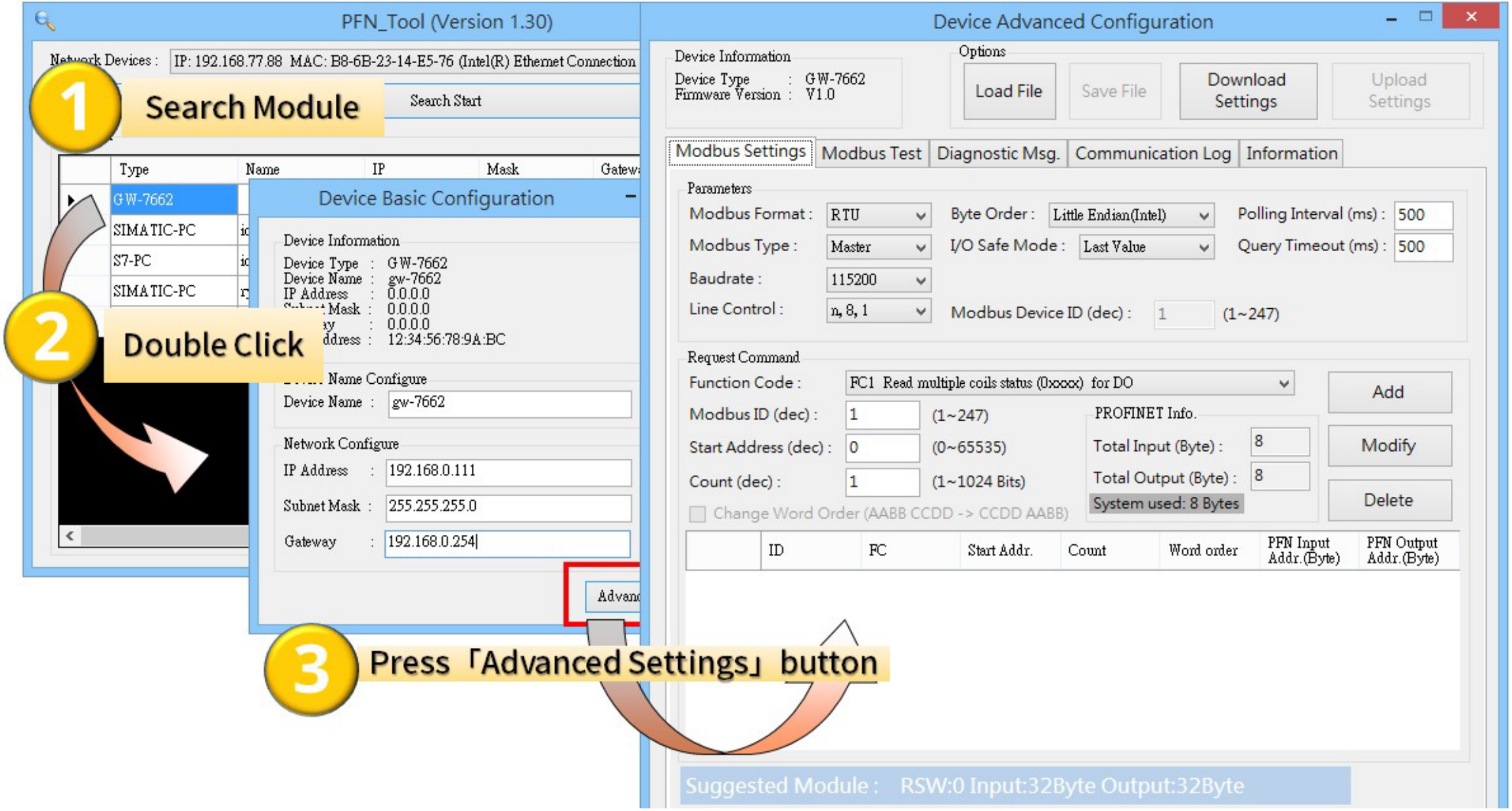
AO module (RTU Slave)
- **Modbus ID: 4**
- **Data Address: 40001~40003**
- **Data Length: 3**



