Siemens S7-1200/S7-1500 (Absolute Addressing) (Ethernet)

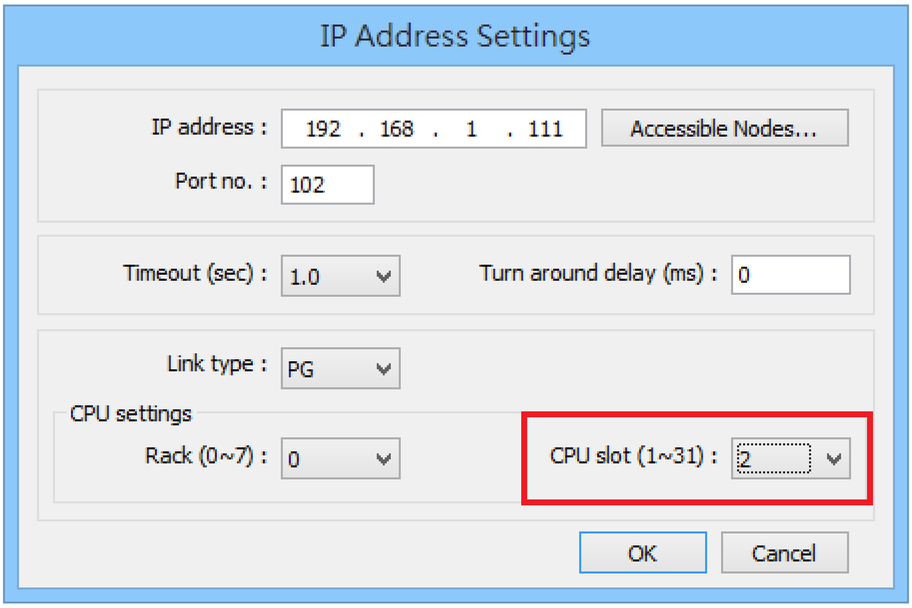
Supported Series: Siemens S7-300/1200/1500 series, ET200SP series
Website: http://www.siemens.com/entry/cc/en/

HMI Setting:

Parameters	Recommended	Options	Notes
PLC type	Siemens S7-1200/S7-1500 (Absolute Addressing) (Ethernet)		
PLC I/F	Ethernet		
Port no.	102		
PLC sta. no.	2		
Rack	0		
CPU slot	1		

On-line simulator	Yes	**Multi-HMI connect**	Yes (Max:3 HMI)

*Connect S7-300 settings



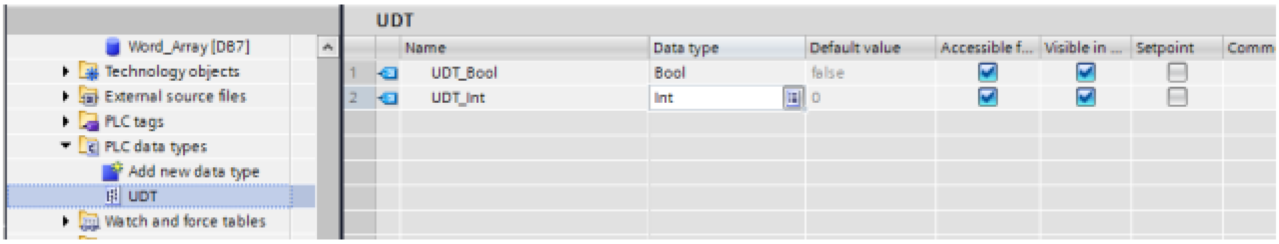
Support Device Type:

S7-1200 data type	EasyBuilder data format	Memo
Bool	bit	
Byte	16-bit BCD, Hex, Binary, Unsigned	8-bit
SInt	16-bit BCD, Hex, Binary, Signed	8-bit
USInt	16-bit BCD, Hex, Binary, Unsigned	8-bit
Word	16-bit BCD, Hex, Binary, Unsigned	16-bit
Int	16-bit BCD, Hex, Binary, Signed	16-bit
UInt	16-bit BCD, Hex, Binary, Unsigned	16-bit
DWord	32-bit BCD, Hex, Binary, Unsigned	32-bit
DInt	32-bit BCD, Hex, Binary, Signed	32-bit
Real	32-bit Float	32-bit
UDInt	32-bit BCD, Hex, Binary, Unsigned	32-bit
LInt	64-bit Signed	
ULInt	64-bit Unsigned	
LReal	64-bit Double	
Array		

Note: EasyBuilder Pro V6.03.02 or later supports 64 bits data type, but please note that the address limit range is 48 bits in maximum.

