GW-7553 (Modbus TCP master) example for SIMATIC STEP 7

Example 1:Reads DO module data from GW-7553(Modbus FC01). Example 2: Reads DI module data from GW-7553(Modbus FC02). Example 3: Reads AO module data from GW-7553(Modbus FC03). Example 4: Reads AI module data from GW-7553(Modbus FC04). Example 5: Writes DO module data from GW-7553(Modbus FC05,15). Example 6: Writes AO module data from GW-7553(Modbus FC06,16). Example 1: PLC reads DO module data from GW-7553. (Modbus FC01)

Read a Modbus TCP DO module (PROFIBUS Slave & Modbus TCP/Master)



SIMATIC STEP7 Configuration:

Step 1: Setup the GW-7553 module

1. Select GW-7553 module



2. Add a System setting module

	=							
🔩 HW Config - [SIMAT]	IC 300 Station (Configuration)	S7_Pro3]						
🛄 Station Edit Insert P	LC <u>V</u> iew <u>O</u> ptions <u>W</u> indow <u>H</u> elp							
🗅 🖻 📽 🗣 🖏 🖨) 🖻 🕄 🏜 🏦 📳 🗖 ⁹	₩ №?						
					^			
= (U) UR						Find:	7553	
					_	-		
2 Cr0 3	PROFIBUS(1): DP master	: system (1)				Profile:	Standard	
2.2 $DI16/DX$		Y					🚊 🚡 G W	I-7553(DPV1)
2.4 Count	Ē (2	^{:) G ₩-75!} D	ouble	click				Universal module
3		1000 U.S.						System setting
4	teend	S	systen	i settin	9			Output Relay/Coil1 byte
								Output Relay/Coil2 byte
							🖥	Output Relay/Coil4 hyte
							👖	Output Relay/Coil5 byte
					_			Output Relay/Coil6 byte
					×		.	Output Relay/Coil7 byte
<u><</u>					>		···· 🛽	Output Relay/Coil8 byte
							· · · · J	Output Relay/Coil9 byte
(2) GW-7553(D	PV1)						<u>1</u>	Output Relay/Coil10 byte
Slot DP ID	Order Number / Designation	I Address	O Address	Comment			U	Output Relay/Coil11 byte
1 24DO	System setting	0						Output Relay/Coil12 byte
2 8DO	Output Relay/Coil1 byte	3						Output Relay/Coil13 byte
3 8DI	Input Relay/Coil1 byte	0						Output Kelay/Coil14 byte
4	· · ·							Output Relay/Coil15 byte

💵 HW Config - [SIMATIC 300 Station (Configuration) \$7_Pro3]		
💵 Station Edit Insert PLC View Options Window Help		
D 😅 🖫 🖳 🐘 🎒 🗈 🗈 🖬 🎰 👘 🎦 🞇 😒		
PROFIBUS(1): DP master system (1) 2.2 DPI 2.2 DDI 2.2 DDI 2.4 Count 3 4 	Find: Profile: tput	7553 Standard GW-7553(DPV1) Universal module System setting Output Relay/Coil-1 byte Output Relay/Coil-2 byte Output Relay/Coil-3 byte Output Relay/Coil-5 byte
(2) GW-7553(DP∀1)	-	Output Relay/Coil8 byte Output Relay/Coil9 byte Output Relay/Coil10 byte Output Relay/Coil10 byte
Slot DP ID Order Number / Designation I Address Q Address Comment 1 24DO System setting 02 1 2 8DO Output Relay/Coil1 byte 3 3 8DI Input Relay/Coil1 byte 0		Output Relay/Coil11 byte Output Relay/Coil12 byte Output Relay/Coil13 byte Output Relay/Coil14 byte
4		Output Relay/Coil-15 byte

3. Add "Output Relay/Coil - 1 byte" and "Input Relay/Coil - 1byte"



Step 2: Setup the parameters of the GW-7553

- 1. Double click GW-7553 icon
- 2. Select "Parameter Assignment"



3. Set common parameters of the GW-7553

Common parameters→

Baud rate: 115200; Parity: none; Data: 8 data bit; Stop bit: 1 stop bit; Modbus type: Master

Modbus Format: Modbus TCP; Byte Order: Big Endian

Properties - DP slave		X
General Parameter Assignment		
Parameters	Value	~
🖃 🔄 Station parameters		
– 📺 DP Interrupt Mode	DPVO	
🕂 🧰 General DP parameters		
🔁 🔄 Device-specific parameters		
— 🗐 baud rate	115200 baud	
_ 📺 parity	none	
— 🗐 data	8 data bit	
— 🗐 stop bit	1 stop bit	
— 📺 Modbus Type	Master	
— 🗑 Modbus Format	Modbus TCP	
_≝ I/O Safe Mode	Retain Last Value	
Byte Order	Big Endian (Motorola format)	
- 📺 Output Data Mode	Manual	
- Modbus Device ID (S)	1	
— Modbus Polling Interval(ms) (M)	500	
Query timeout Value(ms)(M)	500	
TCP Connect Num(T)(M)	1	
OK	Cancel H	elp

4. Set module parameters of the GW-7553

(1)Double click "Output Relay/Coil – 1 byte" module

(2)Select "Parameter Assignme	nt"	
🙀 H W Config - [SIMATIC 300 Station (Configuration)) \$7_Pro3]	
III Station Edit Insert PLC View Options Window H	elp	
D 😅 💱 📱 🖏 🥌 🛯 🖻 🖻 👘 🏜 👔 🗖	₩ №?	
🚍 (0) UR	Properties - DP slave	
ROFIBUS(1): DP master system (1)	Address / ID Parameter Assignment	ct "Parameter
2.2 DP 2.2 DI16DX	Parameters	gnment
	Device-specific parameters E Modbus Slave Device ID (M) E Start Address (M)	20
Double click	□ NO. of Relay/Coil (M) □ TCP_Connect_Index(T)(M)	8 BITS 1
module name	User_Prm_Data (0 to 4)	02,00,00,38,01
(2) W-7553(DPV1) Slot DP 1 24DC System setting 2 BDO Output Relay(Coil-1 byte		
3 8DI Input Relay/Coil1 byte 4		CancelHelp
7		Innut Kelay/Coil17 hv

5. Setup "Output Relay/Coil – 1 byte" module parameter

Module parameters→

Modbus Slave Device ID: 2; Slave Address: 0 (Protocol address (base 0))

roperties - DP slave 🛛 🗙				
Address / ID Parameter Assignment				
Parameters	Value			
E Station parameters				
□- ☐ Device-specific parameters □- [] Modbus Slave Device ID (M)	2			
- E Start Address (M)	0			
- NO. of Relay/Coil (M)	8 BITS			
LEI ICP_Connect_Index(I)(M)	1			
LE User_Prm_Data (0 to 4)	02,00,00,38,01			
OK	Cancel Help			

- 6. Set module parameters of the GW-7553
- (1)Double click "Input Relay/Coil 1 byte" module
- (2)Select "Parameter Assignment"

🕀 HW Config - [SIMATIC 300 Station (Configuration	1) \$7_Pro3]	
💵 Station Edit Insert PLC View Options Window I	lelp	
] ‱ №	
0) UR 1 2 CPU 31 X2 DP 2.2 DJ1607X 2.4 Count 4 - Double click	Properties - DP slave Address / ID Parameter Assignment Select "Parameter Parameters Assignment Battion parameters Bevice-specific parameters Batt Address (M) 0 Batt Address (M) 0	
modulo nomo	TCP_Connect_Index(T)(M) 1	
module name	User_Prm_Data (0 to 4) 02,00,00,39,01	
(2) C W-7553(DPV1) Slot DP ID Order Number / Designation 1 24DO System setting 2 8DO Output Relay/Coil1 byte 3 8DI Input Relay/Coil1 byte 4		
6	OK Cancel	Help
17	Innut Relay	w/Coil17 hyte

7. Setup "Input Relay/Coil – 1 byte" module parameter

Module parameters→

Modbus Slave Device ID: 2; Slave Address: 0 (Protocol address (base 0))

Module Type: Read DO, click ok.

Properties - DP slave	×
Address / ID Parameter Assignment	
Parameters Station parameters Device-specific parameters Modbus Slave Device ID (M) Start Address (M) NO. of Relay/Coil (M) Module Type (M) TCP_Connect_Index(T)(M) Hex parameter assignment User_Prm_Data (0 to 4)	Value 2 0 8 BITS Read DO 1 02,00,00,39,01
ОК	Cancel Help

Step 3: Download the HW settings into SIMATIC PLC

1. Save and Compile

<u>O</u> ł	н	V Con	ufig -	[SIMA	TIC	300 St	ation (Co	nfig	urati	on)	S7_Pro1]				
00	<u>S</u> ta	ation	<u>E</u> dit	Insert	PLC	<u>V</u> iew	<u>Options</u>	<u>W</u> in	dow	<u>H</u> elp					
] [<u>N</u> ew					Ctrl+N Ctrl+O		B D (🖁 💦				
		Open.	 ONLI	NF			CIII+O							^	
		<u>C</u> lose	011 <u>0</u> 1												Find:
		<u>S</u> ave							[1): D	P maste	er system (1)				Profile:
		Save a	and Co	ompile			Ctrl+S					_			
		Prope	rties							₫ (2) 0	3₩-75!				
		Impor								2					
	L.	Expor								tend .	- Contraction				
		Consi	stency	C <u>h</u> eck			Ctrl+Alt+H	٢							
		Check	CiR	Compat	ibility		Ctrl+Alt+H	7							
		Print					Ctrl+P							~	
<	1	Print I	Previe	<u>w</u>										>	
	_	Page S	Setup.												
	4	<u>1</u> \$7_3	Pro1V	SIMATI(C 300	Station									
	:	<u>2</u> \$7_	Pro2V	SIMATI(C 300	Station			on		I Address	Q Address	Comment		
		<u>3</u> \$7_	Pro3₩	SIMATI(C 300 (Station			_			02		_	
	-	<u>4</u> \$7_	Pro4%	SIMATI(C 300	Station					0	5			
		Exit					Alt+F4								
	5														

2. HW settings into SIMATIC PLC

🖳 HW Config - [SIMAT	IIC 300 Station (Configuration) S7_Pro3]	
🛄 Station <u>E</u> dit Insert I	<u>PLC V</u> iew Options <u>W</u> indow <u>H</u> elp	
🗅 😅 🔓 🖬 🖳 ,	Download Ctrl+L	
	<u>Upload</u>	· · · · · · · · · · · · · · · · · · ·
🚍 (0) UR	Download Module Identification	Find:
1	Upload Module Ide <u>n</u> tification to PG	
	<u>F</u> aulty Modules	Profile:
2.2 DI16/D	Module Information Ctrl+D	
<u>2.4</u> <u>COUDI</u> 3	Operating Mode Ctrl+I	
4	Clean/ <u>R</u> eset	
	Set Time of D <u>ay</u>	
_	<u>M</u> onitor/Modify	
_	Updat <u>e</u> Firmware	
	Save De <u>v</u> ice Name to Memory Card	
<	Ethernet +	
(2) GW-7553	PROFIBUS	
Slot 🚺 DP ID	Save Service Data	Address Comment
1 24D0	System setting 0	.2
2 8DO	Output Relay/Coil1 byte 3	
3 8DI	Input Kelay/CoilI byte U	
4		

SIMATIC Manager - [\$7_6W-7552 C:\Program Files\Siemens\Step7\s7proj\\$7_6W-~1]						
🎒 File Edit Insert PLC	<u>Y</u> iew <u>Options</u> <u>Window</u> <u>H</u> elp	- 8 ×				
CPU313C-2DF Sources Sources Sources Sources Sources Sources Sources	Image: Provide filter of the second seco					
	Delete Del Insert New Object Organization Elock PLC Function Block Rewire Function Compare Blocks Data Block Reference Data Data Type Check Block Consistency Variable Table					
	Rename F2 Object Properties Alt+Return Special Object Properties					
Inserts Organization Block at the	e cursor position.	11.				

Step 4: Insert a new Organization Block (OB1,OB82,OB86)

Properties - Organization Block							
General - Part 1 General	Part 2 Calls Attributes						
<u>N</u> ame:	OBI						
Symbolic Name:							
Symbol <u>C</u> omment:							
Created in <u>L</u> anguage:	LAD						
Project path:							
Storage location of project:	C:\Program Files\Siemens\Step7\s7proj\S7_Pro1						
	Code Interface						
Date created:	U5/13/2013 11:02:41 AM						
Last modified:	05/13/2013 11:02:41 AM 05/13/2013 11:02:41 AM						
C <u>o</u> mment:	·	1					
OK	Cancel Help						



Step 5: Edit OB1

Variables used in the example LD Program:

		Name	Data T y p	e Address	Comment
		END	Bool	20.0	
(1	INIT	Bool	20.1	
	1	Tri	Int	22.0	
		DIValue	Byte	24.0	

OB1 : "Main Program Sweep (Cycle)"

PROFIBUS Slave Modbus Master

Network 1 : Reset Counter(Cl)





Network 2: Title:



Network 3: QBD add "1" then PLC will send QW3 out.

l byte DO



Network 4 : Timer T1 & T2





Network 5: Counter Cl

```
If counter(Cl) add "l" and Tri will add "l" ,too.
```



Network 6: Compare Tri & 256

If Tri is equal to 256,Cl will reset



Step 6: Download the settings into SIMATIC PLC

₩¥ I	/db/	STLA	BD -	[OE	1 "Су	cle E	Executio	n" S	7_Pro1\SIMATIC	300 Station\CPU	313C-2 DP(1)\\0B1]		
	File	<u>E</u> dit	Insert	PLC	<u>D</u> ebug	⊻ie	w <u>O</u> pti	ons <u>W</u> i	ndow <u>H</u> elp					
Ľ	õ	-		Ι)o <u>w</u> nload				Ctrl+L	(»! 🔲 🗖	₩0 - /-	-0 🕾 🖕	⊥î H: \?	
			2	elect <u>O</u> nlii	ne CP	U			ents Of: 'En	vironment\I	nterface\TE	MP '		
				ł	.stablish C	onneo	ction to C	onfigure	acru	Name	Data Tyne	Address	Comment	
		New net Bit log Compe Conve: Counte DB cal Jumps Integer Floatin Move Progra Shift/R Status I Timers Status I Timers Status I Timers B blo SFC blo SFE blo SFC blo SFC blo SFC blo SFC blo SFC blo Librari	etwork ic rrator rter 1 function g-point m contr otate bits ic gic cks cks ocks ocks ocks le instan es	I I I I I I I I I I I I I I I I I I I	istablish C CPU Messes Display Foi <u>A</u> onitor/M fod <u>u</u> le Init)perating 1]ear/Rese [*] et Time o	onnec ges cre Va odify forma Mode. t f Da <u>v</u> .	alues Variables tion Modbu Rese	s s fr Ma s fr Ma fr Ma s fr Ma fr Ma fr Ma s fr Ma fr	Cttl+Alt+F Cttl+D Cttl+D Cttl+I ister : Reset Counter ter (Cl)	(C1)	Pata Type Int Date Bool Recol #INIT (S)- Cl	Address 10.0 12.0 20.0 20.1	Comment Maximum cycle time Date and time OB1 s	of OB1 (milliseconds) started
									L		(R)			

Step 7: Make sure the RUN LED of the GW-7553 is on and the switch of the GW-7553 is at





Step 8: Connect with GW-7553 and Utility

1. Set the Com Port Setting of the Utility



2.Click connect.

🍓 Profibus/Modbus Gateway Utilit	у				
Communication IP setting Safe value :	setting View Help				
Connect Disconnect	Com Port Setting				
Exit	Port : Com1 💌 Baudrate : 115200 💌 Parity : No	one 💌			
	Data bit : 8 databit 💌 Stop bit : 1 stopbit 💌				
[Item Value (State)				
	🎾 Modbus Type				
	🌮 Modbus Format				
	🎾 I/O Value for Stop Mode				
	🎾 Byte Order				
	🎾 Output Data Mode				
	P Modbus Device ID (5)				
	🌮 Poll interval time (M)				
	🌮 Time out value (M)				
	🌮 Module count				
	P Tcp connect num (T)(M)				
	Module State : 🔴 Com P	ort State : 🔴			
Com Port isn't open !					

3. Connection success

🍓 Profibus/Modbus Gateway Utili	ty			
Communication IP setting Safe value	setting View Help			
GW-7553	Com Port Setting Port : Com1 Baudrate : Data bit : 8 databit Stop bit :	115200 V Parity : None V		
	Item	Value (State)		
Module 3	🔊 Modbus Type	Master		
	🥔 Modbus Format	тср		
	🎾 I/O Value for Stop Mode	Retain Last Value		
	🥔 Byte Order	Big Endian (Motorola format)		
	🎾 Output Data Mode	Manual		
	🎾 Modbus Device ID (S)	1		
	🎾 Poll interval time (M)	500ms		
	🎾 Time out value (M)	500ms		
	🎾 Module count	3		
	🎾 Tcp connect num (T)(M)	1		
	Module State: 🔴	Com Port State : 🌑		
Module is connected	Receive file name er	nor		

🍓 Profibus/Modbus Gateway Util	ity	
Communication IP setting Safe value	e setting View Help	
GW-755 New setting Load from file	om Port Setting	
Module 1	Port : Com1 Baudrate Data bit : 8 databit Stop bit	: 115200 ▼ Parity : None ▼ : 1 stopbit ▼
Madula 2	Item	Value (State)
	🎾 Modbus Type	Master
	🎾 Modbus Format	тср
	🎾 I/O Value for Stop Mode	Retain Last Value
	🥔 Byte Order	Big Endian (Motorola format)
	🎾 Output Data Mode	Manual
	🎾 Modbus Device ID (S)	1
	🔊 Poll interval time (M)	500ms
	🎾 Time out value (M)	500ms
	🎾 Module count	3
	🎾 Tcp connect num (T)(M)	1
	Module State: 🔵	Com Port State : 🛛 🌑
Module is connected	Receive file name e	nor

4. Click IP setting→Load from device to show IP setting dialog

5. Set the IP of the Modbus TCP Slave and click "Save to Device" button to save the settings.

IP Setting		×
Local IP Setting		
IP 192 . 168 . 255 . 2	2	
MASK: 255 . 255 . 0 . 0]	
GATEWAY 192 . 168 . 0 . 1		
step1. Set	IP of Modbus TCF)
Remote IP Setting slave		
P(1): 192 . 168 . 0 . 123	Time out value (ms) : 1500	ReConnect time (ms) : 8000
IP(2): 192 . 168 . 0 . 100	Time out value (ms) : 1500	ReConnect time (ms) : 8000
IP(3): 192 . 168 . 0 . 100	Time out value (ms) : 1500	ReConnect time (ms) : 8000
IP(4): 192 . 168 . 0 . 100	Time out value (ms) : 1500	ReConnect time (ms) : 8000
IP(5): 192 . 168 . 0 . 100	Time out value (ms) : 1500	ReConnect time (ms) : 8000
IP(6): 192 . 168 . 0 . 100	Time out value (ms) : 1500	ReConnect time (ms) : 8000
IP(7): 192 . 168 . 0 . 100	Time out value (ms) : 1500	ReConnect time (ms) : 8000
IP(8): 192 . 168 . 0 . 100	Time out value (ms) : 1500	ReConnect time (ms) : 8000
	step2. Save the to GW-7553	setting Save to File Save to Device

Step 9: Set the switch of the GW-7553 to Normal Mode then reset the power of GW-7553.



Now the setting procedure has been finished and the user can read the data to the Modbus DO module at address IB0.

Network 2: Title:



Example 2: PLC reads DI module data from GW-7553. (Modbus FC02)

Read a Modbus TCP DI module (PROFIBUS Slave & Modbus TCP/Master)



SIMATIC STEP7 Configuration:

Step 1: Setup the GW-7553 module

1. Select GW-7553 module



2. Add a System setting module

R HW Config - [SIMATIC 300 Station (Configuration) \$7_Pro3]		
💵 Station Edit Insert PLC Yiew Options Window Help		
D 😅 💱 📓 🦣 🚔 🗈 🗈 🖬 🏜 🏙 🋐 📼 🞇 💦		
(0) UR [1 2 [CPU 3] X2 DP PROFIBUS(1): DP master system (1)		Find: 7553 Profile: Standard
2.2 DI16/DX 2.4 Count 3 4 c		
Double click "System		⊕ ∰ GW-7552 ⊟ ∰ GW-7553(DPV1)
setting" —	~	Universal module
		Output Relay/Coil2 byte
(2) GW-7553(DP∀1)	_	Output Relay/Coil3 byte Output Relay/Coil4 byte Output Relay/Coil4 byte
Slot DP ID Order Number / Designation I Address Q Address Comment		Output Relay/Coil5 byte
1 24DO System setting 02	•	Output Relay/Coil7 byte
		Output Relay/Coil8 byte

3. Add "Input Relay/Coil—1 byte" module

HW Config - [SIMATIC 300 Station (Configuration) S	_Pro3]		
💵 Station Edit Insert PLC View Options Window Help			
D 📂 🐂 🖷 🐘 🎒 🖻 🖻 🏜 🎰 🚯 📼 😪	N ?		
		<u>∧</u>	
(0) UR		Find:	7553
PROFIBUS(1): DP master sy	stem (1)	Profile:	Standard
			Output Relay/Coil28 hyte
$\frac{2.2}{24} \qquad \qquad$	W-75		Output Relay/Coil29 byte
3			Output Relay/Coil30 byte
4	DAS		— 🚺 Output Relay/Coil31 byte
			🔤 🚺 Output Relay/Coil32 byte
Do	uble click "Input		Input Relay/Coil1 byte
	able click hiput		Input Relay/Coil2 byte
Re	lav/Coil - 1bvte		Input Relay/Coil3 byte
	, , ,,	~	Input Relay/Coil4 byte
<	>		Input Relay/Coll> byte
		-	Input Relay/Coil0 byte
(2) GW-7553(DPV1)			Input Relay/Coil8 byte
			Input Relay/Coil9 byte
Slot 🚺 DP ID Order Number / Designation I	Address Q Address Comment		Input Relay/Coil10 byte
1 24DO System setting	02		Input Relay/Coil11 byte
2 8DI Input Relay/Coil1 byte 0			📕 Input Relay/Coil12 byte
3			Innut Relaver oil13 hyte

Step 2: Setup the parameters of the GW-7553

1. Double click GW-7553 icon

2. Select "Parameter Assignment"

HW Config - [SIMATIC 300 Station (Configuration) S7_Pro3]							
🛄 Station Edit Insert PLC View Options Window Help							
D 😂 🗣 🗣 🥞 🖻 🖻 🏜 🎰 🚺 🗖 器 😥							
0) UR 1 CPU 3 X2 DP PROFIBUS(1): DP master system (1)	General Parameter Assignment Select "Parameter						
2.2 DII60X 2.4 Count 3 GW-7553 c con	Image: Station parameters Image: Station parameters Image: Station parameters Image: Station parameters <td></td>						
Image: Constraint of the second sec	Image: Model with the second secon						
6 7	Cancel	netp					

3. Set common parameters of the GW-7553

Common parameters→

Baud rate: 115200; Parity: none; Data: 8 data bit; Stop bit: 1 stop bit; Modbus type: Master Modbus Format: Modbus TCP; Byte Order: Big Endian

Properties - DP slave		2
General Parameter Assignment		
Parameters	Value	Ī
🖃 🔄 Station parameters		
— 📰 DP Interrupt Mode	DPVO	
🛨 🧰 General DP parameters		
🔁 📇 Device-specific parameters		
—∭ baud rate	115200 baud	
parity	none	
— 📰 data	8 data bit	
—∭≣ stop bit	1 stop bit	
— Modbus Type	Master	
–∭ Modbus Format	Modbus RTU	
–≝ I/O Safe Mode	Retain Last Value	
–) _ Byte Order	Big Endian (Motorola format)	
— 🗐 Output Data Mode	Manual	
- Modbus Device ID (S)	1	
- Modbus Polling Interval(ms) (M)	500	
- Query timeout Value(ms)(M)	500	
TCP Connect Num(T)(M)	1	
OK	Cancel Help	

- 4. Set module parameters of the GW-7553
- (1)Double click "Input Relay/Coil—1 byte" module
- (2)Select "Parameter Assignment"

mal Stanou Fau Tuseu TrC Atem Chaous aluadon Helb	
D 😂 🖫 🖳 🐘 🎒 🗈 🗈 🛯 🏜 💼 👔 📼 😤 📢	
PROFIBUS(1): DP master system (1) I Properties - DP slave Address / ID Parameter Assignment Select "Parameter Address / ID Parameter Assignment Select "Parameter I Image: Comparison of the system (1) Image: Comparison of the system (1) Image: Comparison of the system (1) Image: Comparison of the system (1) Image: Comparison of the system (1) Image: Comparison of the system (1) Image: Comparison of the system (1) Image: Comparison of the system (1) Image: Comparison of the system (1) Image: Comparison of the system (1) Image: Comparison of the system (1) Image: Comparison of the system (1) Image: Comparison of the system (1) Image: Comparison of the system (1) Image: Comparison of the system (1) Image: Comparison of the system (1) Image: Comparison of the system (1) Image: Comparison of the system (1) Image: Comparison of the system (1) Image: Comparison of the system (1) Image: Comparison of the system (1) Image: Comparison of the system (1) Image: Comparison of the system (1) Image: Comparison of the system (1) Image: Comparison of the system (1) Image: Comparison of the system (1) Image: Comparison of the system (1) Image: Comparison of the system (1) Image: Comparison of the system (
(2) GW-7553(DPV 1) Slot DP ID Order Number / Designation I Address 1 24DO System setting 2 8DI Input Relay/Coil-1 byte 0 3 4 4 5 6 0 7 0 0 0K Cancel He 0 0Utput Relay/Coil-15 byte	p

5. Setup "Input Relay/Coil—1 byte" module parameters

Module parameters→

Modbus Slave Device ID: 2; Slave Address: 0 (Protocol address (base 0))

Module Type: Read DI, click ok.

Properties - DP slave	X
Address / ID Parameter Assignment	
Parameters	Value
🖃 🔄 Station parameters	
📥 🔄 Device-specific parameters	
- Modbus Slave Device ID (M)	2
- Start Address (M)	0
— NO. of Relay/Coil (M)	8 BITS
- Module Type (M)	Read DI
$ \ \ \ \ \ \ \ \ \ \ \ \ \ $	1
📥 🔄 Hex parameter assignment	
⊥ ∐ User_Prm_Data (0 to 4)	02,00,00,3A,01
,	
OK	Cancel Help

Step 3: Download the HW settings into SIMATIC PLC

1. Save and Compile

0 4 3 1	HW Config - [SIMATIC 300 Station (Co	figuratio	on) S7	_Pro1]				
ĐÔŋ	<u>Station</u> <u>E</u> dit Insert <u>P</u> LC <u>V</u> iew Options	<u>W</u> indow	<u>H</u> elp					
	New Ctrl+N Open Ctrl+O Open ONLINE Close			₩?			^	
ļ	Save Save and Compile Ctrl+S Properties		PROFIBUS(1): DP master system (1)					
	Import Export		(2) G ₩-75!					
	Consistency Check Ctrl+Alt+K Check CiR Compatibility Ctrl+Alt+F							
<	Print Ctrl+P Print Preview Page Setup							
	1 S7_Pro1\SIMATIC 300 Station 2 S7_Pro3\SIMATIC 300 Station 3 S7_Pro4\SIMATIC 300 Station 4 S7_Pro4\SIMATIC 300 Station	on	I.	Address	Q Address 02	Comment		
	Exit Alt+F4							
5								
8 9 1	0							
$\left \frac{\overline{1}}{1} \right $	1 2 3							

2. HW settings into SIMATIC PLC

🖳 HW Config - [SIMATIC 300 Station (Configuration) \$7_Pro3]									
🔟 <u>S</u> tation <u>E</u> dit Insert	<u>PLC ⊻</u> iew <u>O</u> ptions <u>W</u> indow <u>H</u> elp								
🗅 🚅 🔓 🖬 🖏 .	<u>D</u> ownload	Ctrl+L							
	<u>U</u> pload	t		~	I				
🚍 (0) UR	Download Module Identification				Find:				
	Upload Module Ide <u>n</u> tification to PG								
$X_2 \qquad \square DP =$	Faulty Modules				Profile:				
2.2 DI16/D	Module Information	Ctrl+D							
2.4 Count	Operating Mode	Ctrl+I							
4	Clear/ <u>R</u> eset	I							
<u> </u> <u>-</u> <u>∼</u> <u>∼</u>	Set Time of Day	I							
	<u>M</u> onitor/Modify								
	Updat <u>e</u> Firmware								
	Save De <u>v</u> ice Name to Memory Card			~					
<	Ethernet	•		>					
(2) G₩-7553	PROFIBUS	•							
Slot DP ID	<u>S</u> ave Service Data		Q Address	Comment					
1 24DO	System setting		02	<u>^</u>					
2 8DI	Input Relay/Coil1 byte	0							
3									

Step 4: Insert a new Organization Block (OB1,OB82,OB86)



Properties - Organization Block									
General - Part 1 General	- Part 2 Calls Attributes								
<u>N</u> ame:	OB1								
Symbolic Name:									
Symbol <u>C</u> omment:									
Created in <u>L</u> anguage:	LAD								
Project path:		1							
Storage location of project:	C:\Program Files\Siemens\Step7\s7proj\S7_Pro1	1							
D () ()	Code Interface								
Late created:	05/10/2013 09:45:53 AM 05/10/2013 09:45:53 AM								
Comment:	Contrazoro Contra	-							
Comment.	· · · · · · · · · · · · · · · · · · ·								
) <u> </u>								
OK	Cancel Help								

SIMATIC Manager - [S7_Pro1	1 — C:\Program Files\Siemens\Step7\s7proj\S7_	Pro1]	
🎒 File Edit Insert PLC View	<u>Options W</u> indow <u>H</u> elp		
🗅 😂 🎛 🛲 👗 🖻 🛍	🚵 🧟 💁 🕒 🔂 👬 🛍 🤁 < No Fi	ter > 💌 🏹	1 號 🐵 🖷 🖻 🔟 📢
Image: Signature Signature Image: Signature Signatu	System data	32 OB86	

Step 5: Edit OB1

🗮 LAD/STL/FBD - [OB1 "Cycl	le Execution" S7_Pro1\SIMATIC 300 Station\CPU 313C-2 DP(1)\\OB1]										
🖬 File Edit Insert PLC Debug	Yiev Options Window Help										
D 🛎 🔓 🖬 🎒 👗 🖻 🖻	♡♀ \$#\$\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$										
Contents Of: 'Environment\Interface\TEMP'											
	- DB1_RESERVED. Name Data Type Address Comment										
He New network	BI_PREV_CYC BOB_MIN Int 8.0 Minimum cycle time of OB1 (milliseconds)										
	DBL_MIN_CYCL THE OBL_MAX Int 10.0 Maximum cycle time of OB1 (milliseconds)										
Converter	a OBI_MAA_CYCL TO OBI_DAT Date 12.0 Date and time OBI started										
	Billyahe Byte 20.0										
⊕ 08 DB call	TERD END Bool 21.0										
🕂 💼 Jumps											
🗄 💼 Integer function											
Floating-point fct.											
H Move	OB1 : "Main Program Sweep (Cydle)"										
+ B Shift/Rotate	Comment:										
🗄 🗃 Status bits											
🛨 👩 Timers											
🕀 🧱 Word logic	A twork []: Title:										
FB blocks	Comment :										
FC blocks											
F- SFC blocks											
Multiple instances											
🗄 í Libraries	MOVE #END										
1											
1											
1	PIBO IN OUT #DIValue										
	Slot DP ID Order Number / Designation I Address Q Address										
<u><u><u></u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u></u>	1 24DO System setting 02										
	2 8DI Input Relay/Coil1 byte 0										
Program e 🖁 🗄 Call stru											

Step 6: Download the settings into SIMATIC PLC

-11+0 -11*0	LAD/	STL/FBD -	[OB1	"Сус	le Exe	cution"	S7_Pro	INSIMATIC 3	00 Station\CPU	313C-2 DP(1)	\\0B1]		
•	File	<u>E</u> dit <u>I</u> nsert	P <u>L</u> C	Debug	⊻iew	<u>Options</u>	<u>W</u> indow	<u>H</u> elp					
E) 🚔	≌~ 日 ∉	Doy	<u>w</u> nload				Ctrl+L	(»! 🔲 🖪	⊭ + - + + + + - + + - + - + - + - + - +	-() 🕾 🛏 -	1 H 💦	
=			Selé	ect <u>O</u> nlin	e CPU				ents Of 'En	vironment\D	terface\TF	ine'	
F			Esta	ablish Co	nnectio	n to Confi	gured CPU		Name	Data Trmo	Addrose	Commont	
F	HFO 1	lew network	CP	J Messag	ges				OB1 MIN	Int	8.0	Minimum cycle	time of O
E	÷ 💼 I	Bit logic	Dis	play For	- ce Value	s		Ctrl+Alt+F	OB1 MAX	Int	10.0	Maximum cycle	time of O
E	• <u> (</u>	Comparator	Mo	nitor/Mo	dify Va	riables			OB1 DAT	Date	12.0	Date and time	OB1 start
E	ŧ 😖 🤇	Converter	14	J., 1. T. F.				Chin	DIValue	Byte	20.0		
		Dounter	M0	a <u>w</u> e mia	ormation (ede	1		CtriteD	END	Bool	21.0		
		umps	C 10	av/Decet	1006			Culti					
	• • • • I	nteger functic	Set.	Time of	 Davr				[1			
E	• 💼 I	loating-point	101.	11110 01	Do <u>y</u>								
1	÷ 🔁 Ì	dove .			0	B1: "	Main Pr	ogram Sweep	(Cycle)"				
		'rogram contro 'hift/Potete	01			oment.							
		status bits				.ouncert.							
	+ 💿 1	limers											
E	÷ 🚊 ۱	Word logic			3	le two rk	📕 : Tit	:le:					
E	+ 💼 I	B blocks				oment.							
	+ 💼 t	C blocks				.ouncire.							
		FC blocks											
Ľ		dultiple instan	ces										
E	Ð 📆 I	ibraries.					ſ	MOVE		#END			
L								EN ENO		()	_		
										.,			
							PIB0 –	IN OUT	−#DIValue				

Step 7: Make sure the RUN LED of the GW-7553 is on and the switch of the GW-7553 is at Normal mode.



Step 8: Connect with GW-7553 and Utility

1. Set the Com Port Setting of the Utility



2.Click connect.

🏘 Profibus/Modbus Gateway Utility 📃 🗖 🔀												
Communication IP setting Safe value s	Communication IP setting Safe value setting View Help											
Connect Disconnect	Com Port Setting											
Exit	Port : Com1 💌 Baudrate : 115200 💌 Parity : None 💌											
	Data bit : 8 databit 💌 Stop bit : 1 stopbit 💌											
1 0	Item Value (State)											
[🎾 Modbus Type											
	🌮 Modbus Format											
	🎾 I/O Value for Stop Mode											
	🌮 Byte Order											
	🌮 Output Data Mode											
	P Modbus Device ID (S)											
	🎾 Poll interval time (M)											
	🌮 Time out value (M)											
	🥬 Module count											
	₽ Tcp connect num (T)(M)											
	Module State : 🔴 Com Port State : 🔴											
Com Port isn't open !												

3. Connection success

🍓 Profibus/Modbus Gateway Utili	ty	
Communication IP setting Safe value	setting View Help	
GW-7553	Com Port Setting Port : Com Port Baudrate : Data bit : 8 databit V Stop bit :	115200 V Parity : None V
· · · · · · · · · · · · · · · · · · ·	Item	Value (State)
Module 3	🎾 Modbus Type	Master
	🥔 Modbus Format	тср
	🎾 I/O Value for Stop Mode	Retain Last Value
	🥔 Byte Order	Big Endian (Motorola format)
	🔎 Output Data Mode	Manual
	🎾 Modbus Device ID (S)	1
	🎾 Poll interval time (M)	500ms
	🎾 Time out value (M)	500ms
	🎾 Module count	3
	🎾 Tcp connect num (T)(M)	1
	Module State: 🔵	Com Port State : 🛛 🌑
Module is connected	Receive file name er	ror

🍓 Profibus/Modbus Gateway Util	ity			
Communication IP setting Safe value	e setting View Help			
GW-755 New setting Load from file	om Port Setting			
Module 1	Port : Com1 Baudrate Data bit : 8 databit Stop bit	: 115200 ▼ Parity : None ▼ : 1 stopbit ▼		
Madula 2	Item	Value (State)		
	🎾 Modbus Type	Master		
	🎾 Modbus Format	TCP Retain Last Value Big Endian (Motorola format) Manual 1		
	🎾 I/O Value for Stop Mode			
	🥔 Byte Order			
	🎾 Output Data Mode			
	🎾 Modbus Device ID (S)			
	🔊 Poll interval time (M)	500ms		
	🎾 Time out value (M)	500ms		
	🎾 Module count	3		
	🎾 Tcp connect num (T)(M)	1		
	Module State: 🔵	Com Port State : 🛛 🌑		
Module is connected	Receive file name e	nor		

4. Click IP setting→Load from device to show IP setting dialog

5. Set the IP of the Modbus TCP Slave and click "Save to Device" button to save the settings.

IP Setting		X
Local IP Setting		
IP 192 . 168 . 255 . 2	2	
MASK: 255 . 255 . 0 . 0)	
GATEWAY 192 . 168 . 0 . 1		
step1. Set	IP of Modbus TCI	•
Remote IP Setting slave		
P(1): 192 . 168 . 0 . 123	Time out value (ms) : 1500	ReConnect time (ms) : 8000
IP(2): 192 . 168 . 0 . 100	Time out value (ms) : 1500	ReConnect time (ms) : 8000
IP(3): 192 . 168 . 0 . 100	Time out value (ms) : 1500	ReConnect time (ms) : 8000
IP(4): 192 . 168 . 0 . 100	Time out value (ms) : 1500	ReConnect time (ms) : 8000
IP(5): 192 . 168 . 0 . 100	Time out value (ms) : 1500	ReConnect time (ms) : 8000
IP(6): 192 . 168 . 0 . 100	Time out value (ms) : 1500	ReConnect time (ms) : 8000
IP(7): 192 . 168 . 0 . 100	Time out value (ms) : 1500	ReConnect time (ms) : 8000
IP(8): 192 . 168 . 0 . 100	Time out value (ms) : 1500	ReConnect time (ms) : 8000
	step2. Save the to GW-7553	Save to File Save to Device

Step 9: Set the switch of the GW-7553 to Normal Mode then reset the power of GW-7553.



Now the setting procedure has been finished and the user can read the data of the Modbus DI module at address PIB0.

OB1 : "Main Program Sweep (Cycle)"	
Comment:	
Network 1: Title:	
Comment:	
HEND EN ENO 16#DDDDDDff PIBD - IN OUT -#DIValue	
\CPU 313C-2 DP(1)\\OB1 - <offline></offline>	

fo ,	λ_	3: Cross-references	λ	4: Address info.	_λ_	5: Modify	_λ_	6: Diagnostics	λ	7: Comparison /	/		
												🛈 <mark>RU</mark> N	

Example 3: PLC reads AO module data from GW-7553. (Modbus FC03)

Read a Modbus TCP AO module (PROFIBUS Slave & Modbus TCP/Master)



SIMATIC STEP7 Configuration:

Step 1: Setup the GW-7553 module

1. Select GW-7553 module



2. Add a System setting module

🖳 HW Config - [SIMATIC 300 Station (Configuration) \$7_Pro3]	
🔟 Station Edit Insert PLC View Options Window Help	
(0) UR 1 2 CPU 31 X2 DP 2.2 DP PROFIBUS(1): DP master system (1)	Find: 7553 Profile: Standard Gateway
2.4 Count 3 • 4 • • • <t< td=""><td></td></t<>	
< >	Output Relay/Coil1 byte Output Relay/Coil2 byte Output Relay/Coil3 byte
(2) GW-7553(DPV1)	Output Relay/Coil4 byte
Slot DP ID Order Number / Designation I Address Q Address Comment 1 24DO System setting 02	Output Relay/Coil6 byte
2 1AO Output Register1 word 256257 3 1AI Input Register1 word 256257	Output Relay/Coil0 byte
4	Output Relay/Coll10 byte



3. Add "Onput Register – 1 word" and "Input Register – 1 word"



Step 2: Setup the parameters of the GW-7553

- 1. Double click GW-7553 icon
- 2. Select "Parameter Assignment"



3. Set common parameters of the GW-7553

Common parameters→

Baud rate: 115200; Parity: none; Data: 8 data bit; Stop bit: 1 stop bit; Modbus type: Master

Modbus Format: Modbus TCP; Byte Order: Big Endian

Properties - DP slave		×
General Parameter Assignment		
Parameters	Value	
🖃 🚍 Station parameters		
— 📺 DP Interrupt Mode	DPVO	
🕞 🧰 General DP parameters		
📥 🔄 Device-specific parameters		
— 🔤 baud rate	115200 baud	
— parity	none	
— 🔟 data	8 data bit	
_≝] stop bit	1 stop bit	
— Modbus Type	Master	
– Modbus Format	Modbus RTU	
– I/O Safe Mode	Retain Last Value	
_≝ Byte Order	Big Endian (Motorola format)	
— Output Data Mode	Manual	
– 📺 Modbus Device ID (S)	1	
— 🗐 Modbus Polling Interval(ms) (M)	500	
– 📰 Query timeout Value(ms)(M)	500	
TCP Connect Num(T)(M)	1	
OK	Cancel Help	

4. Set module parameters of the GW-7553

(1)Double click "Output Register - 1 word" module

(2)Select "Parameter Assignment"		
🙀 HW Config - [SIMATIC 300 Station (Configuration) \$7_Pro3]		
💵 Station Edit Insert PLC View Options Window Help		
D 😅 💱 🖩 🖏 🎒 🖻 🗈 🖬 🏜 👔 🎞 器 😥		
⇒(0) UR	Properties - DP slave	
	Address / ID Parameter Assignment Select "parameter	
YZ DP PROFIBUS(1): DP master system (1)	Assignment"	[
2.2 DII6/DL		
2.4 Count	Device-specific parameters	
3 <u>4</u>	Modbus Slave Device ID (M)	
e Mand	□ I TCP Connect Index(T)(M) 1	_
Double click Output	Hex parameter assignment	
Register - 1 word		
(2) GW-7553(DPV1)		
Slot 🚺 DP ID Order Number / Designation I Address Q Address		
1 24DO System setting 02		
2 IAO Output Register1 word 256, 257		
4		
5	OK	Help

5. Setup "Output Register – 1 word" module parameters

Module parameters →

Modbus Slave Device ID: 2; Slave Address: 0 (Protocol address (base 0)), click ok.

Properties - DP slave	
Address / ID Parameter Assignment	
Address / ID Parameter Assignment Parameters Station parameters Modbus Slave Device ID (M) Start Address (M) TCP_Connect_Index(T)(M) Hex parameter assignment	Value 2 0 1

- 6. Set module parameters of the GW-7553
- (1)Double click "Intput Register 1 word" module
- (2)Select "Parameter Assignment"

B HW Config - [SIMATIC 300 Station (Configuration) S7_Pro3]	
AND Station Edit Insert PLC View Options Window Help	
	Properties - DP slave
2 CPU 31 X2 DP PROFIBUS(1): DP master system (1)	
2.2 2.4 Count 3 4 c Double click	Station parameters Image: Station parameter strain Image: Station parameter strain
	L'`∐ User_Prm_Data (0 to 4) 02,00,00,04,01
(2) GW-7553(DPV1)	
Slot DP ID Order Number / Designation I Address Q Adds 1 24DO System setting 02 2 1AO Output Register1 word 25625	
3 1AI Input Register1 word 256257	
	OK Cancel Help

5. Setup "Input Register – 1 word" module parameters

Module parameters→

Modbus Slave Device ID: 2; Slave Address: 0 (Protocol address (base 0)), click ok.

Module Type: Read AO, click ok.

Properties - DP slave		
Address / ID Parameter Assignment		
Parameters Parameters Station parameters Device-specific parameters Modbus Slave Device ID (M) Start Address (M) Module Type (M) TCP_Connect_Index(T)(M) Hex parameter assignment User_Prm_Data (0 to 4)	Value 2 0 Read AO 1 02,00,00,04,01	
OK	Cancel	Help

Step 3: Download the HW settings into SIMATIC PLC

1. Save and Compile

۵Ŷ	HW Config - [SIMATIC 300 S	tation (Config	uration) S7_Pro1]			
00	Station Edit Insert PLC View	/ <u>O</u> ptions <u>W</u> i	ndow <u>H</u> elp			
	<u>N</u> ew Open	Ctrl+N Ctrl+O	🗈 🗖 🔡 <table-cell></table-cell>			
	 Open ONLINE			~		
Ē	<u>C</u> lose				<u>F</u> ind:	7552
	<u>S</u> ave		PROFIBUS(1): DP master system (1)		Profile:	Standard
	Save and Co <u>m</u> pile	Ctrl+S	T T			Output Register 59 word
	Properties		■ (2) G ₩-75			Output Register60 word
						📕 Output Register61 word
	Import					🔤 🚺 Output Register62 word
L	<u>E</u> xport		thenet			🛛 📱 Output Register63 word
	Consistency Check	Ctola à lta K				Output Register64 word
	Check CiP Competibility	Ctolu á lta E				Input Register1 word
	Check City Companying	Currinter				Input Register2 word
	Print	Ctrl+P		*		Input Register3 word
<	Print Previe <u>w</u>			>		Input Register4 word
	Page Setup					Input Register6 word
	1 07 De-11013 (A TUC 200 04-4					Input Register7 word
-	1 S7_PIOLSIMATIC 300 Station	L	(a			Input Register8 word
	2 S7_Pro2/SIMATIC 300 Station	L	on I Address Q Address Com	ment		Input Register9 word
	3 S7_Pro3\SIMATIC 300 Station	L	02	^		🚺 Input Register10 word
	4 S7_Pro4\SIMATIC 300 Station	L	256257			📕 Input Register11 word
	Exit	Alt+F4	230237			Input Register12 word
	5	/				Input Register13 word
						i 🔝 💷 Innut Revister14 word

2. HW settings into SIMATIC PLC

🔩 H W Config - [SIMA]	IC 300 Station (Configuration)	S7_Pro3]				
🛄 <u>S</u> tation <u>E</u> dit Insert 🛛	<u>PLC V</u> iew Options <u>W</u> indow <u>H</u> elp					
🗅 🖙 🗫 🖬 💀	Download	Ctrl+L	1			
	<u>U</u> pload					
🚍 (0) UR	Download Module Identification					7550
1	Upload Module Ide <u>ntification</u> to PG				Find:	1553
2 CPU 31	Faulty Modules				<u>P</u> rofile:	Standard
$\frac{\lambda Z}{2.2}$ $\frac{DF}{DU6DX} = -$		0.110				🔤 🚺 Input Relay/Coil26 byte
2.4 Count	Module Information	Ctrl+D				📔 Input Relay/Coil27 byte
3	Operating Mode	Ctrl+I				🚺 Input Relay/Coil28 byte
4	Clear/ <u>R</u> eset					📕 Input Relay/Coil29 byte
	Set Time of D <u>a</u> y					Input Relay/Coil30 byte
	<u>M</u> onitor/Modify					Input Relay/Coil31 byte
	Undata Firmwara					Input Relay/Coil32 byte
-	o puale raniwate					Output Register1 word
	Save Device Name to Memory Card			~		Output Register2 word
<	F 4 .			>		Output Register3 word
	Ethemet					Output Register4 word
(2) G₩-7553	PROFIBUS	•				Output Register5 word
						Output Register7 word
Slot 🚺 DP ID	<u>S</u> ave Service Data		dress Comment			Output Register8 word
1 24DO	System setting	02		~		Output Register9 word
2 1AO	Output Register1 word	2562	157			Output Register10 word
3 1AI	Input Register1 word 2562	57				Output Register11 word
4						🔲 🗍 Ontont Register12 word

Step 4: Insert a new Organization Block (OB1,OB82,OB86)

SIMATIC Manager -	[S7_Pro1 C:\Program H	iles'Siemens'S	tep7\s7proj\\$7_Pro1]			
🎒 File Edit Insert PL	<u>.</u> C <u>V</u> iew <u>O</u> ptions <u>W</u> indow	<u>H</u> elp				
🗅 🗃 🚟 🚟 🛛 🐰	🖻 💼 📩 🗣	10 10 10 10 10 10 10 10 10 10 10 10 10 1	K < No Filter >	- V 8	🖁 🎯 🖷 🚍 🗂 💐	?
	Station 2 DP(1) gram(1) wrees Cut Copy Paste Delete	Cttl+X Cttl+C Cttl+V Del	G OB82	⊕ OB86		
	Insert New Object	•	Organization Block			
	PLC Rewire Compare Blocks Reference Data Check Block Consistency		Function Block Function Data Block Data Type Variable Table			
	Print	+				
	Rename Object Properties Special Object Properties	F2 Alt+Return				

Properties - Organizatio	n Block	×
General - Part 1 General	- Part 2 Calls Attributes	
<u>N</u> ame:	0B1	
Symbolic Name:		
Symbol <u>C</u> omment:		
Created in <u>L</u> anguage:	LAD	
Project path:		
Storage location of project:	C:\Program Files\Siemens\Step7\s7proj\S7_Pro1	
.	Code Interface	
Date created:	U5/13/2013 11:52:43 AM	
Last modified:	05/13/2013 11:52:43 AM 05/13/2013 11:5	2:43 AM
Comment:		
OK	Cancel	Help


Step 5: Edit OB1

Variables used in the example LD Program:

	Naze	Data T y pe	Address	Comment
	END	Bool	20.0	
12	INIT	Bool	20.1	
12	Tri	Int	22.0	
	AIValue	Word	24.0	
'n		-		





Network 2: Title:

Comment:



 $Ne\,two\,rk$ 3:QBO add "1" then PLC will send QW3 out.

l word AO





Using T2 trigger T1



Network 5: Counter Cl

If counter(Cl) add "l" and Tri will add "l" ,too.



Network 6 : Compare Tri & 256

If Tri is equal to 256,Cl will reset



Step 6: Download the settings into SIMATIC PLC

	LAD	/STL/	FBD -	[OB1 "C	Cycle Ex	ecution"	\$7_Pm	INSIMATIC 3	00 Station/CPU	313C-2 DP(1)\\0B1]	
	<u>F</u> ile	<u>E</u> dit	Insert	PLC Debu	ıg <u>V</u> iew	<u>O</u> ptions	<u>W</u> indow	<u>H</u> elp				
C	ነ 🖻			Do <u>w</u> nlos	d			Ctrl+L	(»! 🗖 🖪	₩0	-0 🕾 🖕 -	1 H 19
=				Select Or	dine CPU				ntents Of: '	Environment	\Interface\]	TEMP '
F				Establish	Connecti	ion to Confi	igured CPU		Name	Data Tyne	Address	Comment
	ню	New n	etwork	CPU M <u>e</u>	ssages				OB1_MAX	Int	10.0	Maximum cycle time of OB1
E	• 💼	Bit log	gic	<u>D</u> isplay I	Force Valu	ues		Ctrl+Alt+F	OB1_DAT	Date	12.0	Date and time OB1 started
	1	Comp	arator	<u>M</u> onitor/	Modify V	ariables			I END	Bool	20.0	
	E 🔤	Conve	rter	Module I	nformatic	מר		Ctrl+D	1 INIT	Bool	20.1	
		DB ca	11	Oneratin	v Mode			Ctrl+I	1 Tri	Int	22.0	
		Jumps		Clear/Re	set				1 AIValue	Word	24.0	
	• 💼	Intege	r functio	Set Time	of Day							
B	- 💼	Floatin	ng-point	101.					1			
		Move Due out		-1		#IN	IIT			#INIT		
		Shift/R	un conu ?otate	01		L	l			(S)_		
	- 	Status	bits				'			, ,	I	
					C1							
E					(R)_							
B	• 🧰	FB blo	ocks									
		FC blo	ocks			I						
		SEC P	locks			Network	2 : Tit	tle:				
		Multin	le instar	ices		-						
B	a 撊	Librar	ies			Comment	:					
							г	MOUT	ı	#END		
								MOVE FN FND		/\		
				-, -,		17	I					
	PIW256 – I'			IN OUT	-#AIValue							
Ír							L		1			

Step 7: Make sure the RUN LED of the GW-7553 is on and the switch of the GW-7553 is at Normal mode.



Step 8: Connect with GW-7553 and Utility

1. Set the Com Port Setting of the Utility



2.Click connect.

💱 Profibus/Modbus Gateway Utility 📃 🗖 🗙					
Communication IP setting Safe value setting View Help					
Connect Disconnect	Com Port Setting				
Exit	Port : Com1 💌 Baudrate : 115200 💌 Parity : None 💌				
	Data bit : 8 databit 💌 Stop bit : 1 stopbit 💌				
	Item Value (State)				
	P Modbus Type				
	🌮 Modbus Format				
	☞ I/O Value for Stop Mode				
	🌮 Byte Order				
	🌮 Output Data Mode				
	P Modbus Device ID (S)				
	Poll interval time (M)				
	P Time out value (M)				
	P Module count				
	₽ Tcp connect num (T)(M)				
	Module State : Com Port State :				
Com Port isn't open !					

3. Connection success

Profibus/Modbus Gateway Utility					
Communication IP setting Safe value	Communication IP setting Safe value setting View Help				
GW-7553	Com Port Setting Port : Com1 Baudrate : Data bit : 8 databit Stop bit :	115200 V Parity : None V			
<u> </u>	Item	Value (State)			
Module 3	🎾 Modbus Type	Master			
	🥔 Modbus Format	тср			
	🎾 I/O Value for Stop Mode	Retain Last Value			
	🎾 Byte Order	Big Endian (Motorola format)			
	🎾 Output Data Mode	Manual			
	🎾 Modbus Device ID (S)	1			
	🎾 Poll interval time (M)	500ms			
	🎾 Time out value (M)	500ms			
	🎾 Module count	3			
	🎾 Tcp connect num (T)(M)	1			
	Module State: 🔴	Com Port State : 🌑			
Module is connected Receive file name error					

🖏 Profibus/Modbus Gateway Utility 📃 🗖 🔀				
Communication IP setting Safe value setting View Help				
GW-755 New setting Load from file	om Port Setting			
Module 1	Port : Com1 Baudrate Data bit : 8 databit Stop bit	: 115200 ▼ Parity : None ▼ : 1 stopbit ▼		
Madula 2	Item	Value (State)		
	🎾 Modbus Type	Master		
	🎾 Modbus Format	тср		
	🎾 I/O Value for Stop Mode	Retain Last Value		
	🥔 Byte Order	Big Endian (Motorola format)		
	🎾 Output Data Mode	Manual		
	🎾 Modbus Device ID (S)	1		
	🔊 Poll interval time (M)	500ms		
	🎾 Time out value (M)	500ms		
	🎾 Module count	3		
	🎾 Tcp connect num (T)(M)	1		
	Module State: 🔵	Com Port State : 🛛 🌑		
Module is connected	Receive file name e	nor		

4. Click IP setting→Load from device to show IP setting dialog

5. Set the IP of the Modbus TCP Slave and click "Save to Device" button to save the settings.

IP Setting		
Local IP Setting		
IP 192 . 168 . 255 . 2	2	
MASK : 255 . 255 . 0 . 0)	
GATEWAY 192 . 168 . 0 . 1		
step1. Set	IP of Modbus TCF	
Remote IP Setting slave		
P(1): 192 . 168 . 0 . 123	Time out value (ms) : 1500	ReConnect time (ms) : 8000
IP(2): 192 . 168 . 0 . 100	Time out value (ms) : 1500	ReConnect time (ms) : 8000
IP(3): 192 . 168 . 0 . 100	Time out value (ms) : 1500	ReConnect time (ms) : 8000
IP(4): 192 . 168 . 0 . 100	Time out value (ms) : 1500	ReConnect time (ms) : 8000
IP(5): 192 . 168 . 0 . 100	Time out value (ms) : 1500	ReConnect time (ms) : 8000
IP(6): 192 . 168 . 0 . 100	Time out value (ms) : 1500	ReConnect time (ms) : 8000
IP(7): 192 . 168 . 0 . 100	Time out value (ms) : 1500	ReConnect time (ms) : 8000
IP(8): 192 . 168 . 0 . 100	Time out value (ms) : 1500	ReConnect time (ms) : 8000
	step2. Save the to GW-7553	Save to File Save to Device

Step 9: Set the switch of the GW-7553 to Normal Mode then reset the power of GW-7553.



Now the setting procedure has been finished and the user can write the data to the Modbus AO module at address PIW256.



Network 2: Title:

Example 4: PLC reads AI module data from GW-7553. (Modbus FC04)

Read a Modbus TCP AI module (PROFIBUS Slave & Modbus TCP/Master)



SIMATIC STEP7 Configuration:

Step 1: Setup the GW-7553 module

1. Select GW-7553 module



2. Add a System setting module



3. Add "Input Register—1 word" module

🖳 HW Config - [SIMATIC 300 Station (Configuration) S7_Pro3]	
💵 Station Edit Insert PLC Yiew Options Window Help	
D 😂 🖫 🖳 🥞 🖻 🗈 🏜 🏛 🎼 🗖 😤 💦	
Image: CPU 3 PROFIBUS(1): DP master system (1) 22 DP 2.2 DI1600x 2.4 Count 3 Image: CPU 3 4 Image: CPU 3 5 Image: CPU 3 0 Image: CPU 3 0 Image: CPU 3 0 Image: CPU 3 1 Image: CPU 3 2.2 DI1600x 2.4 Count 3 Image: CPU 3 4 Image: CPU 3 1 Image:	Find: 7553 Profile: Standard Output Register58 word Output Register59 word Output Register60 word Output Register61 word Output Register62 word Output Register62 word Output Register63 word Output Register63 word
Register - 1 word	Input Register1 word
	Input Register3 word Input Register4 word
(2) GW-7553(DPV1)	Input Register5 word Input Register6 word
Slot I DP ID Order Number / Designation I Address Q Address Comment 1 24DO System setting 02	Input Register7 word Input Register8 word Input Register9 word
2 1AI Input Register1 word 256257	Input Register10 word

Step 2: Setup the parameters of the GW-7553

1. Double click GW-7553 icon

2. Select "Parameter Assignment"

HW Config - [SIMATIC 300 Station (Configuration) S7_Pro3]	1	
🕅 Station Edit Insert PLC Yiew Options Window Help		
D 😅 🔓 🗣 🎒 🐴 🛍 🛍 🏦 🗊 🖽 🗞 🕅	1	
(1) UR 1 2 CPU 31 Z2 DP 2.2 DI1602 Count GN/L 7553	Properties - DP slave General Parameter Assignment Select "Parameter Parameters Assignment" DPV0 DPV0 DPV0 DPV0	
4 icon	Device-specific parameters Image: Specific parameters	III
(2) GW-7553(DPV1) Slot DP ID Order Number / Designation I Address Q Ad 1 24DO System setting 02 2 1AI Input Register-1 word 256257 3 4	Image: Second	×
* - 5 - 6 - 7 -	OK Cancel Help	

3. Set common parameters of the GW-7553

Common parameters→

Baud rate: 115200; Parity: none; Data: 8 data bit; Stop bit: 1 stop bit; Modbus type: Master Modbus Format: Modbus TCP; Byte Order: Big Endian

Properties - DP slave General Parameter Assignment	
Parameters	Value DPV0
 Device-specific parameters baud rate parity data stop bit Modbus Type Modbus Format I/O Safe Mode Byte Order Output Data Mode Modbus Device ID (\$) Modbus Polling Interval(ms) (M) Query timeout Value(ms)(M) TCP. Connect Num(T)(M) 	115200 baud none 8 data bit 1 stop bit Master Modbus R TU Retain Last Value Big Endian(Motorola format) Manual 1 500 500 1
OK	Cancel Help

4. Set module parameters of the GW-7553

(1)Double click "input register—1 word" module

(2)Select "Parameter Assignment"

🙀 H W Config - [SIMATIC 300 Station (Configuration) S7_Pro3]	
💵 Station Edit Insert PLC View Options Window Help	
D 😅 🏪 🖳 🏭 🎒 🛍 🛍 🏙 🏜 📳 🖽 💥 🙌	
PROFIBUS(1): DP master system (1) 2 DP 2.2 DII60X 2.4 Count 3 4 T Double click module name	Properties - DP slave X Address / ID Parameter Assignment Select "Parameter Parameters Assignment" Station parameters Image: Station parameters Image: Station parameter station Image: Station parameter station Image: Station parameter assignment Image: Station parameter assignment
(2) GW-7553(DPV1) Slot DP ID Order Number / Designation I Address Q Address 1 24DO System setting D, 2 2 2 IAI Input Register-1 word 256257 3 4	
5 6 7	OK Cancel Help

5. Setup "input register—1 word" module parameters

Module parameters→

Modbus Slave Device ID: 1; Slave Address: 0 (Protocol address (base 0))

Module Type: Read AI, click ok.

Properties - DP slave				
Address / ID Parameter Assignment	1			
Parameters	Value			
🖃 🤤 Station parameters				
Device-specific parameters				
Modbus Slave Device ID (M)	2			
E Start Address (M)				
—≝ Module Type (M)	Read AI			
□ □ ICP_Connect_Index(I)(M)	1			
1				
OK	Cancel Help			

Step 3: Download the HW settings into SIMATIC PLC

1. Save and Compile

۵ų	HW Config - [SIMATIC 300 S	tation (Config	nration) S7_Pro1]
00	Station Edit Insert PLC View	<u>O</u> ptions <u>W</u> ii	dow <u>H</u> elp
	<u>N</u> ew Open	Ctrl+N Ctrl+O	
5	Open ON <u>L</u> INE		
	<u>C</u> lose		E ind: 7552
	Save		PROFIBUS(1): DP master system (1) Profile: Standard.
	Save and Co <u>m</u> pile	Ctrl+S	Output Register59 word
	Properties		Tage (2) G W-75! Output Register60 word
	Import		Output Register61 word
	Import Evrot		Uutput Register-62 word
			Output Register64 word
	Consistency C <u>h</u> eck	Ctrl+Alt+K	Input Register1 word
	Check CiR Compatibility	Ctrl+Alt+F	Input Register2 word
	Print	Ctrl+P	Input Register3 word
<	Print Previe <u>w</u>		Input Register-4 word
	Page Setup		Input Register6 word
	1 S7 Pro1/SIM # TIC 300 Station		Input Register7 word
	2 S7 Pro2/SIMATIC 300 Station		n I Addman O Addman Commant
Г	3 S7 Pro3/SIMATIC 300 Station		Input Register-9 word
	4 S7 Pro4/SIMATIC 300 Station		256257
			256257
	Exit	Alt+F4	Input Register-12 word
	5		Innut Resister-14 word

2. HW settings into SIMATIC PLC

🔩 H W Config	- [SIMA	TIC 300 Station (Configura	tion) S7_Pro3]			
🛄 <u>S</u> tation <u>E</u> dit	Insert	PLC View Options Window	/ <u>H</u> elp				
🗅 🚅 🔓		<u>D</u> ownload	Ctrl+L				
J		<u>U</u> pload				~	
💼 (0) UR		Download Module Identifi <u>c</u> at	on				Find
1	~	Upload Module Ide <u>n</u> tification	to PG	I			<u>-</u>
2 CI X2 D	PU 31	Faulty Modules			_ >		Profile:
2.2 DI	116/DX	Module Information	Ctrl+D				
2.4 C	JUDI	Operating Mode	Ctrl+I	I			
4		Clear/ <u>R</u> eset		I			
E	<u> </u>	Set Time of D <u>a</u> y		I			
		<u>M</u> onitor/Modify		I			
		Updat <u>e</u> Firmware					
		Save De <u>v</u> ice Name to Memory	/ Card			~	
<		Ethernet	•			>	
(2)	¥₩-7553	PROFIBUS	•				
Slot DP	ID	<u>S</u> ave Service Data		dress	Comment		
1 24DO	1	System setting	02			<u>^</u>	
2 1AI		Input Register1 word	256257				
3							

Step 4: Insert a new Organization Block (OB1,OB82,OB86)



Properties - Organizatio	n Block	×
General - Part 1 General	Part 2 Calls Attributes	
<u>N</u> ame:	DEI	
Symbolic Name:	Cycle Execution	
Symbol <u>C</u> omment:		
Created in <u>L</u> anguage:	STL	
Project path:		
Storage location of project:	C:\Program Files\Siemens\Step7\s7proj\S7_GW-~1	
Data created :	Code Interface	
Last modified:	12/10/2009 10:22:22 AM 12/10/2009 10:22:22 AM	
C <u>o</u> mment:		
OK	Cancel Help	



Step 5: Edit OB1



Step 6: Download the settings into SIMATIC PLC

🗱 LAD/STL/FBD - [OB1 "Cycle Execution" \$7_GW-7552\SIMATIC 300 Station\CPU313C-2 DP(0)\\OB1]							
🖬 <u>F</u> ile <u>E</u> dit Insert	PLC Debug View Options Winds	ow <u>H</u> elp				-	Ъ×
D 🚅 🖙 🖬 🧉	Do <u>w</u> nload	Ctrl+L	!« »! 🗖 🗖	H-H-	-0 @ L 1 F	t №?	
	Select Online CPU Fatablish Connection to Configured (-110-	ents Of 'Envi	ronment\Inte	rface\TEMP'		
	Establish Connection to Connighted (.10	Name	TOIDACHICCHICC	Data Type	Address	
New network	CPU Messages	Chill AlterE	AIValue		Word	20.0	
E Bit logic	Monitor/Modify Variables	CultAitt	1 END		Bool	22.0	
	Module Information	CHUD					>
	Operating Mode	Ctrl+I					~
	<u>C</u> lear/Reset		(Cycle)"				
(R)	Set Time of Day						
E SR	Network II:	Read AI					
(N) (P)	Cormont						
	Comberry.						
ET POS							
🕀 🛃 Comparator				#END			
😟 🥶 Converter				()	1		
H DB call				()	I		
🕀 📴 Jumps	PIW256	IN OUT	—#AIValue				
+ Integer function	a fet.						
🖻 🤂 Move							
E MOVE							
Coil	₹≤						
📳 Program e 🖁	Call stru						~
×							
프							
	Error 2: Info 3: Cross-r	eferences λ	4: Address info.	}5: Modify	A 6: Diagnostics		7
Loads the current block to	the PLC.		offline	Abs < 5.2	Nw 1	ert Chg	

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Step 7: Make sure the RUN LED of the GW-7553 is on and the switch of the GW-7553 is at Normal mode.



Step 8: Connect with GW-7553 and Utility

1. Set the Com Port Setting of the Utility



2.Click connect.

🁋 Profibus/Modbus Gateway Utili	ly 📃 🗖 🔀
Communication IP setting Safe value	setting View Help
Connect Disconnect	Com Port Setting
Exit	Port : Com1 💌 Baudrate : 115200 💌 Parity : None 💌
	Data bit : 8 databit 💌 Stop bit : 1 stopbit 💌
	Item Value (State)
	P Modbus Type
	🌮 Modbus Format
	☞ I/O Value for Stop Mode
	🌮 Byte Order
	🌮 Output Data Mode
	P Modbus Device ID (S)
	Poll interval time (M)
	P Time out value (M)
	P Module count
	₽ Tcp connect num (T)(M)
	Module State : Com Port State :
Com Port isn't open !	

3. Connection success

🍓 Profibus/Modbus Gateway Utili	ty	
Communication IP setting Safe value	setting View Help	
GW-7553	Com Port Setting Port : Com1 Baudrate : Data bit : 8 databit Stop bit :	115200 V Parity : None V
<u> </u>	Item	Value (State)
Module 3	🎾 Modbus Type	Master
	🥔 Modbus Format	тср
	🎾 I/O Value for Stop Mode	Retain Last Value
	🎾 Byte Order	Big Endian (Motorola format)
	🎾 Output Data Mode	Manual
	🎾 Modbus Device ID (S)	1
	🎾 Poll interval time (M)	500ms
	🎾 Time out value (M)	500ms
	🎾 Module count	3
	🎾 Tcp connect num (T)(M)	1
	Module State: 🔴	Com Port State : 🌑
Module is connected	Receive file name er	ror

🍓 Profibus/Modbus Gateway Util	ity	
Communication IP setting Safe value	e setting View Help	
GW-755 New setting Load from file	om Port Setting	
Module 1	Port : Com1 Baudrate Data bit : 8 databit Stop bit	: 115200 ▼ Parity : None ▼ : 1 stopbit ▼
Madula 2	Item	Value (State)
	🎾 Modbus Type	Master
	🎾 Modbus Format	тср
	🎾 I/O Value for Stop Mode	Retain Last Value
	🥔 Byte Order	Big Endian (Motorola format)
	🎾 Output Data Mode	Manual
	🎾 Modbus Device ID (S)	1
	🔊 Poll interval time (M)	500ms
	🎾 Time out value (M)	500ms
	🎾 Module count	3
	🎾 Tcp connect num (T)(M)	1
	Module State: 🔵	Com Port State : 🛛 🌑
Module is connected	Receive file name e	nor

4. Click IP setting→Load from device to show IP setting dialog

5. Set the IP of the Modbus TCP Slave and click "Save to Device" button to save the settings.

IP Setting		
Local IP Setting		
IP 192 . 168 . 255 . 2	2	
MASK : 255 . 255 . 0 . 0)	
GATEWAY 192 . 168 . 0 . 1		
step1. Set	IP of Modbus TCF	
Remote IP Setting slave		
P(1): 192 . 168 . 0 . 123	Time out value (ms) : 1500	ReConnect time (ms) : 8000
IP(2): 192 . 168 . 0 . 100	Time out value (ms) : 1500	ReConnect time (ms) : 8000
IP(3): 192 . 168 . 0 . 100	Time out value (ms) : 1500	ReConnect time (ms) : 8000
IP(4): 192 . 168 . 0 . 100	Time out value (ms) : 1500	ReConnect time (ms) : 8000
IP(5): 192 . 168 . 0 . 100	Time out value (ms) : 1500	ReConnect time (ms) : 8000
IP(6): 192 . 168 . 0 . 100	Time out value (ms) : 1500	ReConnect time (ms) : 8000
IP(7): 192 . 168 . 0 . 100	Time out value (ms) : 1500	ReConnect time (ms) : 8000
IP(8): 192 . 168 . 0 . 100	Time out value (ms) : 1500	ReConnect time (ms) : 8000
	step2. Save the to GW-7553	Save to File Save to Device

Step 9: Set the switch of the GW-7553 to Normal Mode then reset the power of GW-7553.



Now the setting procedure has been finished and the user can read the data of the Modbus AI module at address PIW256.

•				
🗋 🗃 🔓 🖬 🖨 🛔	L I I I I I I I I I I I I I I I I I I I	!≪≫! ⊡ ⊡ ⊭∷ +⊦-/⊦	-0 @ ⊑ → ⊣ 🕅	
		Contents Of: 'Environment\l	Interface\TEMP'	
	🖃 🕀 Interface	Name	Data Type Address	Coi
💾 New network 📃	±	🖬 AIValue	Word 20.0	
🕀 💼 Bit logic		🗉 End	Bool 22.0	
E Comparator		<		>
	I	* <u>1</u>		
⊕ 08 DB call	OBl : "Main Program Sweep	p (Cycle)"		<u>^</u>
	Comment:			
🗄 💼 Integer function	Commente.			_
Floating-point fct.				_
H move	Network 1: Read AI			
± = Shift/Rotate	Comment:	noment :		
± - 🔐 Status bits	councile.			
🛨 👩 Timers				_
⊞ ∰ Word logic				
H PB DIOCKS	MOVE	#End		
⊕ ⊕ SFB blocks	EN ENO		_	
	16#00002211	16#00002211		
<u></u>	PI₩256 – IN OUT	-#AIValue		
Program B=Call stru				~
				2
×				
1: Error 2	Info 🔨 3: Cross-references 👌	4: Address info.	fy λ 6: Diagnostics λ	7: Compa
Press F1 to get Help.	🔿 RUI	Abs < 5.2 Nw 1	Rd Chg	

Example 5: PLC writes DO module data to GW-7553.

(Modbus FC05, FC15)

Write a Modbus TCP DO module (PROFIBUS Slave & Modbus TCP/Master)



SIMATIC STEP7 Configuration:

Step 1: Setup the GW-7553 module

1. Select GW-7553 module



2. Add a System setting module



3. Add "Onput Relay/Coil—1 byte" module(For FC15,multiple coils, please select more than 1 byte

module)	
🙀 HW Config - [SIMATIC 300 Station (Configuration) S7_Pro3]	
💵 Station Edit Insert PLC View Options Window Help	
🗅 😅 🖫 🖳 🦛 📾 🛍 🕍 🏙 🏜 🚯 📼 🞇 😒	
(0) UR	
I Profile: 2 DP X2 DP PROFIBUS(1): DP master system (1)	
$\begin{array}{c c} 2.2 & DI16DX \\ \hline 2.4 & Count \\ \hline 3 \\ \hline 4 \\ \hline c \\ \hline \end{array} \end{array} \qquad \qquad$	-I DP Coupler R\$232C Link I-7552 I-7553(DPV1) Universal module
Double click Output	System setting Output Relay/Coil1 byte
Relay/Coil - 1 byte	Output Relay/Coil2 byte Output Relay/Coil3 byte Output Relay/Coil4 byte
(2) GW-7553(DPV1)	Output Relay/Coil5 byte Output Relay/Coil6 byte Output Relay/Coil7 byte
Slot DP ID Order Number / Designation I Address Q Address Comment 1 24DO System setting 02 • 2 8DO Output Relay/Coil1 byte 3 •	Output Relay/Coil8 byte Output Relay/Coil9 byte Output Relay/Coil10 byte

Step 2: Setup the parameters of the GW-7553

- 1. Double click GW-7553 icon
- 2. Select "Parameter Assignment"

🏨 H W Config - [SIMATIC 300 Station (Configuration) S7_Pro3]	1	
💵 Station Edit Insert PLC View Options Window Help		
D 😂 🖫 🖉 🐘 🎒 🗈 💼 🕍 🎰 📳 🎞 👯 🕅		
PROFIBUS(1): DP master system (1)	Properties - DP slave General Parameter Assignment Select "Parameter"	
2.2 10160x 2.4 Count 3 GW-7553 icon	Additiets Action parameters Station parameters By DP Interrupt Mode General DP parameters General DP parameters Bud rate Bata Ba	
(2) GW-7553(DPV1) Slot DP ID Order Number / Designation I Address Q Ad 1 24DO System setting 02 2 8DO Output Relay/Coil1 byte 3 3 4	Id Id Retain Last value Image: State Mode Big Endian(Motorola format) Image: State Mode Manual Image: State Mode Mode Image: State Mode	
5 5 6 7	OK Cancel He	21p

3. Set common parameters of the GW-7553

Common parameters→

Baud rate: 115200; Parity: none; Data: 8 data bit; Stop bit: 1 stop bit; Modbus type: Master

Modbus Format: Modbus	TCP; Byte	Order: Big	Endian
-----------------------	-----------	------------	--------

Properties - DP slave	
General Parameter Assignment	
Parameters	Value
🖃 🔄 Station parameters	
DP Interrupt Mode	DPVO
🕂 🦳 General DP parameters	
Device-specific parameters	
_ ≝] baud rate	115200 baud
parity	none
— 📰 data	8 data bit
_≝ stop bit	1 stop bit
— 🔛 Modbus Type	Master
– Modbus Format	Modbus RTU
— I/O Safe Mode	Retain Last Value
– 🖺 Byte Order	Big Endian (Motorola format)
– 📺 Output Data Mode	Manual
– Modbus Device ID (\$)	1
— Modbus Polling Interval(ms) (M)	500
— Query timeout Value (ms) (M)	500
I I I≣I TCP Connect Num(T)(M)	11
OK	Cancel Help

4. Set module parameters of the GW-7553

(1)Double click "Output Relay/Coil—1 byte" module

(2)Select "Parameter Assignment"

🙀 H W Config - [SIMATIC 300 Station (Configuration) S7_Pro3]	
💵 Station Edit Insert PLC Yiew Options Window Help	
D 😅 💱 📱 🖏 🎒 🗈 🗈 🖬 🏜 📳 🗁 器 🕅	
Image: CPU 31 PROFIBUS(1): DP master system (1) X2 DP 2.2 DI1600x 2.4 Count 3 Image: CPU 31 4 Image: CPU 32 Double click Image: CPU 32 module name Image: CPU 33	Properties - DP slave X Address / ID Parameter Assignment Select "Parameters Parameters Assignmental Parameters Image: Station parameters Image: Station parameters Image: Station parameters Image: Station parameters Image: Station parameters Image: Station parameters Image: Station parameters Image: Station parameters Image: Station parameters Image: Station parameters Image: Station parameters Image: Station parameters Image: Station parameters Image: Station parameters Image: Station parameters Image: Station parameters Image: Station parameters Image: Station parameters Image: Station parameter assignment Image: Station parameter assignment Image: Station parameter assignment
(2) GW-7553(DP∀1)	
Slot DP ID Order Number / Designation I Address Q Ad 1 24DO System setting 02 2 8DO Output Relay/Coil1 byte 3	
$\begin{array}{c c} 3 \\ \hline 4 \\ \hline 5 \\ \hline 6 \\ \hline \end{array}$	OK Cancel Help

5. Setup "Output Relay/Coil—1 byte" module parameters

Module parameters→

Modbus Slave Device ID: 2; Slave Address: 0 (Protocol address (base 0)), click ok.

Properties - DP slave 🔀			
Address / ID Parameter Assignment			
Deventer	Maha	[
arameters			
Modbus Slave Device ID (M)	2		
— 🗐 Start Address (M)	0		
– 📺 NO. of Relay/Coil (M)	8 BITS		
L TCP_Connect_Index(T)(M)	1		
ОК	Cancel	Help	

Step 3: Download the HW settings into SIMATIC PLC

1. Save and Compile

O <mark>ly</mark> I	🙀 H W Config - [SIMATIC 300 Station (Configuration) S7_Pro3]					
00	<u>Station Edit Insert PLC V</u> iew	∕ <u>O</u> ptions <u>W</u> i	ndow <u>H</u> elp			
] [<u>N</u> ew Open	Ctrl+N Ctrl+O	🗈 🗖 器 💦			
5	 Open ON <u>L</u> INE			^		
Ē	Close				<u>F</u> ind:	7553
	Save	0.1.0): DP master system (1)		Profile:	Standard
1	Save and Compile	Ctri+S				🕂 🧰 AS-I
	Properties		(2) GW-75!			DP/DP Coupler
	Import					⊡ m DP/RS232C Link
L	<u>E</u> xport		the second secon			🖻 📑 GW-7553(DPV1)
- 71	Consistency Check	Ctrl+Alt+K	-			Universal module
	Check CiR Compatibility	Ctrl+Alt+F				System setting
-	Durinet	Child	-			Output Relay/Coil2 byte
	<u>rint</u> Print Provinu	Ctri+P		~		🚺 Output Relay/Coil3 byte
<u><</u>	Page Satur			2		Output Relay/Coil4 byte
	r age serup		-			Output Relay/Coil5 byte
1	1 S7_Pro3\SIMATIC 300 Station	L				Output Relay/Coil0 byte
	2 S7_Pro2\SIMATIC 300 Station	ι	on I Address Q Address Comment			Output Relay/Coil8 byte
	<u>3</u> S7_Pro1\SIMATIC 300 Station	L	02	~		Output Relay/Coil9 byte
	4 S7_Pro4\SIMATIC 300 Station	L	3			Output Relay/Coil10 byte
-	Essit	ά 1+ι Σ 4				📕 Output Relay/Coil11 byte
	EXI	AII+F4				📕 🚺 Output Relay/Coil12 byte
5						Output DalaudCail 12 hada

2. HW settings into SIMATIC PLC



Step 4: Insert a new Organization Block (OB1,OB82,OB86)



Properties - Organization Block

Properties - Organizatio	n Block	×
General - Part 1 General	- Part 2 Calls Attributes	
<u>N</u> ame:	OB1	
Symbolic Name:	Cycle Execution	
Symbol <u>C</u> omment:		
Created in <u>L</u> anguage:	LAD	
Project path:		
Storage location of project:	C:\Program Files\Siemens\Step7\s	7proj\\$7_GW-~1
Date created:	Code 12/22/2009 11:41:05 AM	Interface
Last modified:	12/22/2009 11:41:05 AM	12/22/2009 11:41:05 AM
C <u>o</u> mment:		~
OK		Cancel Help

SIMATIC Manager - [S7_Pro]	1 C:\Program Files\Siemens\Step7\s7proj\	87_Pro1]			
🎒 File Edit Insert PLC View	Ele Edit Insert PLC View Options Window Help				
🗅 😂 📲 🐨 🕉 🖻 💼	🚵 🧟 💁 🔓 🚼 🎆 🔁 < No	o Filter > 💽 🏹	1 號 📾 🖷 🖿 🕅 📢		
 ⇒ S7_Pro1 ⇒ S7_Pro1 ⇒ S7_Pro1 ⇒ S7_Pro1 ⇒ S7_Program(1) ⇒ S0urces ⇒ Blocks 	System data	0B82 ⊕ 0B86			

Step 5: Edit OB1

		Name	Data T y pe	Address	Comment
	Ĩ,	OB1_DAT	Date	12.0	Date and time OB1 started
	1	END	Bool	20.0	
(1	Init	Bool	20.1	
$\overline{\ }$	1	Tri	Int	22.0	
	1				

Variables used in the example LD Program:

OB1 : "Main Program Sweep (Cycle)"

Profibus	Slave
Modbus	Master

Network 1: Title:

Comment:



Network 2: Title:

Comment:



Network 3: Title:



Network 4: Title:





Network 5: Title:







Step 6: Download the settings into SIMATIC PLC

Step 7: Make sure the RUN LED of the GW-7553 is on and the switch of the GW-7553 is at

Normal mode.





Step 8: Connect with GW-7553 and Utility

1. Set the Com Port Setting of the Utility

🁋 Profibus/Modbus Gateway Util:	ity		
Communication IP setting Safe value	setting View Help		
GW-7553	Com Port Setting		
	Port : Com1 💌 Bau	udrate : 115200 💌	Parity : None 💌
	Data bit : 8 databit 💌 St	top bit : 1 stopbit 💌	
	Item	Value (State)	
	🎾 Modbus Type		
	🎾 Modbus Format		
	🥔 I/O Value for Stop Mode		
	🥔 Byte Order		
	🥔 Output Data Mode		
	🎾 Modbus Device ID (S)		
	🎾 Poll interval time (M)		
	🎾 Time out value (M)		
	🎾 Module count		
	🎾 Tcp connect num (T)(M)		
	, Module State: 🔴		Com Port State : 🔴
Com Port isn't open !			

2.Click connect.

🏘 Profibus/Modbus Gateway Utility 📃 🗖 🔀				
Communication IP setting Safe value	setting View Help			
Connect Disconnect	Com Port Setting			
Exit	Port : Com1 V Baudrate : 115200 V P	arity : None 💌		
	Data bit : 8 databit 💌 Stop bit : 1 stopbit 💌			
	Item Value (State)			
	🎾 Modbus Type			
	🎾 Modbus Format			
	P I/O Value for Stop Mode			
	🥬 Byte Order			
	🥬 Output Data Mode			
	Modbus Device ID (5)			
	🎾 Poll interval time (M)			
	🎾 Time out value (M)			
	P Module count			
	ℱ Tcp connect num (T)(M)			
	Module State: 🔴	Com Port State : 🔴		
Com Port isn't open !				

3. Connection success

🏘 Profibus/Modbus Gateway Utility 📃 🗖 🗙					
Communication IP setting Safe value	Communication IP setting Safe value setting View Help				
GW-7553	Com Port Setting	: 115200 V Parity : None V			
Module 1	Data bit : 8 databit 🗾 Stop bit :	1 stopbit			
Module 3	Item	Value (State)			
	🎾 Modbus Type	Master			
	🥔 Modbus Format	тср			
	🎾 I/O Value for Stop Mode	Retain Last Value			
	🥬 Byte Order	Big Endian (Motorola format)			
	🔎 Output Data Mode	Manual			
	🎾 Modbus Device ID (S)	1			
	🎾 Poll interval time (M)	500ms			
	🎾 Time out value (M)	500ms			
	🎾 Module count	3			
	🎾 Tcp connect num (T)(M)	1			
	Module State: 🔵	Com Port State : 🔴			
Module is connected	Receive file name e	nor			

4. Click IP setting→Load from device to show IP setting dialog

🍓 Profibus/Modbus Gateway Uti	ility	
Communication IP setting Safe value	ne setting View Help	
GW-755 Load from file Load from device	Port : Com1 V Baudrate	: 115200 V Parity : None V
Module 1	Data bit : 8 databit 💌 Stop bit	1 stopbit 💌
Module 3	Item	Value (State)
	🎾 Modbus Type	Master
	🥔 Modbus Format	тср
	🎾 I/O Value for Stop Mode	Retain Last Value
	🥔 Byte Order	Big Endian (Motorola format)
	🎾 Output Data Mode	Manual
	🥔 Modbus Device ID (5)	1
	🎾 Poll interval time (M)	500ms
	🎾 Time out value (M)	500ms
	🥔 Module count	3
	P Tcp connect num (T)(M)	1
	Module State : 🔴	Com Port State : 🔴
Module is connected	Receive file name e	rror

5. Set the IP of the Modbus TCP Slave and click "Save to Device" button

to save the settings.

IP Setting		
Local IP Setting		
IP 192 . 168 . 255 . 2		
MASK: 255 . 255 . 0 . 0		
GATEWAY 192 . 168 . 0 . 1		
step1. Set I	P of Modbus TCP	
Remote IP Setting slave		
P(1): 192 . 168 . 0 . 123	Time out value (ms) : 1500 ReC	onnect time (ms) : 8000
IP(2): 192 . 168 . 0 . 100	Time out value (ms) : 1500 ReC	onnect time (ms) : 8000
IP(3): 192 . 168 . 0 . 100	Time out value (ms) : 1500 ReC	onnect time (ms) : 8000
IP(4): 192 . 168 . 0 . 100	Time out value (ms) : 1500 ReC	onnect time (ms) : 8000
IP (5): 192 . 168 . 0 . 100	Time out value (ms) : 1500 ReC	onnect time (ms) : 8000
IP(6): 192 . 168 . 0 . 100	Time out value (ms) : 1500 ReC	onnect time (ms) : 8000
IP(7): 192 . 168 . 0 . 100	Time out value (ms) : 1500 ReC	onnect time (ms) : 8000
IP(8): 192 . 168 . 0 . 100	Time out value (ms) : 1500 ReC	onnect time (ms) : 8000
	step2. Save the se	tting
	to GW-7553	to File Save to Device

Step 9: Set the switch of the GW-7553 to Normal Mode then reset the power of GW-7553.



Now the setting procedure has been finished and the user can write the data to the Modbus DO module at address QB3.



Example 6: PLC writes AO module data to GW-7553.

(Modbus FC06, FC16)

Write a Modbus TCP AO module (PROFIBUS Slave & Modbus TCP/Master)



SIMATIC STEP7 Configuration:

Step 1: Setup the GW-7553 module

1. Select GW-7553 module

🖳 HW Config - [SIMATIC 300 Station (Configuration) \$7_Pro3]						
에 Station Edit Insert PLC View Options Window Help						
D 🚅 💱 🖩 🖏 🎒 🖹 🛍 🏜 🚯 🗖 🗖 🚼						
1 PROFIBUS(1): DP master system (1) 2.2 DP 2.4 Count 3 Count 4 7553 module		Find: Profile:				
	~					

2. Add a System setting module

🙀 H W Config - [SIMATIC 300 Station (Configuration) S7_Pro3]	
💵 Station Edit Insert PLC View Options Window Help	
🗅 🍃 🖫 📓 🖓 🖶 🛯 🛍 🛍 🕼 🔀 🗠 🔛	
(0) UR 1 2 CPU 31 Y2 DP PROFIBUS(1): DP master system (1)	Find: 7553 Profile: Standard
2.2 DII60X 2.4 Count 3 4 c Double click System setting	DP/DP Coupler DP/RS232C Link DP/RS232C Link GW-7552 GW-7553(DPV1) Universal module System setting Output Relay/Coil1 byte Output Relay/Coil2 byte Output Relay/Coil3 byte
	Output Relay/Coil4 byte
(2) GW-7553(DPV1)	Output Relay/Coil6 byte
Slot DP ID Order Number / Designation I Address Q Address Comment 1 24DO System setting 02 1 2 1AO Output Register-1 word 256257 3	Output Relay/Coil8 byte Output Relay/Coil9 byte Output Relay/Coil10 byte Output Relay/Coil11 byte

3. Add "Output Register—1word" module(For FC16,multiple registers, please select more than 1 word

module)

🏨 H.W. Config - [SIMATIC 300 Station (Configuration) S7_Pro3]	
🛍 Station Edit Insert PLC Yiew Options Window Help	
D 😅 🖫 🖳 🎒 🗈 🗈 🛛 🏜 🛍 📳 📼 🞇 💦	
Image: CPU 31 PROFIBUS(1): DP master system (1) X2 DP 2.2 DII6dDx 3 Image: CPU 31 4 Image: CPU 31 PROFIBUS(1): DP master system (1) Image: CPU 31 A2 DP 2.2 DII6dDx 3 4 Image: CPU 31 Image: CPU 31 <th>nd: 7553 rofile: Standard Input Relay/Coil28 byte Input Relay/Coil29 byte Input Relay/Coil29 byte Input Relay/Coil30 byte Input Relay/Coil31 byte Input Relay/Coil31 byte</th>	nd: 7553 rofile: Standard Input Relay/Coil28 byte Input Relay/Coil29 byte Input Relay/Coil29 byte Input Relay/Coil30 byte Input Relay/Coil31 byte Input Relay/Coil31 byte
Register - 1 wor	C Output Register-1 word Output Register-2 word Output Register-3 word Output Register-4 word Output Register-5 word Output Register-5 word Output Register-6 word
(2) GW-7553(DP∀1) Slot DP ID Order Number / Designation I Address Q Address Comment 1 24DO System setting 02 ▲	Output Register7 word Output Register8 word Output Register9 word Output Register10 word Output Register11 word Output Register12 word Output Register13 word

Step 2: Setup the parameters of the GW-7553

- 1. Double click GW-7553 icon
- 2. Select "Parameter Assignment"

🖳 H W Config - [SIMATIC 300 Station (Configuration) S7_Pro3]				
💵 Station Edit Insert PLC Yiew Options Window Help				
D 😂 🖫 🖳 🖏 🎒 🗈 💼 🖬 🏜 🕼 🗔 😤 😽				
○) UR	Properties - DP slave General Parameter Assignment Select "Para	x meter		
2 CPU 31 X2 DP 2.2 D1160Dx	Parameters Assignment			
	DP Interrupt Mode DP	200		
🚽 🚽 🗸 GW-7553 icon 🖉 🎬	General Dr parameters Device-specific parameters			
	baud rate	5200 baud		
	$ = \underbrace{\exists \ aaa}_{m} \boxed{30}_{m} $	lata Dit		
	Stop bit 1 s	actor		
	Widdbus Type	odbus P TII		
	III I/O Safe Mode Re	tain Last Value		
	Byte Order Bi	g Endian (Motorola, format)		
(2) GW-7553(DPV1)	□ Dyte chara Mode Mr	anual		
Slot DP ID Order Number / Designation J Address 0 Add	_≡ Modbus Device ID (S) 1			
1 24DO Surtem setting 0.2	- B Modbus Polling Interval(ms) (M) 50	0		
2 140 Output Register-1 word 256 2	_ 🔄 Query timeout Value (ms) (M) 50	0		
	TCP Connect Num(T)(M)	V		
4				
5	OF	Canaal H-1-		
6		Lancer Help		
7				
3. Set common parameters of the GW-7553

Common parameters→

Baud rate: 115200; Parity: none; Data: 8 data bit; Stop bit: 1 stop bit; Modbus type: Master

Properties - DP slave	
General Parameter Assignment	
Parameters	Value
☐	DPVO
	1150001
_≝] baud rate _≡] parity	none
data data	8 data bit
- stop bit	1 stop bit
_≝] Modbus Type _≅] Modbus Format	Master Modbus R TU
I/O Safe Mode	Retain Last Value
Byte Order	Big Endian(Motorola format)
Output Data Mode Modbus Device ID (S)	Manual 1
- [1] Modbus Polling Interval(ms) (M)	500
- Query timeout Value(ms)(M)	500
OK	Cancel Help

4. Set module parameters of the GW-7553

(1)Double click "Output Register—1word" module

(2)Select "Parameter Assignment"

R H₩ Config - [SIMATIC 300 Station (Configuration) S7_Pro3]		
💵 Station Edit Insert PLC View Options Window Help		
D 😂 💱 🖩 🖏 🚑 🛍 🗈 🏜 🏜 🚯 🗔 器 😒		
PROFIBUS(1): DP master system (1) 2.2 DPI 607X 2.4 Count 3 4 2.7 DOUBLE click module name	Properties - DP slave Address / ID Parameter Assignment Select "Parameters Station parameters Device-specific parameters Device-specific parameters Device-specific parameters Distribution Distr	
DP ID Order Number / Designation I Address Q Add 1 24DO System setting 02 2 IAO Output Register-1 word 2562 3 0 0 0		
4	OK Cancel Help	

5. Setup "Output Register—1 word" module parameters

Module parameters→

Modbus Slave Device ID: 2; Slave Address: 0 (Protocol address (base 0)), click ok.

Properties - DP slave	×
Address / ID Parameter Assignment	
Parameters	Value
E California Station parameters	
🕂 📇 Device-specific parameters	
– 🖺 Modbus Slave Device ID (M)	2
— Start Address (M)	0
$ \ \ \Box \equiv TCP_Connect_Index(T)(M) $	1
,	
OK	Cancel Help

Step 3: Download the HW settings into SIMATIC PLC

1. Save and Compile

	IIW Config - [SIMATIC 300 Station (Configuration) S7_Pro1]												
	0 <u>S</u> ta	ation <u>E</u> dit Insert <u>P</u> L	.C <u>V</u> iew	Options <u>W</u>	indow	<u>H</u> elp							
		<u>N</u> ew Open		Ctrl+N Ctrl+O		3	≣ \?				_		
		 Open ONLINE Close			_	PRO	FIBUS(1): D	P master system	(1)		^	<u>F</u> ind:	7552
		Save		0.1.4				(2)	3W-75!			<u>P</u> rofile:	Standard
		Save and Compile		C#I+S					10F.7				🔤 📕 Input Relay/Coil25 byte
		Properties						Second C					📕 Input Relay/Coil26 byte
	-	Import			-								Input Relay/Coil27 byte
		Emport											Input Relay/Coil28 byte
	_	Export			-								Input Relay/Coll29 byte
		Consistency Check		Ctrl+Alt+K									Input Relay/Coll-50 byte
		Check CiR Compatibilit	ty	Ctrl+Alt+F									Input Relay/Coil32 hyte
	-				-1								Output Register1 word
		Print		Ctrl+P							~		Output Register2 word
<		Print Previe <u>w</u>								>			🛛 📕 Output Register3 word
		Page Setup											🖳 🚺 Output Register4 word
	•	1 S7 Pm1/SIMATIC 30	0 Station										🖳 🚺 Output Register5 word
	7	2.87 Pm2/SIMATIC 30	10 Station				Lúddmon	0.444mm	Comment		1		🛛 🧕 Output Register6 word
	ri -	2 97 Pro2991M & TIC 20	10 Station		on		I Auuless	Q Autress	Comment		4		Output Register7 word
		A C7 Bas AND A TIC 20						256 257		^^			Output Register8 word
	-	4 57_FI04 SIMATIC 50			_			250251					Output Register9 word
	1	Exit		Alt+F4									Output Register10 word
	5				_								Output Register11 word
	6												Output Register-12 Word
	7									Ξ.			Output Register-15 word
	8												Output Register15 word
	9												Output Register16 word
	10												Output Register17 word
	11												Output Register18 word
	12												🖳 🚺 Output Register19 word
	13					_							— 📗 Output Register20 word
	$\frac{14}{15}$												Output Register21 word
	$\frac{15}{16}$												Output Register22 word
	17												🛛 📗 Output Register23 word

2. HW settings into SIMATIC PLC

🔩 H W Config - [SIMA]	TIC 300 Station (Configuration	i) \$7_Pro3]				
🔟 <u>S</u> tation <u>E</u> dit Insert	<u>PLC V</u> iew <u>O</u> ptions <u>W</u> indow <u>H</u>	<u>I</u> elp				
n 🚘 🔐 🖩 🖳 🧯	Download	Ctrl+L				
	<u>U</u> pload					
(0) UR	Download Module Identifi <u>c</u> ation Upload Module Ide <u>n</u> tification to P	G		Î	<u>F</u> ind:	7553
2 CPU 31	<u>F</u> aulty Modules				<u>P</u> rofile:	Standard
2.2 D116/D2 2.4 Count 3 4 	Module Information Operating Mode Clear/ <u>R</u> eset Set Time of D <u>ay</u> <u>M</u> onitor/Modify	Ctrl+D Ctrl+I				Input Relay/Coil28 Input Relay/Coil29 Input Relay/Coil29 Input Relay/Coil30 Input Relay/Coil31 Input Relay/Coil32 Output Register1 we
	Updat <u>e</u> Firmware	I				Output Register3 wo
	Save De <u>v</u> ice Name to Memory Ca	rd		~		Output Register4 wa
	Ethernet	• • L				Output Register6 wo
(2) G₩-7553	PROFIBUS	•				Output Register7 wo
Slot DP ID	Save Service Data	dr	ess Comment	1		Output Register9 wo
1 24D0	System setting	02		~		Output Register10 w
2 1AO	Output Register1 word	25625	7			Output Register12 w
3 4						Output Register13 w

Step 4: Insert a new Organization Block (OB1,OB82,OB86)



Properties - Organization Block								
General - Part 1 General - Part 2 Calls Attributes								
<u>N</u> ame:	OB1							
Symbolic Name:	Cycle Execution							
Symbol <u>C</u> omment:								
Created in <u>L</u> anguage:	LAD							
Project path:								
of project:	C:\Program Files\Siemens\Step7\s7proj\S7_GW-~1							
Data created :	Code Interface							
Last modified:	12/22/2009 11:41:05 AM 12/22/2009 11:41:05 AM							
C <u>o</u> mment:								
ОК	Cancel Help							



Step 5: Edit OB1

	Name	Data T y pe	Address	Comment
1	OB1_MAX	Int	10.0	Maximum cycle time of OB1 (milliseconds)
12	OB1_DAT	Date	12.0	Date and time OB1 started
ø	END	Bool	20.0	
12	Tri	Int	22.0	
1	initial	Bool	24.0	

Variables used in the example LD Program:

OB1 : "Main Program Sweep (Cycle)"

PROFIBUS Slave Modbus Master

Network 1 : Reset Counter(C1)

Reset Counter(Cl)



Network 2: QBD add "1" then PLC will send PQB256 out.

l word 16AO



Using T2 trigger T1 If counter (C1) add 1 and Tri will add 1 every 1s. **Network 3** : Timer T1 & T2

Using T2 trigger T1



Network 4 : Counter Cl

If counter(Cl) add "l" and Tri will add "l" ,too.



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

Network 5: Compare Tri & 256

```
If Tri is equal to 256 ,Cl will reset.
```





Step 6: Download the settings into SIMATIC PLC

Step 7: Make sure the RUN LED of the GW-7553 is on and the switch of the GW-7553 is at Normal mode.





Step 8: Connect with GW-7553 and Utility

1. Set the Com Port Setting of the Utility

🁋 Profibus/Modbus Gateway Util:	ity		
Communication IP setting Safe value	setting View Help		
GW-7553	Com Port Setting		
	Port : Com1 💌 Bau	udrate : 115200 💌	Parity : None 💌
	Data bit : 8 databit 💌 St	top bit : 1 stopbit 💌	
	Item	Value (State)	
	🎾 Modbus Type		
	🎾 Modbus Format		
	🥔 I/O Value for Stop Mode		
	🥔 Byte Order		
	🥔 Output Data Mode		
	🎾 Modbus Device ID (S)		
	🎾 Poll interval time (M)		
	🎾 Time out value (M)		
	🎾 Module count		
	🎾 Tcp connect num (T)(M)		
	, Module State: 🔴		Com Port State : 🔴
Com Port isn't open !			

2.Click connect.

🍓 Profibus/Modbus Gateway Utility 📃 🗖 🔀							
Communication IP setting Safe value	setting View Help						
Connect Disconnect	Com Port Setting						
Exit	Port : Com1 V Baudrate : 115200 V P	arity : None 💌					
	Data bit : 8 databit 💌 Stop bit : 1 stopbit 💌						
	Item Value (State)						
	🎾 Modbus Type						
	🎾 Modbus Format						
	🎾 I/O Value for Stop Mode						
	🎾 Byte Order						
	🎾 Output Data Mode						
	🎾 Modbus Device ID (S)						
	🎾 Poll interval time (M)						
	🎾 Time out value (M)						
	P Module count						
	ℱ Tcp connect num (T)(M)						
	Module State: 🔴	Com Port State : 🔴					
Com Port isn't open !							

3. Connection success

👋 Profibus/Modbus Gateway Utility 📃 🗖 🔀								
Communication IP setting Safe value	Communication IP setting Safe value setting View Help							
GW-7553	Com Port Setting	: 115200 V Parity : None V						
Module 1	Data bit : 8 databit 🗾 Stop bit :	1 stopbit						
Module 3	Item	Value (State)						
	🎾 Modbus Type	Master						
	🥔 Modbus Format	тср						
	🎾 I/O Value for Stop Mode	Retain Last Value						
	🥬 Byte Order	Big Endian (Motorola format)						
	🔎 Output Data Mode	Manual						
	🎾 Modbus Device ID (S)	1						
	🎾 Poll interval time (M)	500ms						
	🎾 Time out value (M)	500ms						
	🎾 Module count	3						
	🎾 Tcp connect num (T)(M)	1						
	Module State: 🔵	Com Port State : 🔴						
Module is connected	Receive file name e	nor						

4. Click IP setting→Load from device to show IP setting dialog

🍓 Profibus/Modbus Gateway Uti	ility		
Communication IP setting Safe value	ne setting View Help		
GW-755 Load from file Load from device	Port : Com1 V Baudrate	: 115200 V Parity : None V	
Module 1	Data bit : 8 databit 💌 Stop bit	1 stopbit 💌	
Module 3	Item	Value (State)	
	🎾 Modbus Type	Master	
	🥔 Modbus Format	тср	
	🎾 I/O Value for Stop Mode	Retain Last Value	
	🥔 Byte Order	Big Endian (Motorola format)	
	🎾 Output Data Mode	Manual	
	🥔 Modbus Device ID (5)	1	
	🎾 Poll interval time (M)	500ms	
	🎾 Time out value (M)	500ms	
	🥔 Module count	3	
	P Tcp connect num (T)(M)	1	
	Module State : 🔴	Com Port State : 🔴	
Module is connected	Receive file name e	rror	

5. Set the IP of the Modbus TCP Slave and click "Save to Device" button

to save the settings.

IP Setting	
Local IP Setting	
IP 192 . 168 . 255 . 2	
MASK: 255 . 255 . 0 . 0	
GATEWAY 192 . 168 . 0 . 1	
step1. Set IP of Modbus TCP	
Remote IP Setting slave	
P(1): 192 . 168 . 0 . 123	Time out value (ms): 1500 ReConnect time (ms): 8000
I P (2): 192 . 168 . 0 . 100	Time out value (ms) : 1500 ReConnect time (ms) : 8000
IP(3): 192 . 168 . 0 . 100	Time out value (ms) : 1500 ReConnect time (ms) : 8000
IP(4): 192 . 168 . 0 . 100	Time out value (ms) : 1500 ReConnect time (ms) : 8000
IP (5): 192 . 168 . 0 . 100	Time out value (ms) : 1500 ReConnect time (ms) : 8000
IP(6): 192 . 168 . 0 . 100	Time out value (ms) : 1500 ReConnect time (ms) : 8000
IP(7): 192 . 168 . 0 . 100	Time out value (ms) : 1500 ReConnect time (ms) : 8000
IP(8): 192 . 168 . 0 . 100	Time out value (ms) : 1500 ReConnect time (ms) : 8000
step2. Save the setting	
	to GW-7553 Save to File Save to Device

Step 9: Set the switch of the GW-7553 to Normal Mode then reset the power of GW-7553.



Now the setting procedure has been finished and the user can write the data to the Modbus AO module at address PQW256.



Network 2: QBD add "1" then PLC will send PQB256 out.