PROFINET IO device (Slave) | **Modbus RTU Master**

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Read and Write 3-channel AO

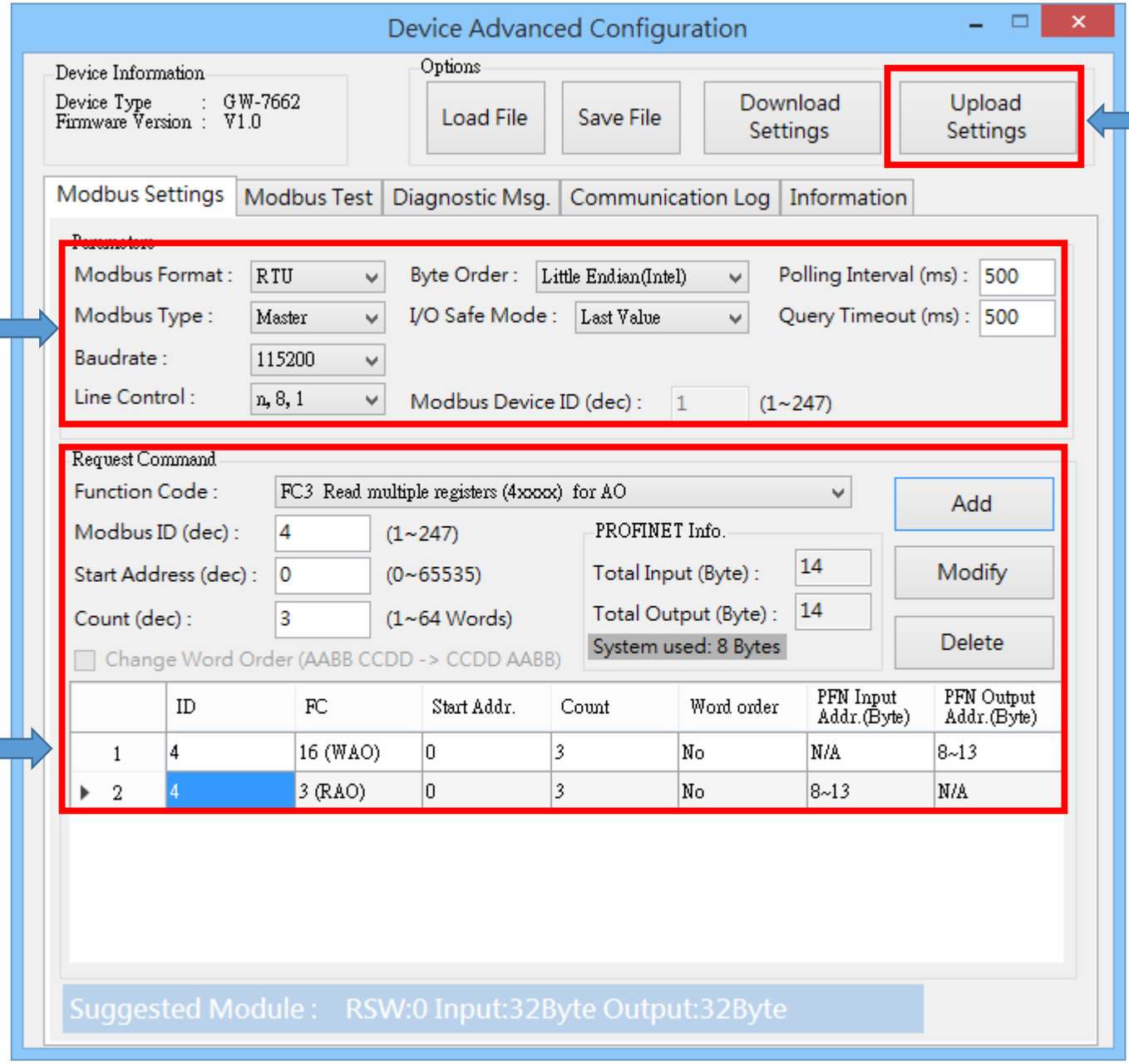


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Read and Write 3-channel AO

1. Set Modbus settings

2. Add Modbus Command



3. Upload

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Read and Write 3-channel AO

The first input 8 bytes and output 8 bytes are allocated for system. (1~8)
The 9th byte to the 32th byte are allocated for Modbus. (9~32)

Device overview

	Module	Rack	Slot	I address	Q address	Type	Order no.
	GW-7662	0	0			GW-7662 2-Port De...	GW-7662
	Internal	0	0 X1			GW-7662	
	RSW:0 Input:32Byte Output:32Byte_1	0	1	1...32	1...32	RSW:0 Input:32Byte...	