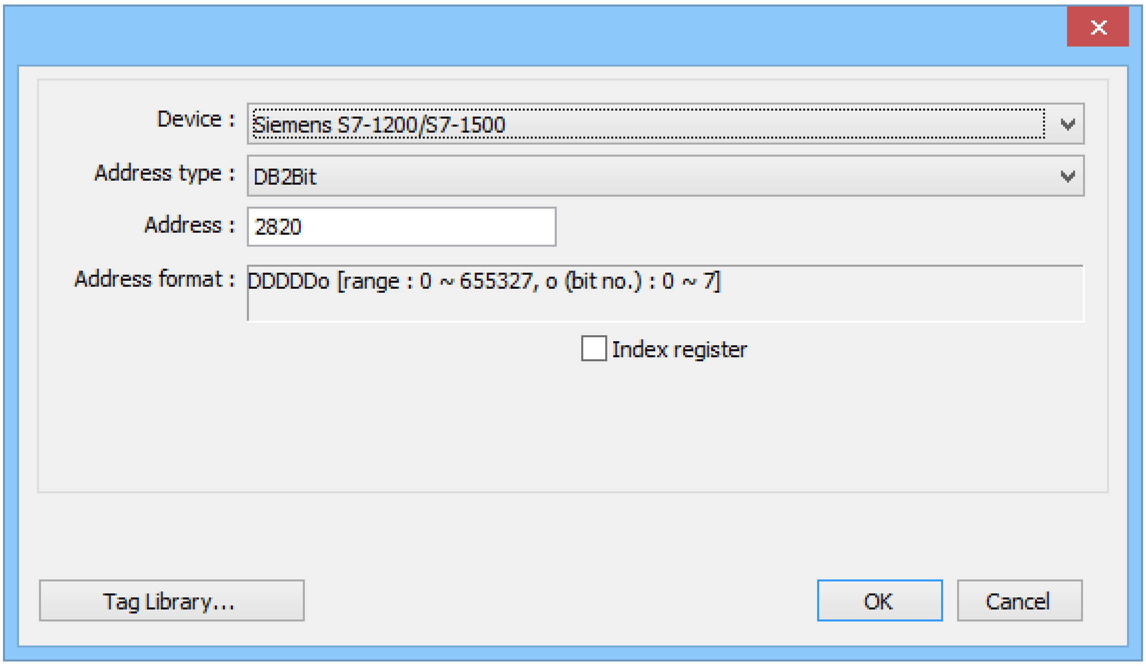
User define type

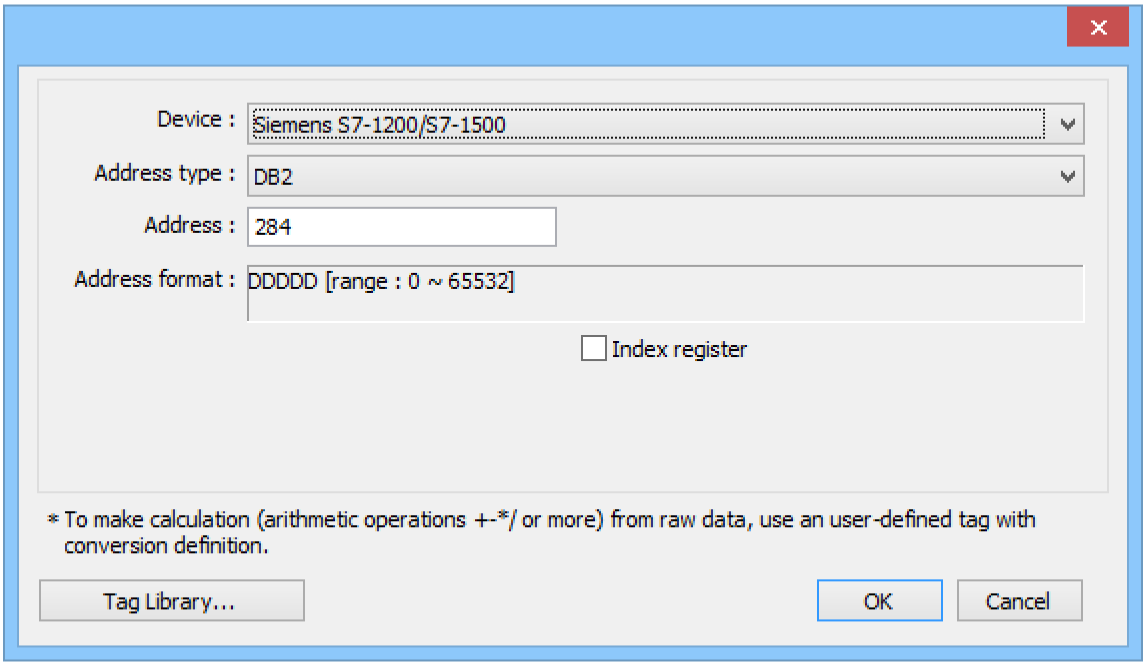
1. User define type can be established in PLC data type



2. User define type can be used in DB. User-defined types mapping address fuction are not supported. When using a user-defined type, please add it to the end of DB, to avoid influencing import and communication (address offset calculation).

3. User define type cannot be imported automatically, you need to manually create an address in EasyBuilder Pro to communicate.





Device Address:

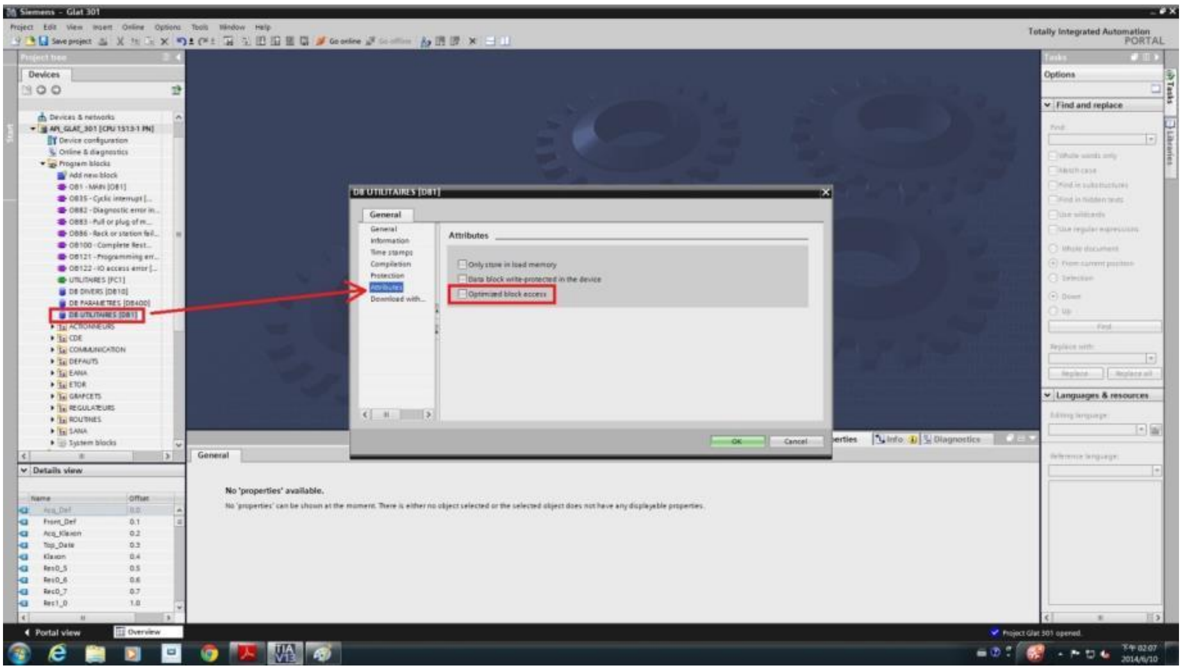
Bit/Word	Device type	Format	Range	Memo
B	I	DDDDDo	0 ~ 655357	Input (I)
B	Q	DDDDDo	0 ~ 655357	Output (O)
B	M	DDDDDo	0 ~ 655357	Bit Memory
B	DBnBit	FFFFFDDDDo	0 ~ 6553599997	
B	DBxBit	FFFFFDDDDDo	0 ~ 10700655327	
B	DB1Bit-DB99Bit	DDDDDo	0 ~ 655327	Data Register Bit
BYTE	IB	DDDDD	0 ~ 65535	Input (I)
W	IW	DDDDD	0 ~ 65533	Input (I)
DW	ID	DDDDD	0 ~ 65532	Input (I)
BYTE	QB	DDDDD	0 ~ 65535	Output (O)
W	QW	DDDDD	0 ~ 65533	Output (O)
DW	QD	DDDDD	0 ~ 65532	Output (O)
BYTE	MB	DDDDD	0 ~ 65535	Bit Memory
W	MW	DDDDD	0 ~ 65533	Bit Memory
DW	MD	DDDDD	0 ~ 65532	Bit Memory
BYTE	DBBn	FFFFFDDDD	0 ~ 655359999	Data Register
BYTE	DBBx	FFFFFDDDDD	0 ~ 1070065532	Data Register
W	DBn	FFFFFDDDD	0 ~ 655359999	Data Register
W	DBx	FFFFFDDDDD	0 ~ 1070065532	Data Register
DW	DBDn	FFFFFDDDD	0 ~ 655359999	Data Register
DW	DBDx	FFFFFDDDDD	0 ~ 1070065532	Data Register
W	DBn_String	FFFFFDDDD	0 ~ 655359999	Char Array
W	DBx_String	FFFFFDDDDD	0 ~ 1070065532	Char Array
W	DBn_String1	FFFFFDDDD	0 ~ 655359999	String
W	DBx_String1	FFFFFDDDDD	0 ~ 1070065532	String
DW	DBDn_String	FFFFFDDDD	0 ~ 655359999	Char Array
DW	DBDx_String	FFFFFDDDDD	0 ~ 1070065532	Char Array
W	DB1 ~ DB99	DDDDD	0 ~ 65532	Data Register
DW	S5TIME_10Ms	FFFFFDDDD	0 ~ 655359999	
DW	S5TIME_100Ms	FFFFFDDDD	0 ~ 655359999	
DW	S5TIME_1S	FFFFFDDDD	0 ~ 655359999	
DW	S5TIME_10S	FFFFFDDDD	0 ~ 655359999	

- Double word and floating point value must use DBDn device type.

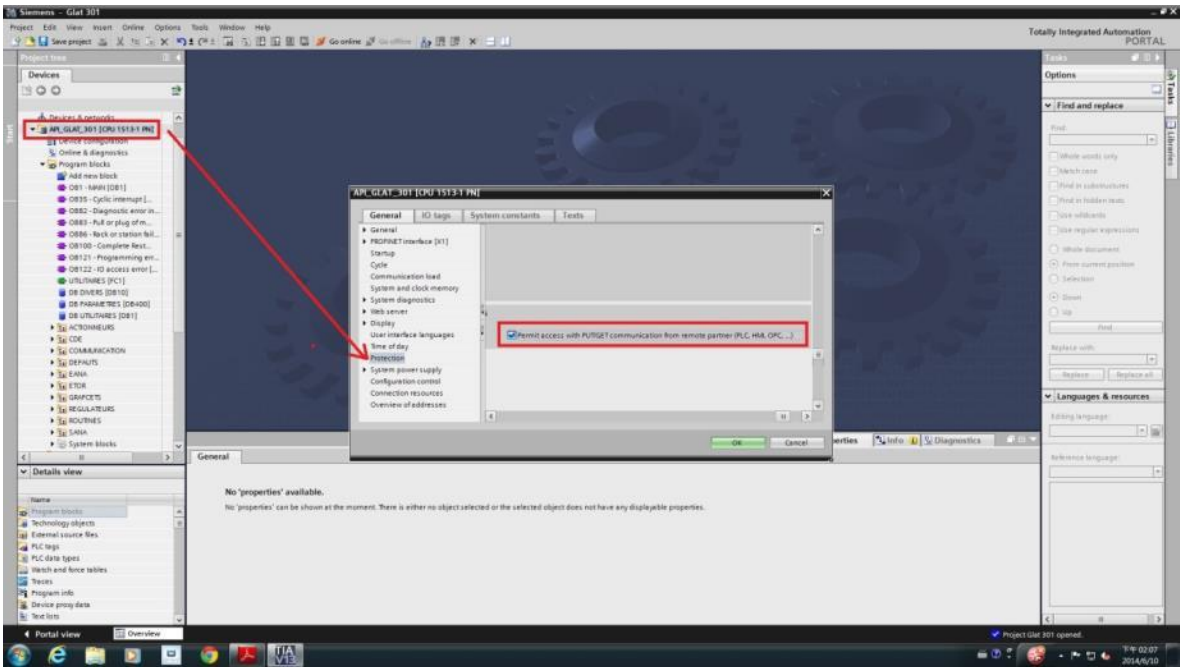
PLC Setting:

Note: Please follow the settings below, or the communication may fail.

1. Do not check [DB UTILITAIRES] -> [Attributes] -> [Optimized block access]



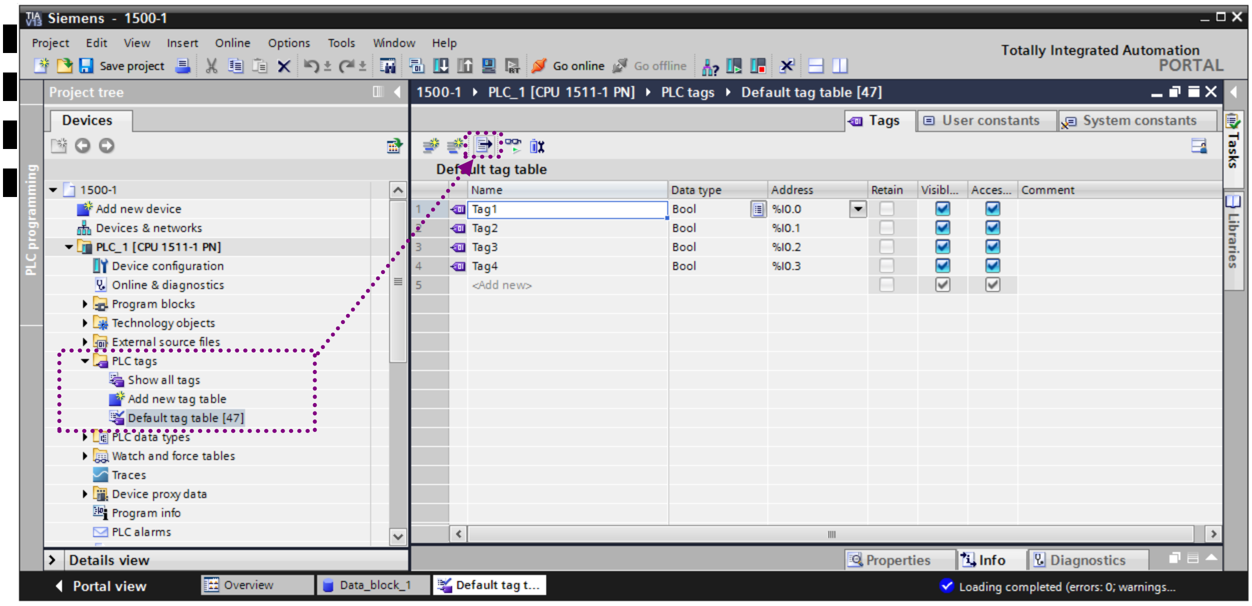
2. Check [General] -> [Protection] -> [Permit access with PUT/GET communication from remote partner]



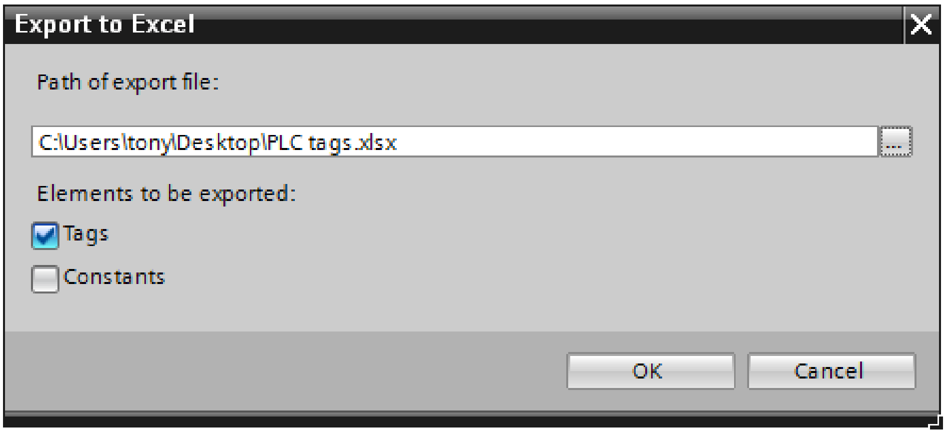
How to import address tags using TIA portal?