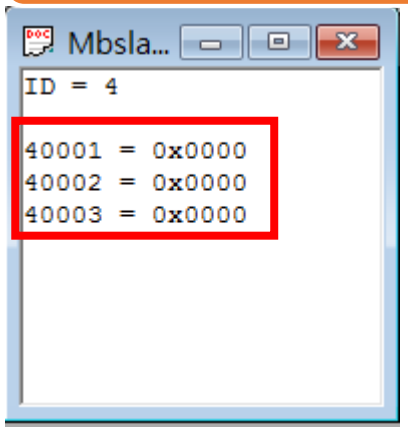
	Address	Display format
1	%QW9	Hex
2	%QW11	Hex
3	%QW13	Hex
4	%IW9	Hex
5	%IW11	Hex
6	%IW13	Hex

QW9 => used to write AO 1
QW11 => used to write AO 2
QW13 => used to write AO 3

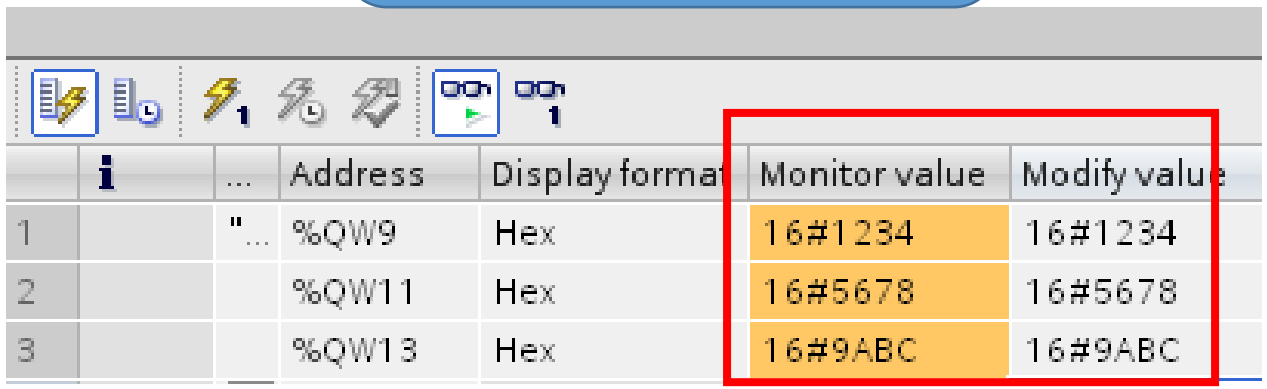
IW9 => used to read AO 1
IW11 => used to read AO 2
IW13 => used to read AO 3

Read and Write 3-channel AO

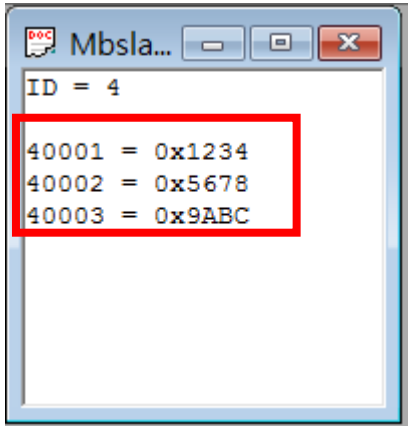
Original AO value



PLC Write 0x1234 to AO 1
PLC Write 0x5678 to AO 2
PLC Write 0x9ABC to AO 3



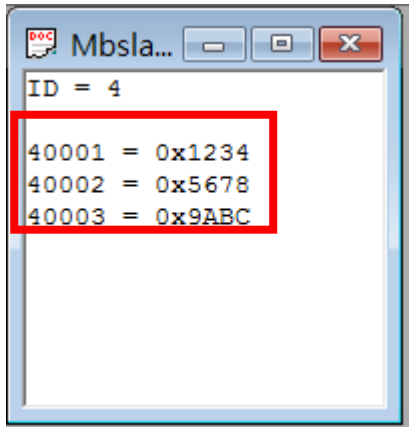
	i	...	Address	Display format	Monitor value	Modify value
1		"...	%QW9	Hex	16#1234	16#1234
2			%QW11	Hex	16#5678	16#5678
3			%QW13	Hex	16#9ABC	16#9ABC



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Read and Write 3-channel AO

PLC Read 0x1234 from AO 1
PLC Read 0x5678 from AO 2
PLC Read 0x9ABC from AO 3



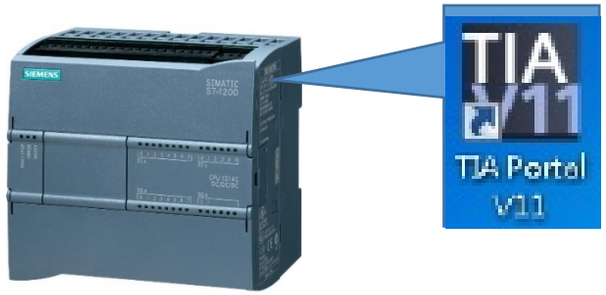
	i	...	Address	Display format	Monitor value	Modify value
1		"...	%QW9	Hex	16#1234	16#1234
2			%QW11	Hex	16#5678	16#5678
3			%QW13	Hex	16#9ABC	16#9ABC
4			%IW9	Hex	16#1234	
5			%IW11	Hex	16#5678	
6			%IW13	Hex	16#9ABC	

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Read 4-channel AI

SIMATIC S7-1200

PROFINET IO Controller
(Master)



PROFINET

GW-7662



Comport Setting:

115200, n, 8, 1

Modbus RTU

AI module (RTU Slave)

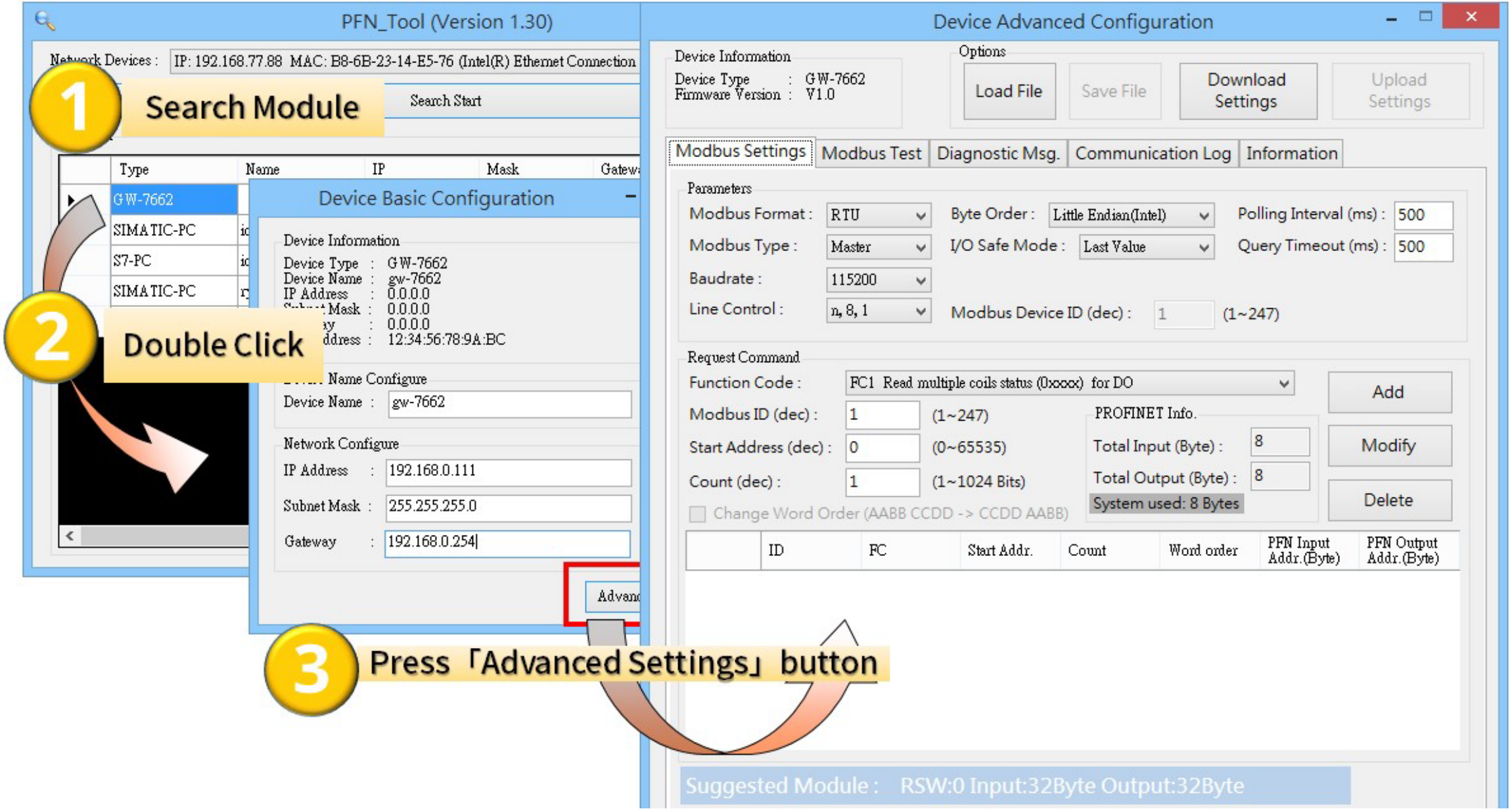
- **Modbus ID: 5**
- **Data Address: 30001~30004**
- **Data Length: 4**