1. Exporting PLC Tags (.xlsx file format).

1.1 Under [PLC tags] create the address tags and then click the Export icon.

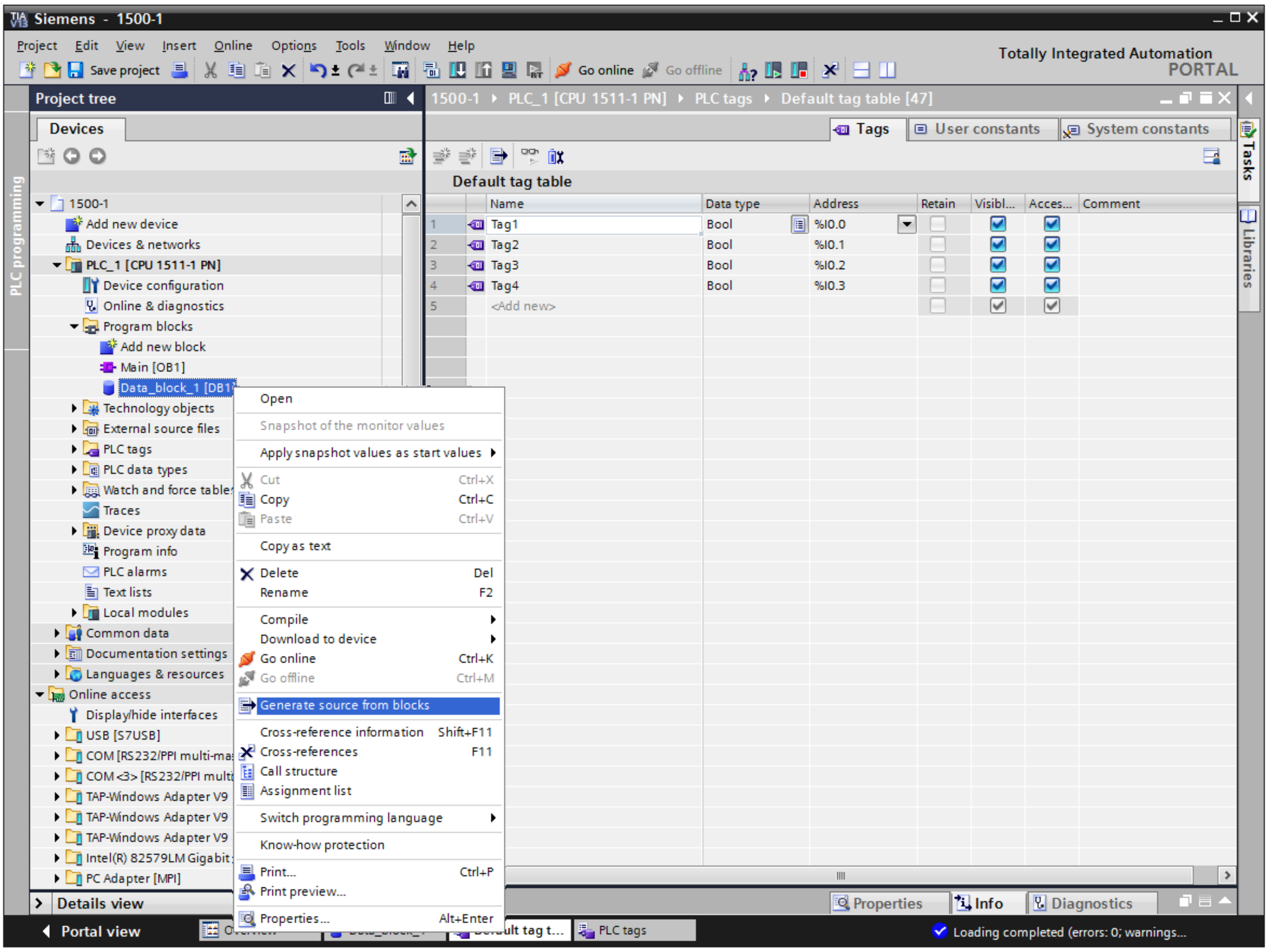


1.2 Designate the directory to save the file and click OK button.

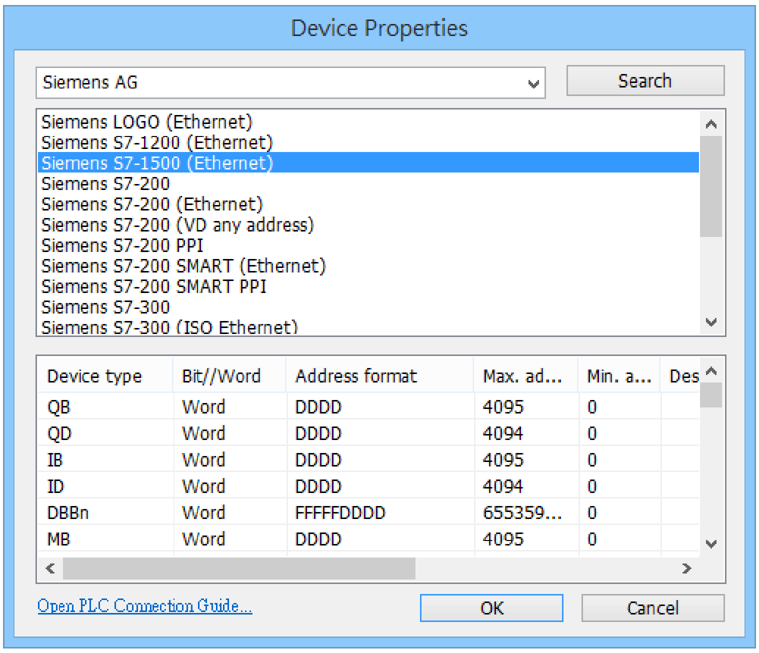


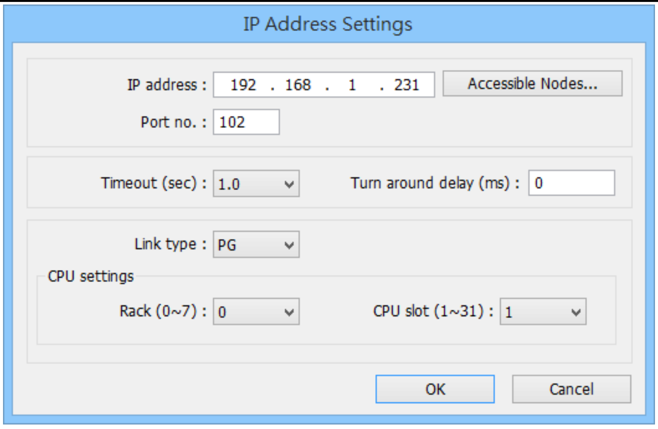
2. Exporting Program Blocks (.scl file format).

2.1 Under [Program blocks] create “Data_block_1 [DB1]” as shown in the following figure. Click the right mouse button on [DB1] and then click [Generate source from blocks].