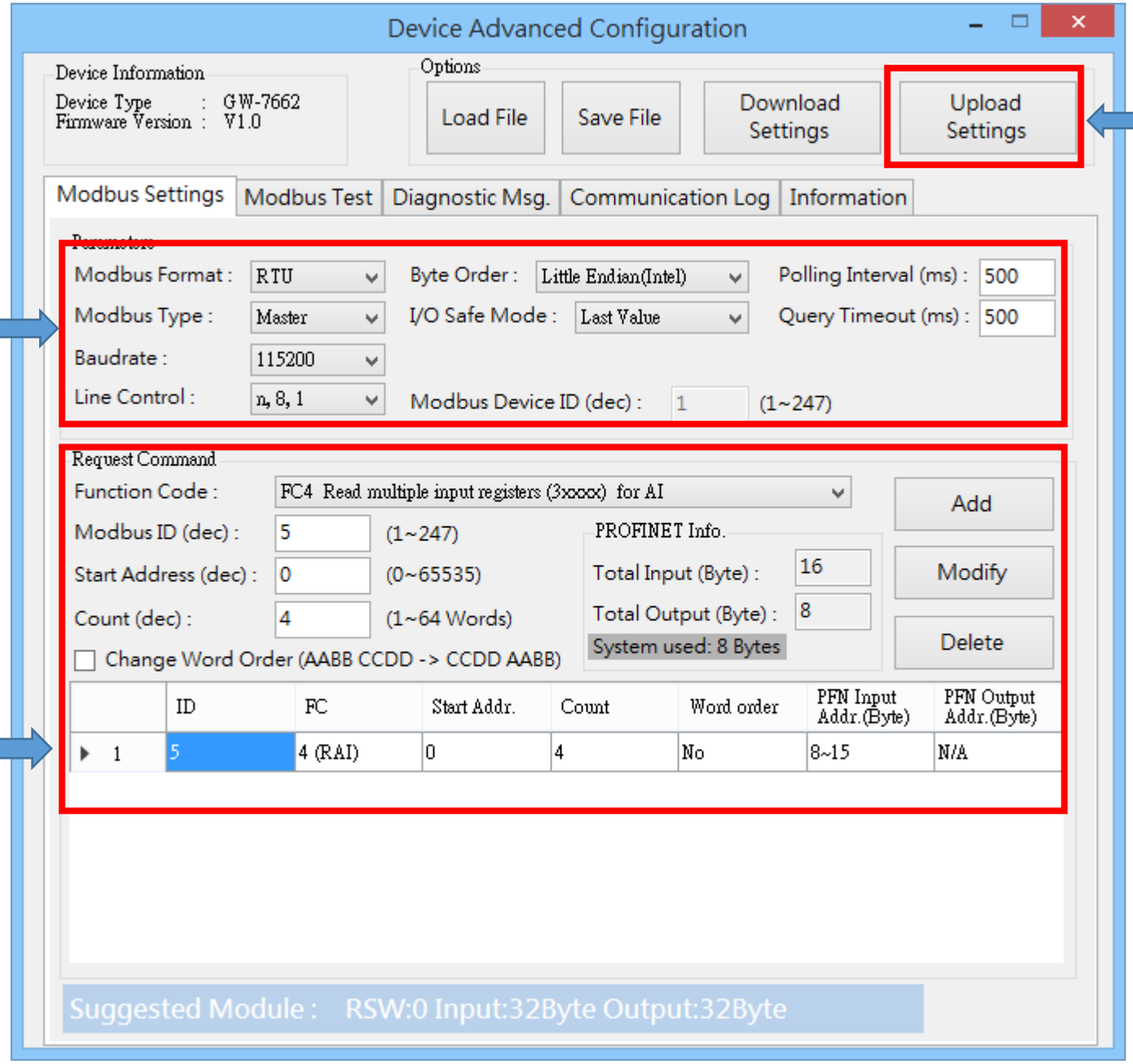
PROFINET IO device (Slave) | **Modbus RTU Master**

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Read 4-channel AI



Read 4-channel AI



1. Set Modbus settings

2. Add Modbus Command

3. Upload

Read 4-channel AI

The first input 8 bytes and output 8 bytes are allocated for system. (1~8)
The 9th byte to the 32th byte are allocated for Modbus. (9~32)

Device overview

	Module	Rack	Slot	I address	Q address	Type	Order no.
	GW-7662	0	0			GW-7662 2-Port De...	GW-7662
	Internal	0	0 X1			GW-7662	
	RSW:0 Input:32Byte Output:32Byte_1	0	1	1...32	1...32	RSW:0 Input:32Byte...	

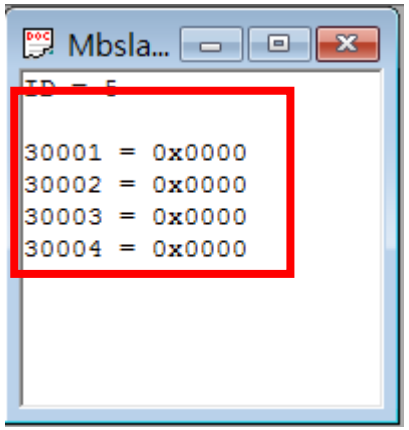
	Address	Display format	Monitor va
1	%IW9	Hex	16#0000
2	%IW11	Hex	16#0000
3	%IW13	Hex	16#0000
4	%IW15	Hex	16#0000

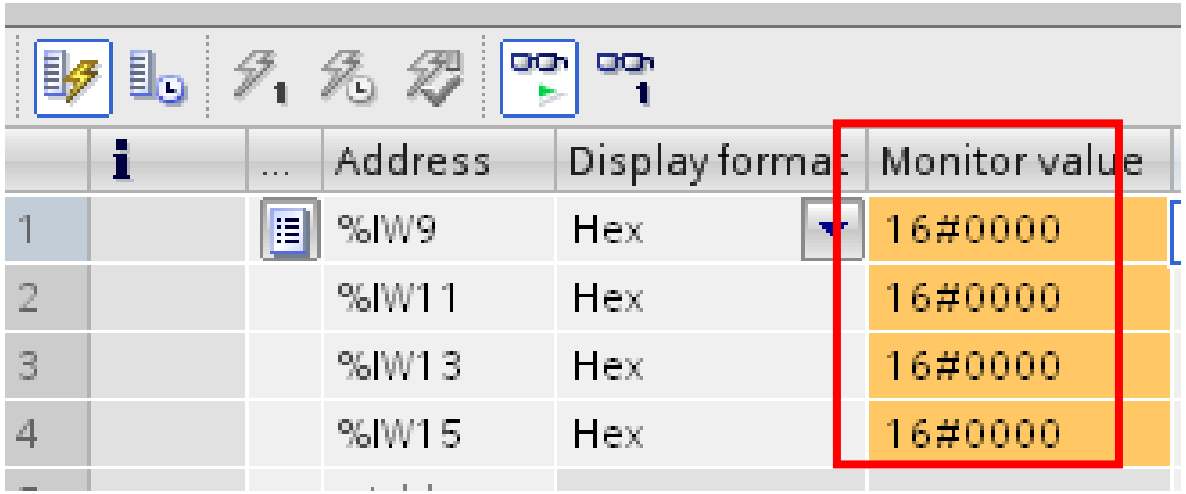
IW9 => used to read AI 1
IW11 => used to read AI 2
IW13 => used to read AI 3
IW15 => used to read AI 4