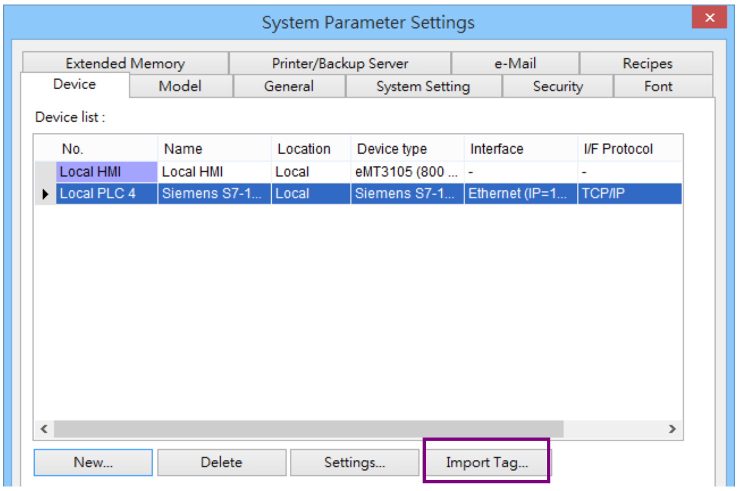


2.2 In EasyBuilder click [New PLC…], select *Siemens S7-1500 (Ethernet)* PLC type, and then click [Settings…] to set the parameters.

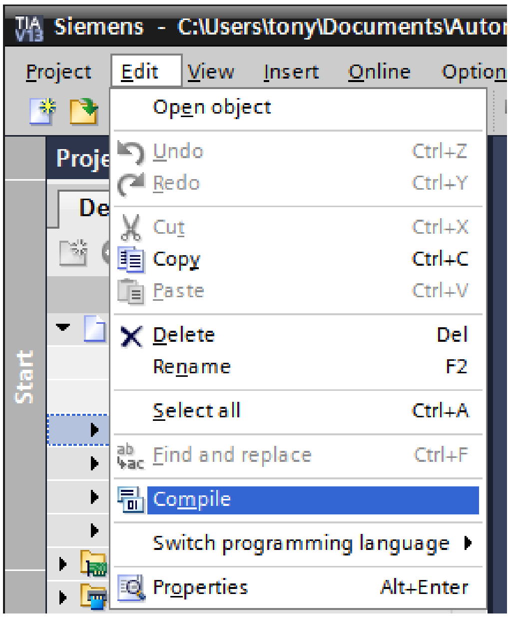


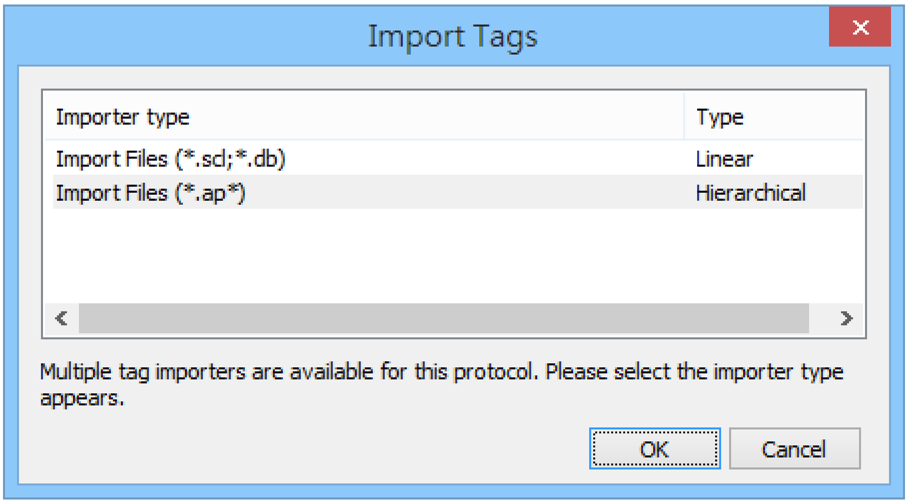


2.3 Click [Import Tag…] button.



2.4 Select file type (***.sd**; ***.db**) or select TIA file (***.apxx**) for import. Compiling the TIA file by using TIA software before import is necessary to avoid importing incomplete data.
*Note1. Please compile your project before importing TIA files **(*.ap12~16)**.



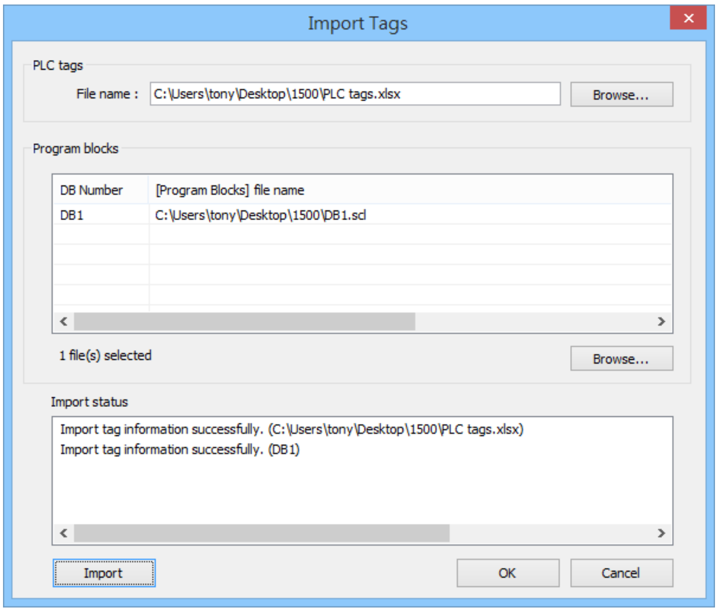


Note: CPU 1510SP-1 PN (6ES7510-1DJ01-0AB0)

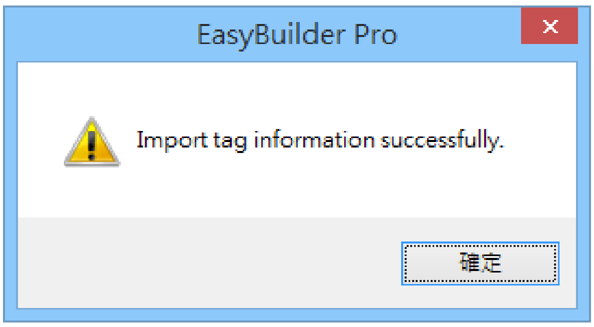
Unable to import using TIA project (*.ap*), please use **[Get tag info]** instead.

2.5 Select the PLC Tags and Program Blocks to be imported, click [Import] button, and then click [OK] to leave when the tags are imported successfully.

*** At least one db file must be imported. If only plc tags cannot be imported successfully.**

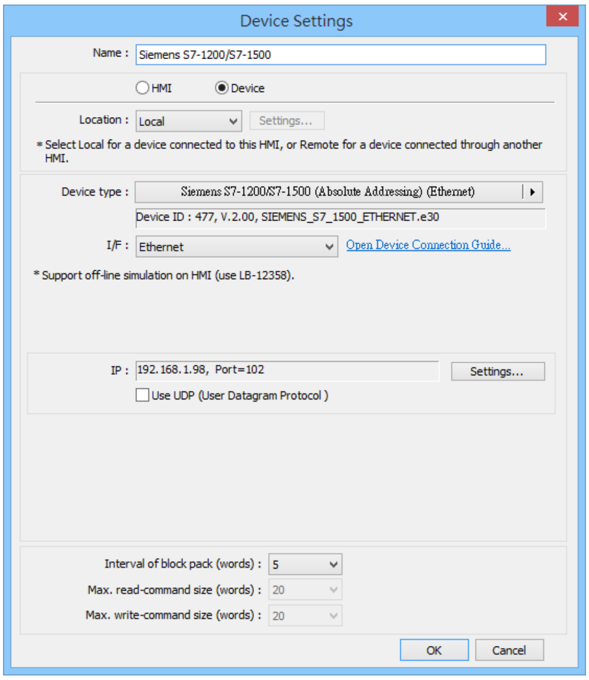


2.6 The following message window is shown if the import has succeeded.

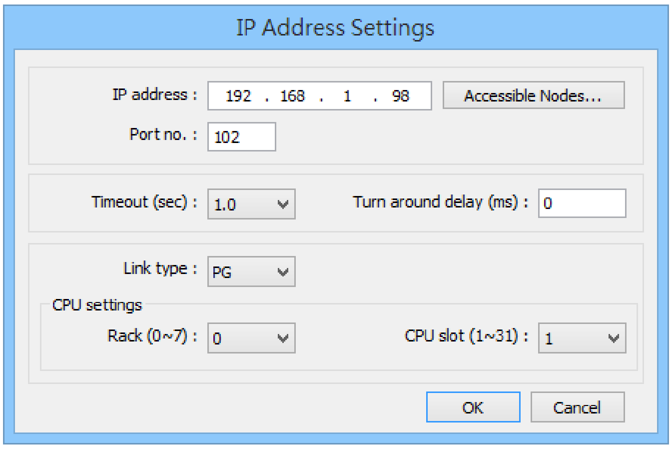


Get Tag Info:

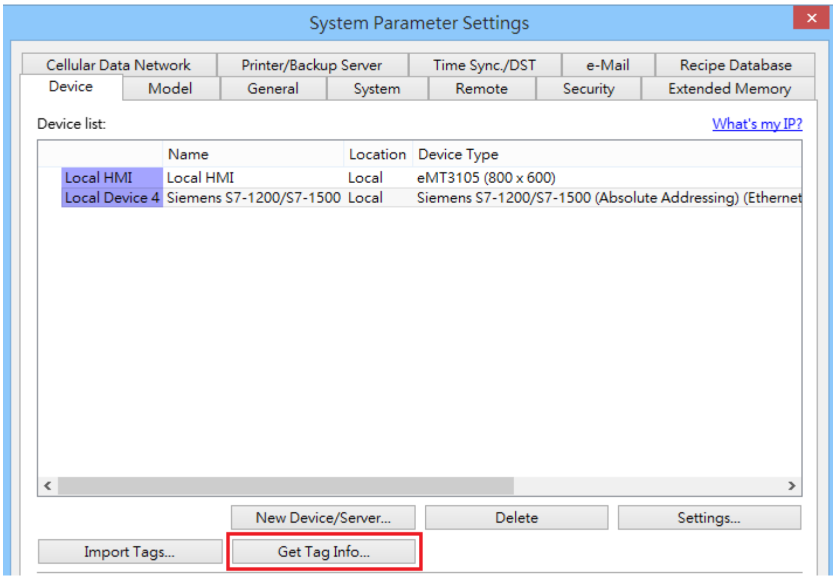
1. In S7-1200/1500 program software create PLC program and tag and then download to PLC.
2. Select Go offline, EasyBuilder will connect to PLC and get tag data. In PLC type select “**SIEMENS S7-1200/1500 (Absolute Addressing) (Ethernet)**”.