Read 4-channel AI

PLC Read 0x0000 from AI 1
PLC Read 0x0000 from AI 2
PLC Read 0x0000 from AI 3
PLC Read 0x0000 from AI 4

Original AI value



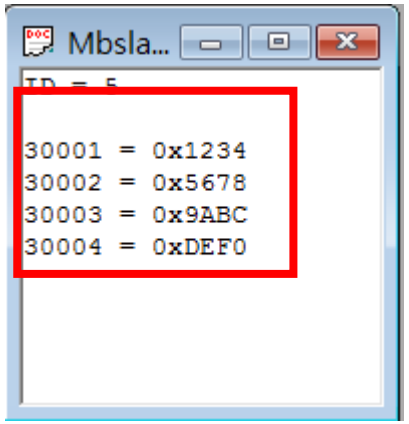


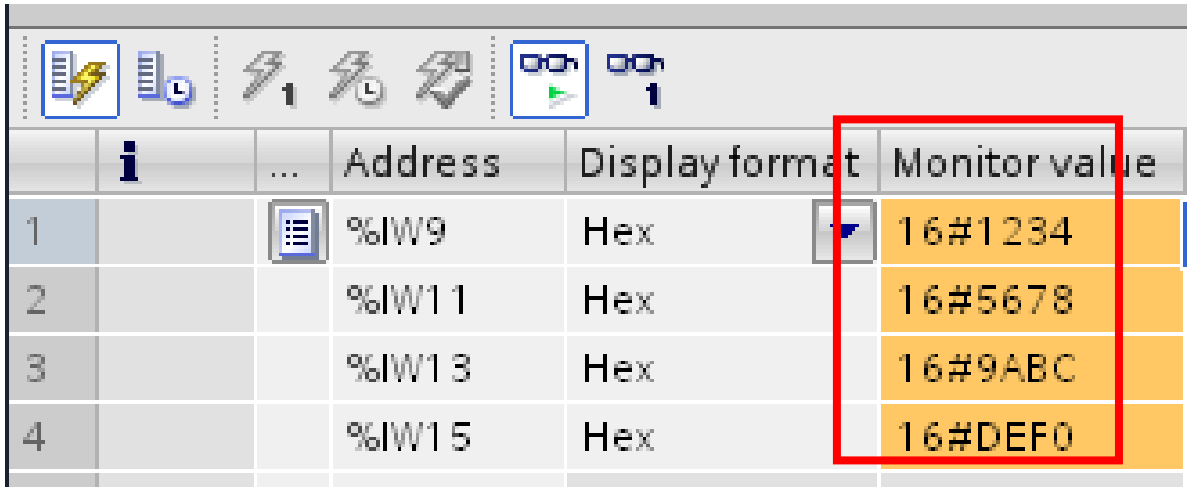
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Read 4-channel AI

PLC Read 0x1234 from AI 1
PLC Read 0x5678 from AI 2
PLC Read 0x9ABC from AI 3
PLC Read 0xDEF0 from AI 4

Change AI value





	i	...	Address	Display format	Monitor value
1			%IW9	Hex	16#1234
2			%IW11	Hex	16#5678
3			%IW13	Hex	16#9ABC
4			%IW15	Hex	16#DEF0

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