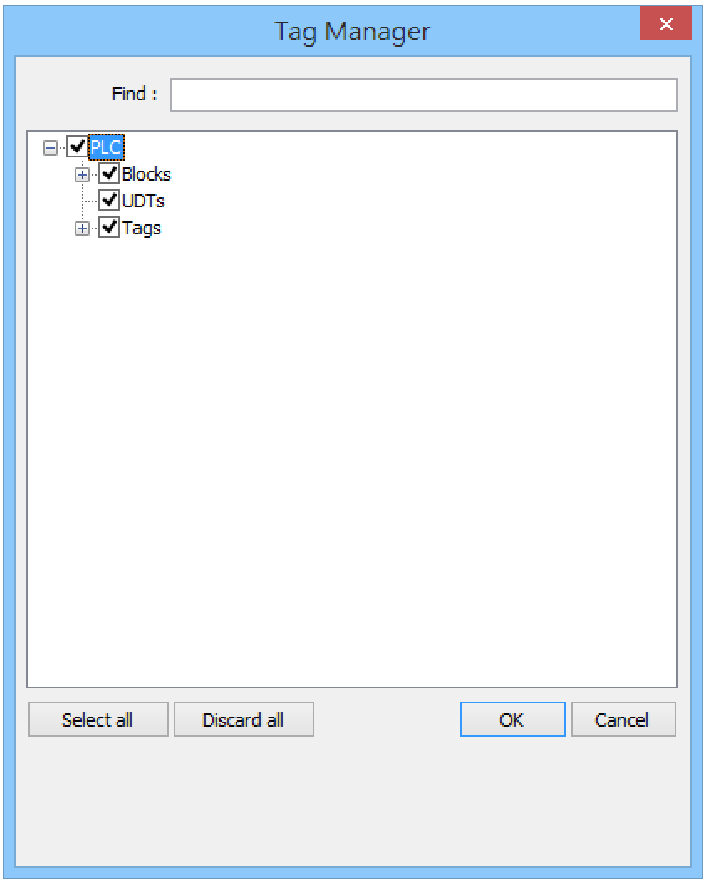
3. Click “**Settings**…”, input PLC IP address.



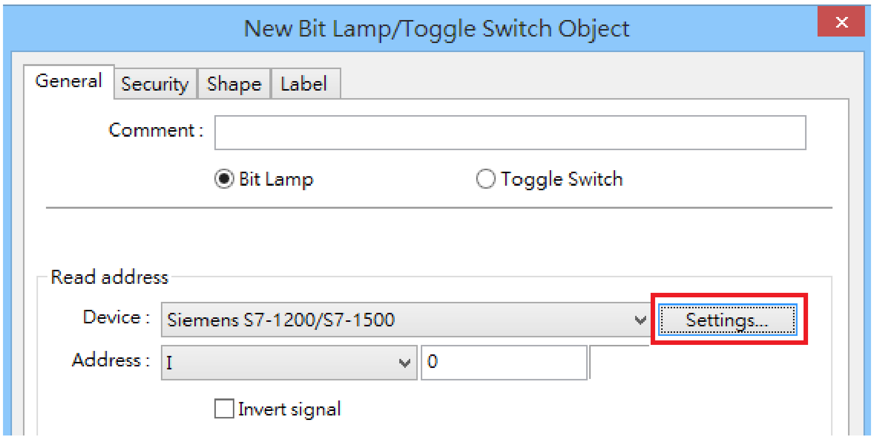
4. Check the PLC that is not connected to any PC. Click “**Get tag info**…”.



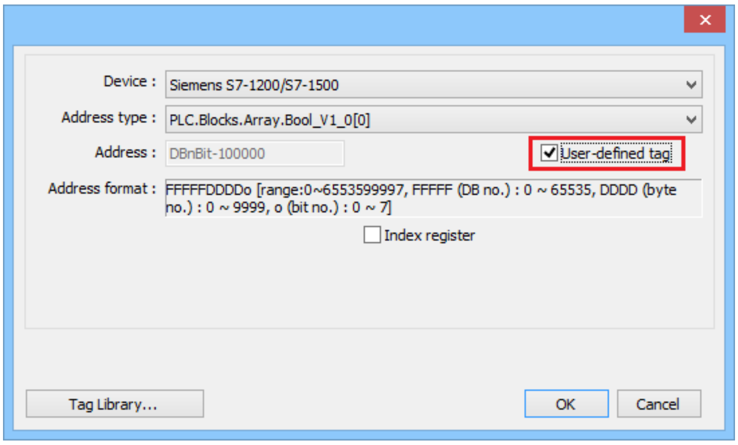
5. Added Tag Manager that allows selecting the Siemens S7-1200/1500 PLC tags to be imported.



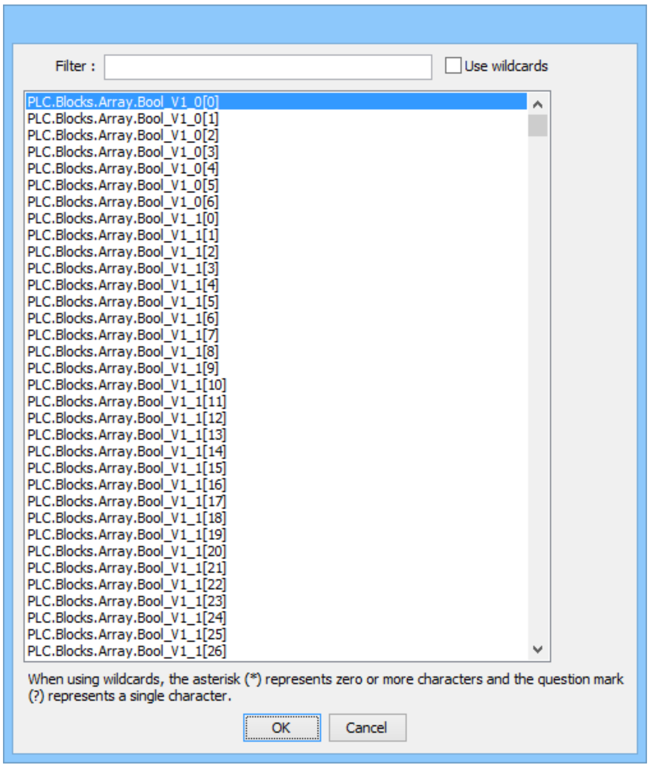
6. Create an object and click read address “**Settings**…”



7. In device select “**S7-1200/1500”** then select “**user-defined tag”**.



8. Select PLC tag.



Wiring Diagram:

Ethernet cable: