# Siemens S7-1200 (Symbolic Addressing) (Ethernet)

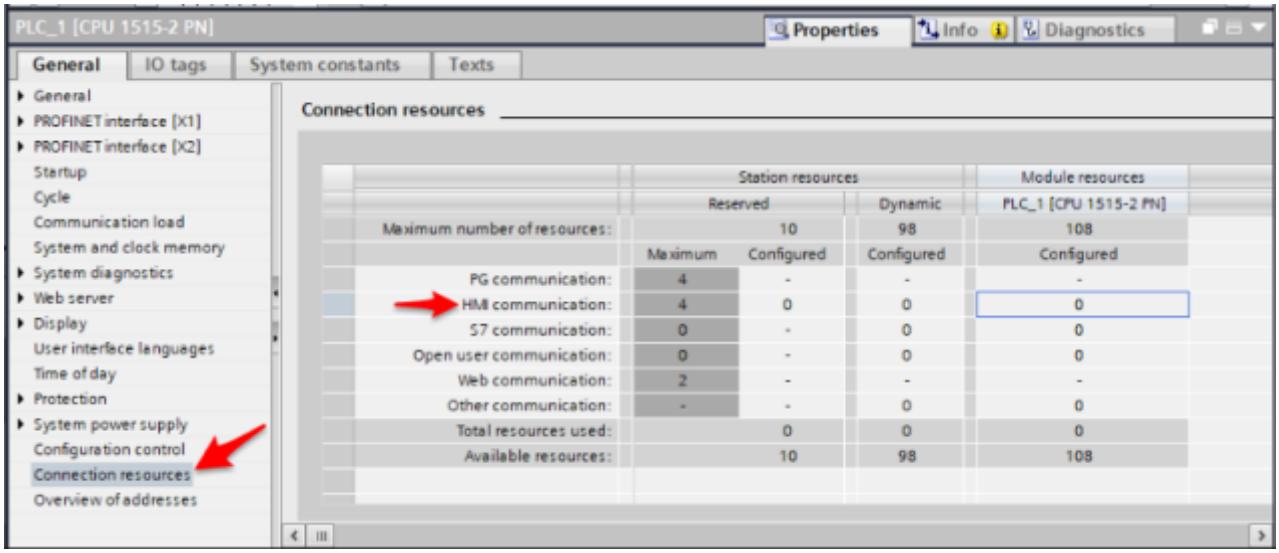
Supported Series: Siemens S7-1200 series Ethernet.
Website: http://www.siemens.com/entry/cc/en/

## HMI Setting:

| Parameters | Recommended | Options | Notes |
|---|---|---|---|
| **PLC type** | Siemens S7-1200 (Symbolic Addressing) (Ethernet) | | |
| **PLC I/F** | Ethernet | | |
| **Port no.** | 102 | | |
| **Rack** | 0 | | |
| **CPU slot** | 1 | | |

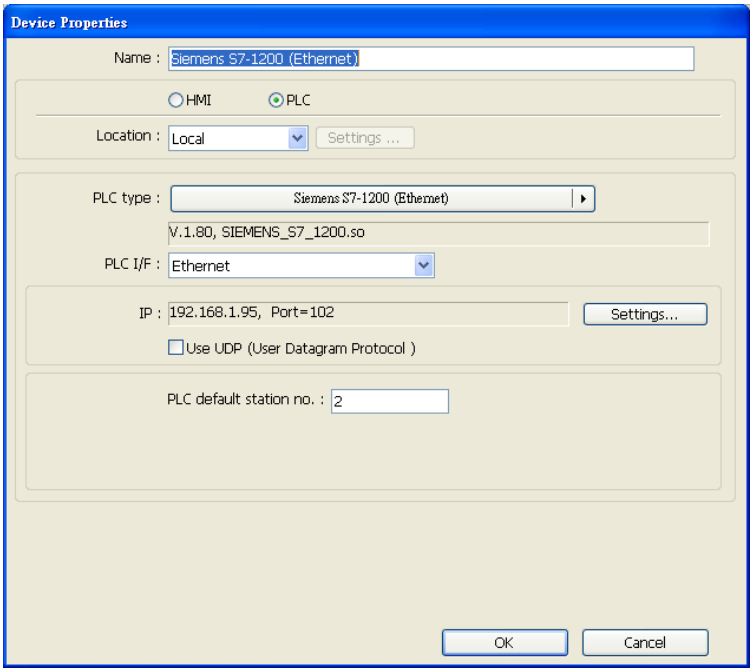
| | | | |
|---|---|---|---|
| **On-line simulator** | Yes | **Multi-HMI connect** | TIA Settings *Note |

*Note:
According to Connection resource / HMI Communication settings

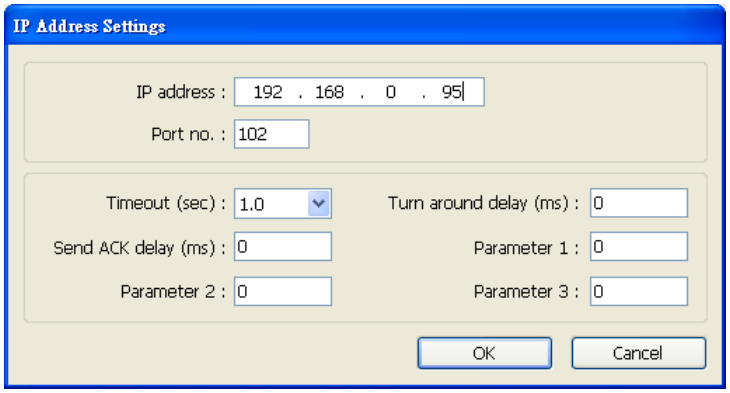


# PLC Setting:

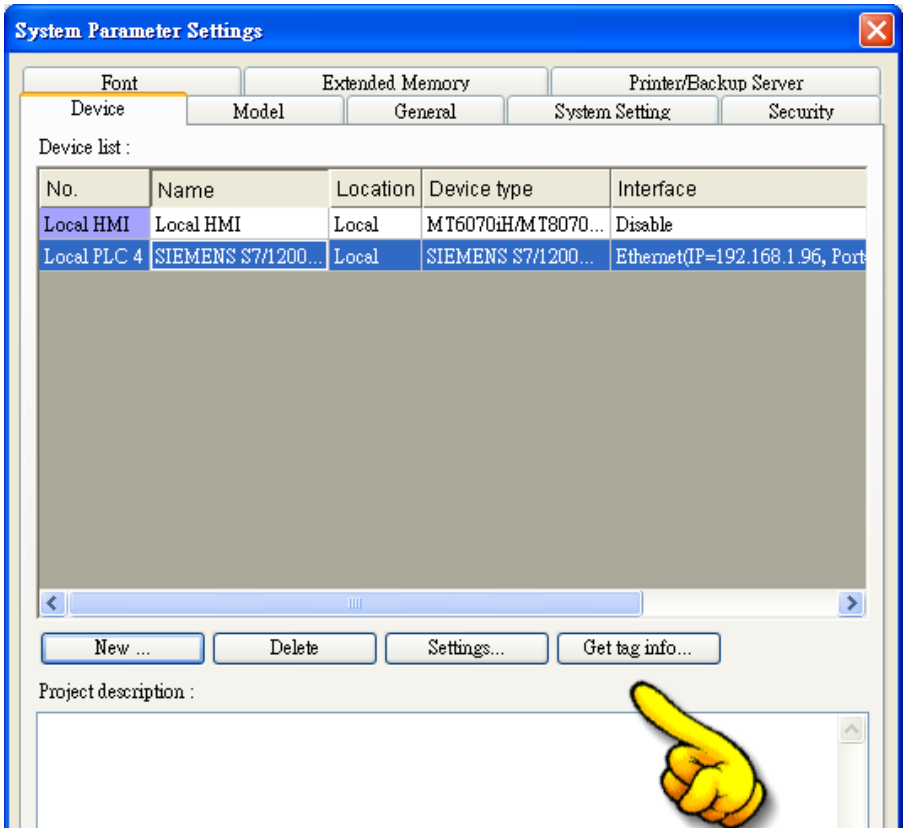
1. In S7-1200 program software create PLC program and tag and then download to PLC.
2. Select Go offline, EasyBuilder will connect to PLC and get tag data. In PLC type select “SIEMENS S7-1200 (Ethernet)”.



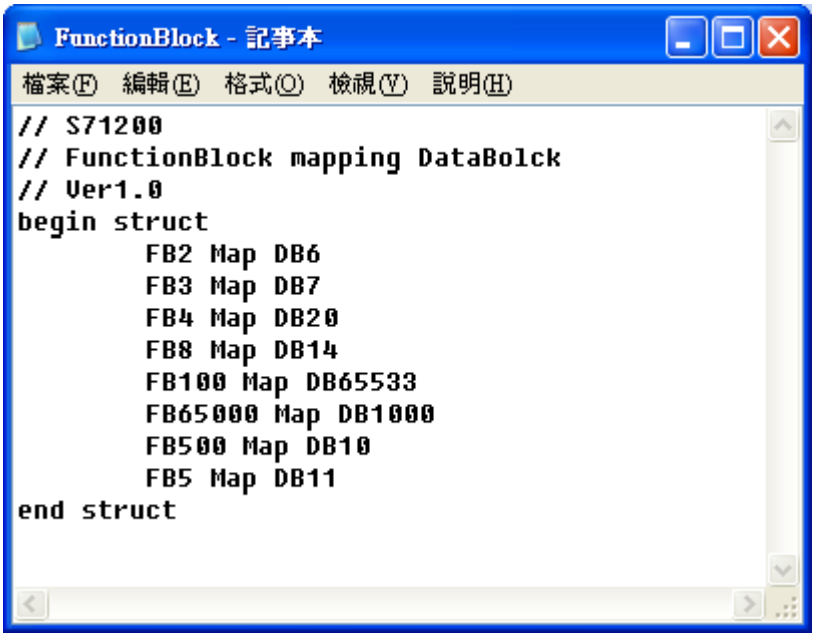

3. Click “Settings…”, input PLC IP address.

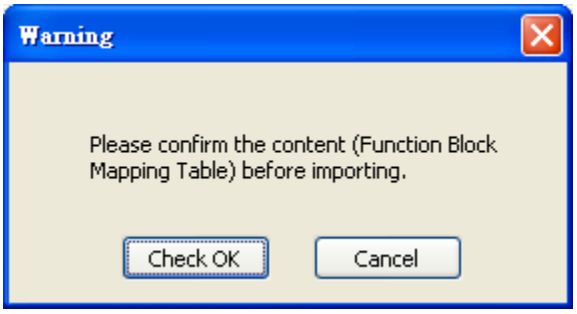


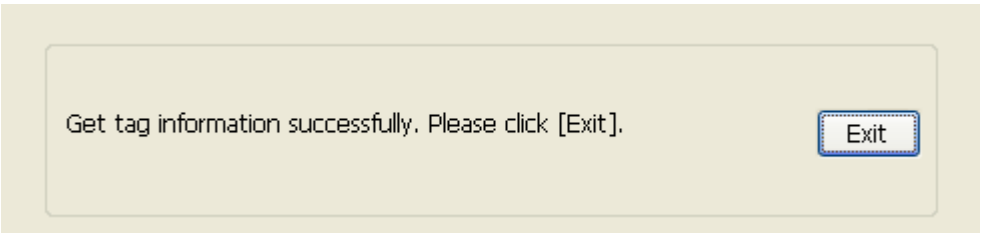
4. Check the PLC that is not connected to any PC. Click “Get tag info…”.
5. Supported by firmware V3.X and previous versions. For V4.0 or later, please see **How to Connect With S7-1200 Firmware V4.0**)



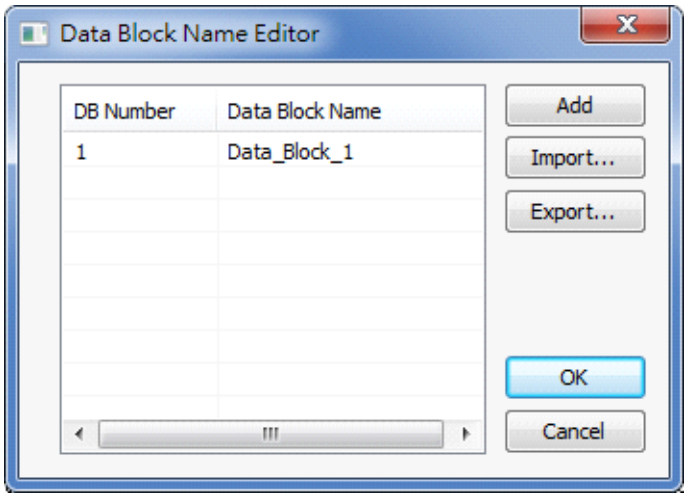
6. If the software used is a version later than TIA Portal V11，SP2, a dialog of FunctionBlock directory will be shown, users have to define the mapping from FB to DB in this directory then click “Check OK”. The tag information will be gained and a successful message is shown.

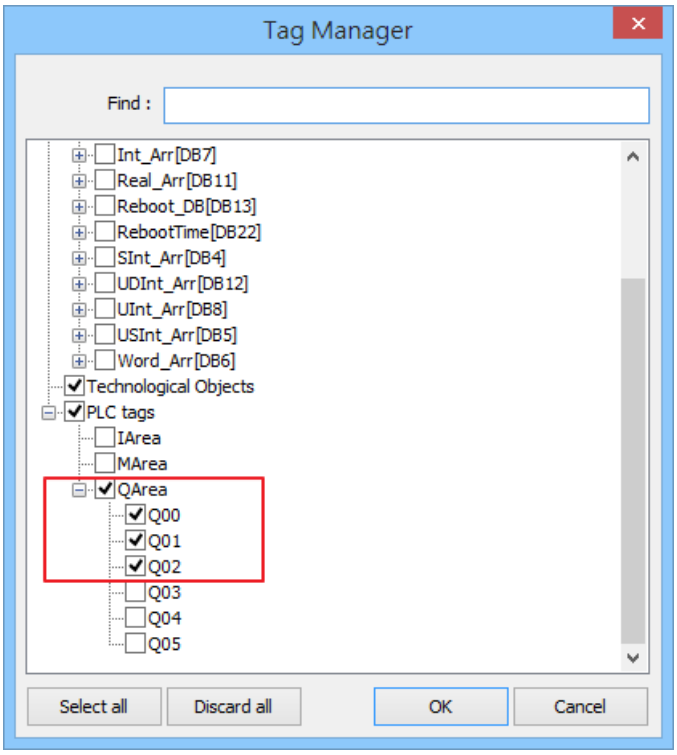



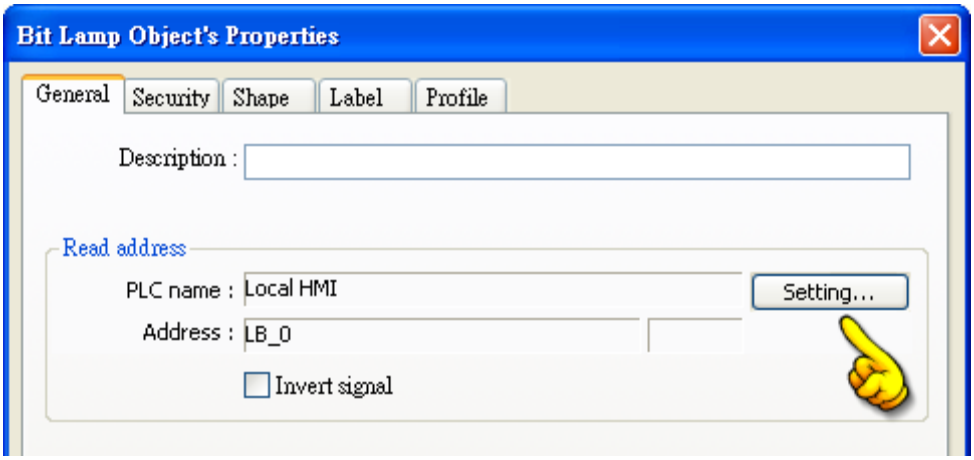
7. When opening an existing project and get the tag information again, if the PLC software used is TIA Portal V12 and later versions, the DB name must be entered again in order to compile the project.



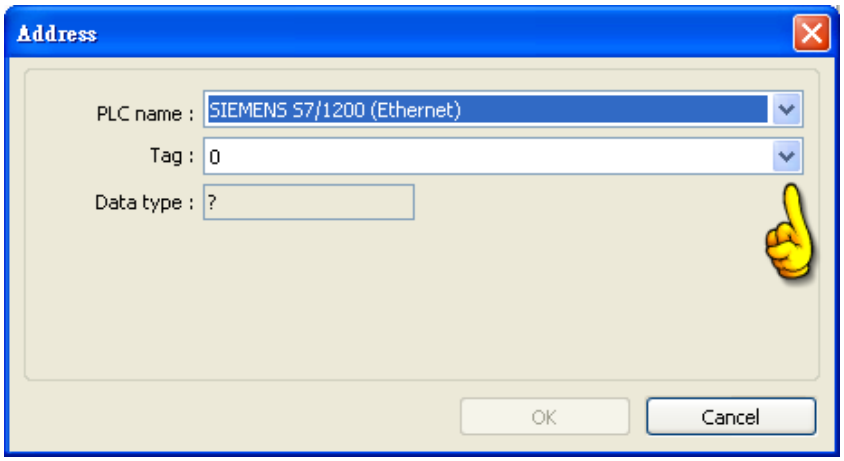

8. Added Tag Manager that allows selecting the Siemens S7-1200 PLC tags to be imported.



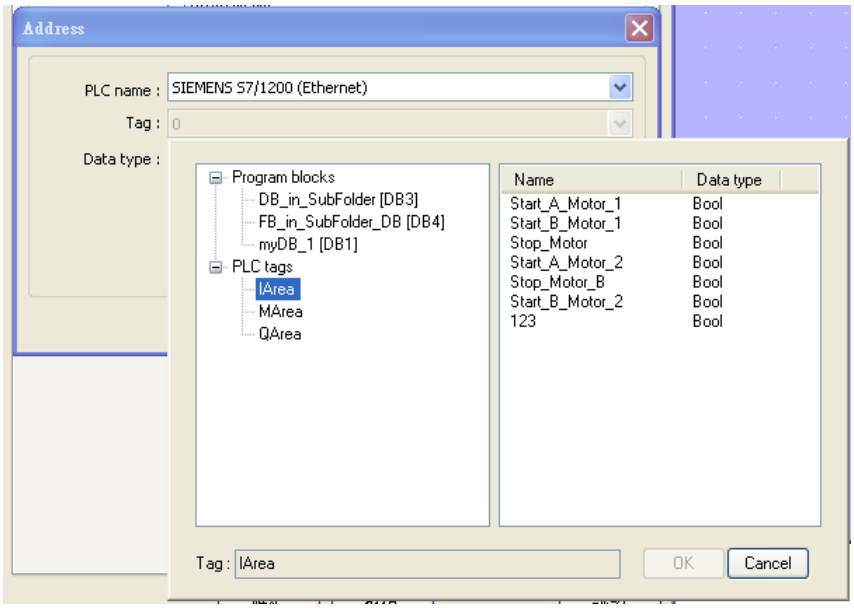
9. Create an object and click read address “Setting…”




10. In PLC name select S7-1200 then click Tag.



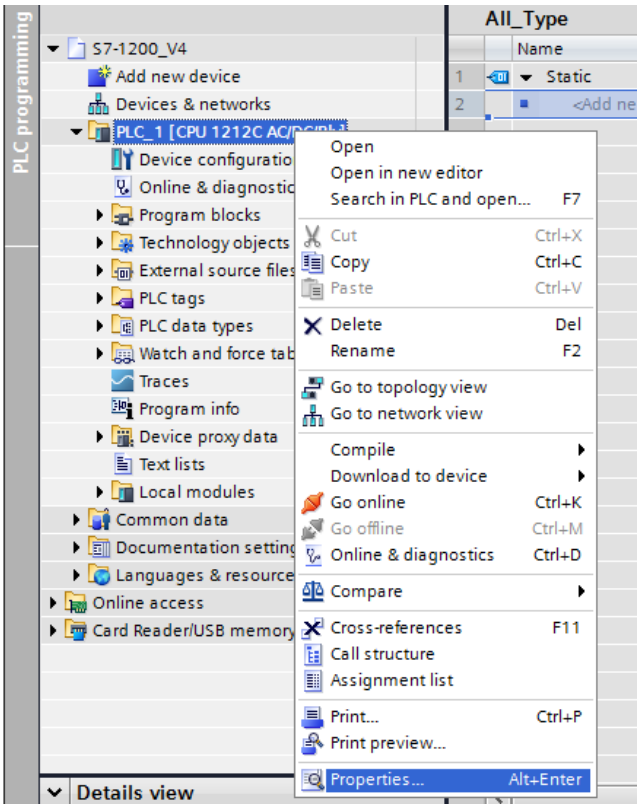

11. Select PLC tag.



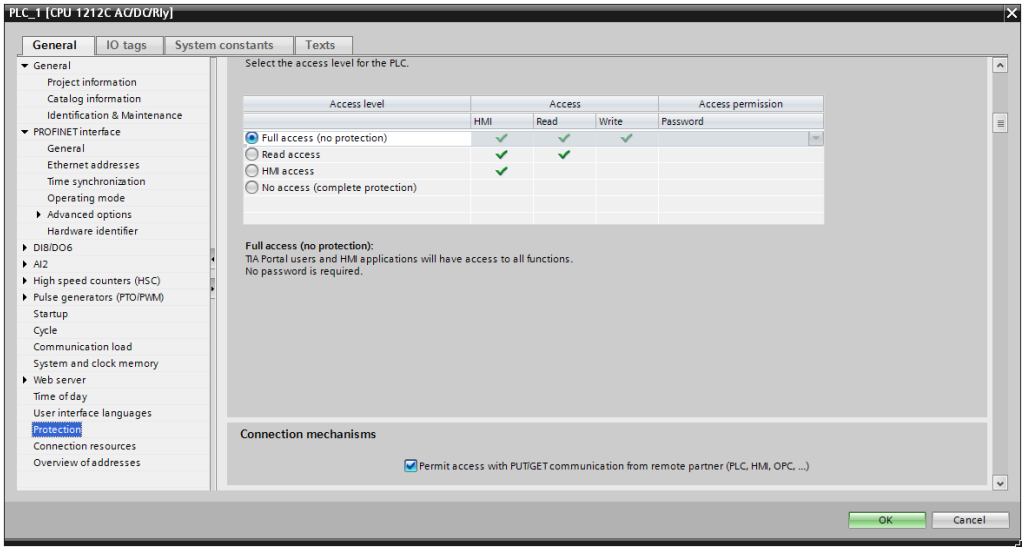
# How to Connect With S7-1200 Firmware V4.0

There are certain restrictions in S7-1200 firmware V4.0, therefore, to avoid communication errors, please follow the steps to set up.( EasyBuilder8000 does not support Siemens S7-1200 firmware V4.0 and later versions).

Right click on the PLC program, and then click **[Properties]**.



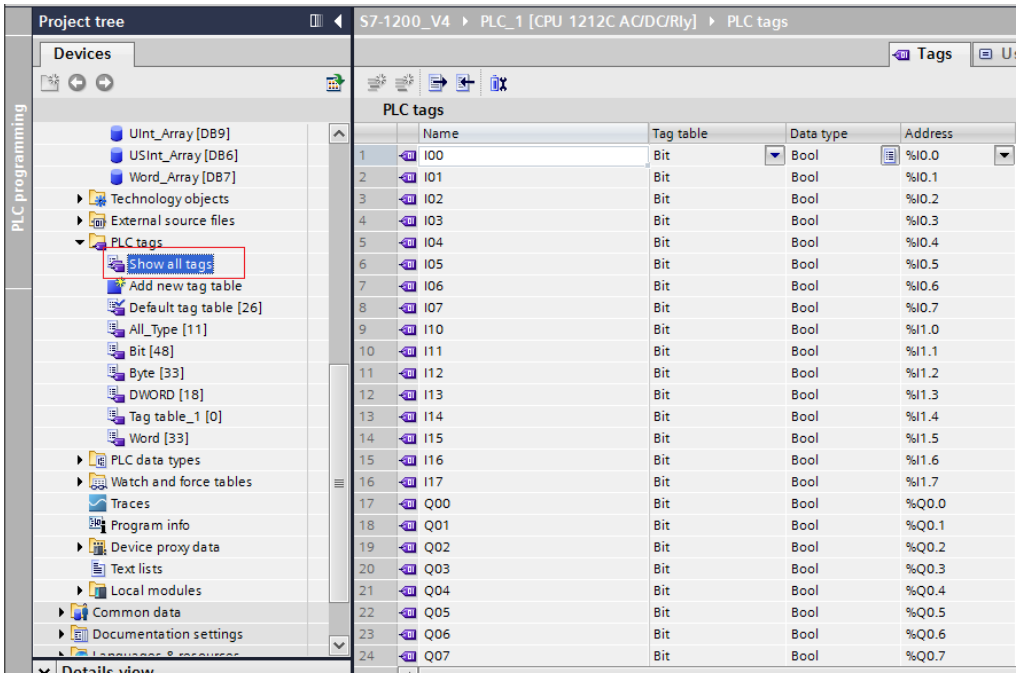

Select **[Protection]**, and then select **[Permit access with PUT/GET communication from remote partner (PLC,HMI,OPC,…]**.



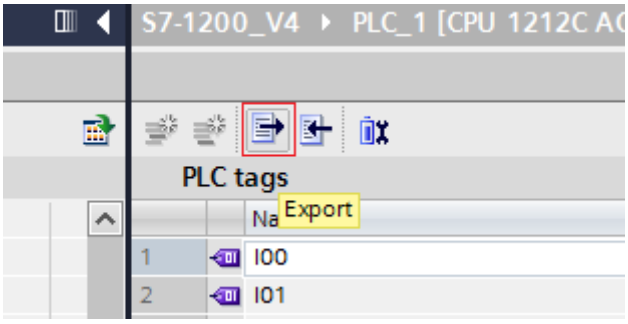

The following part introduces how to export S7-1200 PLC Tags and Program Blocks.

## Exporting PLC Tags (I,Q,M tags)

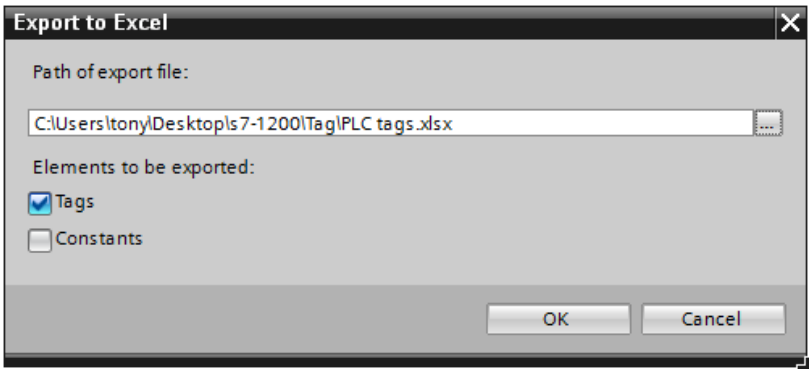
1. Under **[PLC tags]** select **[Show all tags]**.




2. Click **[Export]** to export the tags.

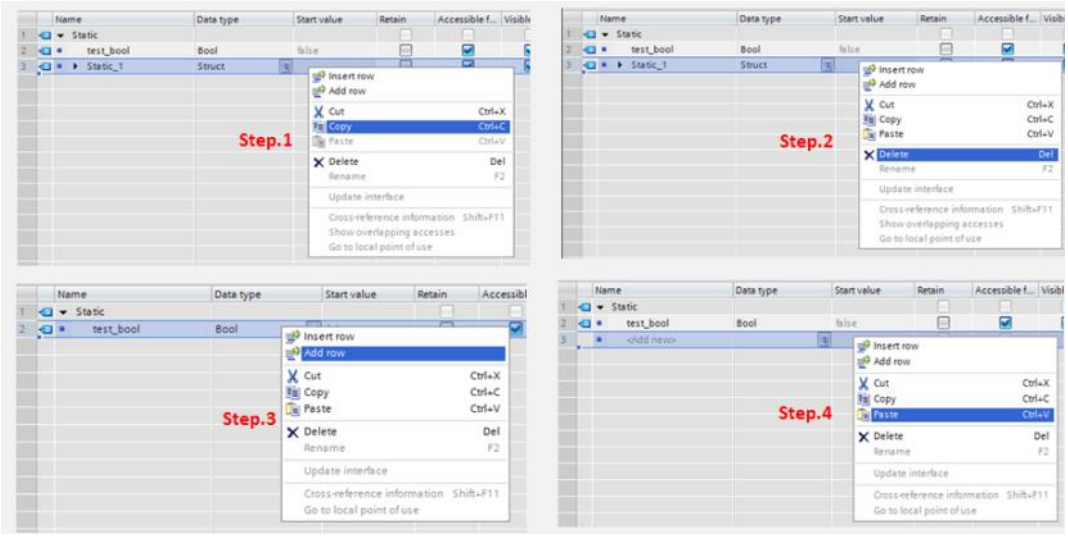



3. Browse for the directory to save the exported file and then click **[OK]**.

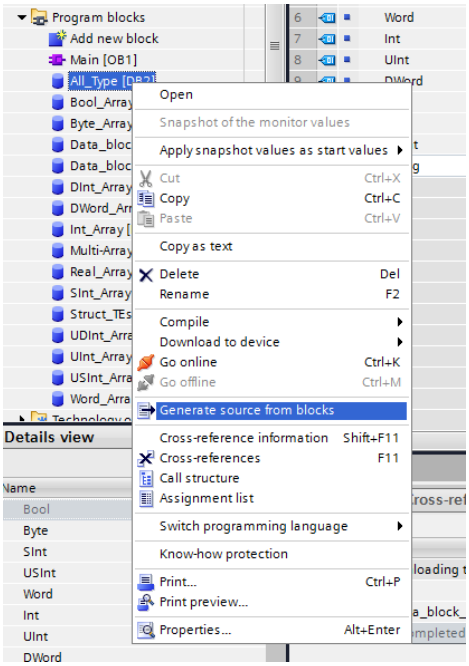


## Exporting Program Blocks(DB)

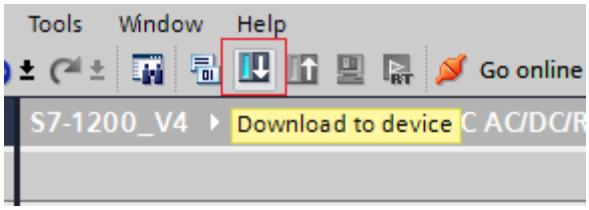
1. When the database contains Struct data type, please note the following restrictions.
   Please at least add one data member that doesn't belong to Struct data type into DB, otherwise, the data cannot be imported to EasyBuilder.
   Multidimensional Arrays and Multilayer Structs are not supported.
   After building DB, please do the following actions for Struct address:
   (1) Copy the complete Struct data.
   (2) Delete data.
   (3) Add a new row.
   (4) Paste data.




2. Right click on DB, click **[Generate source from blocks]**, and then enter the file name to save.

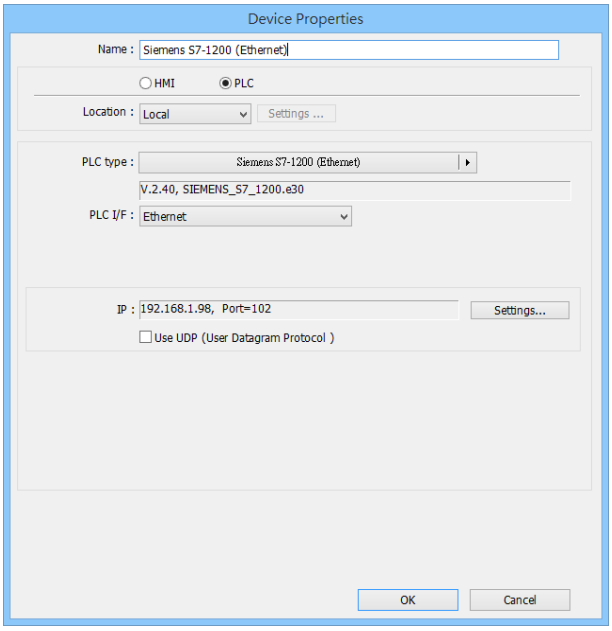


After building and importing PLC Tags and Program Blocks, click **[Download to device]**.

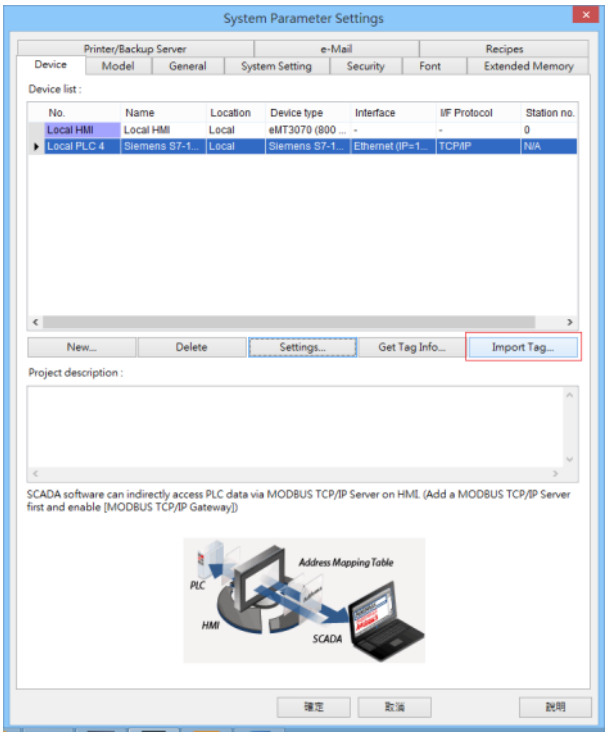



### Importing PLC Tags and Program Blocks(DB)

1. Launch EasyBuilder and set the IP address.

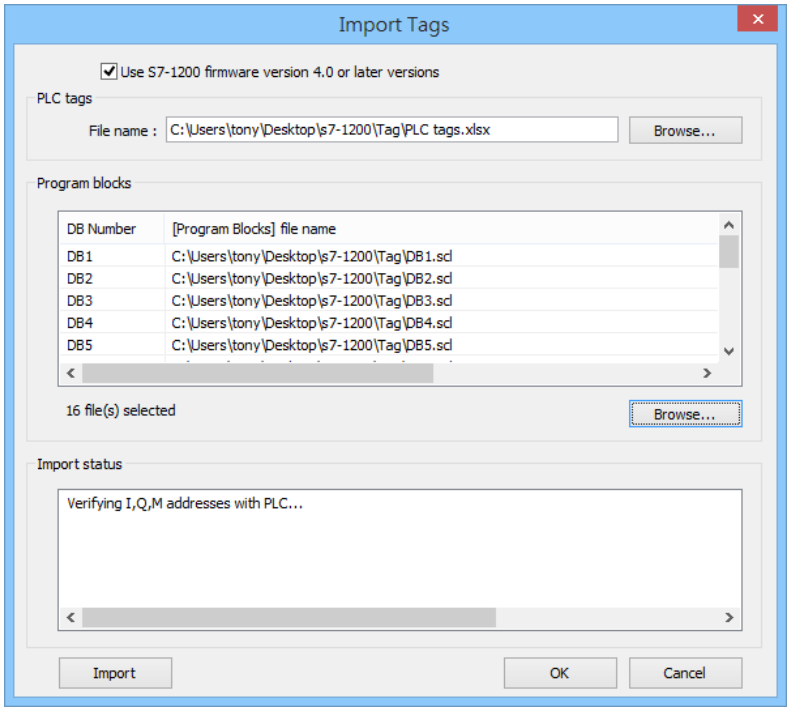



2. Click **[Import Tag…]**.

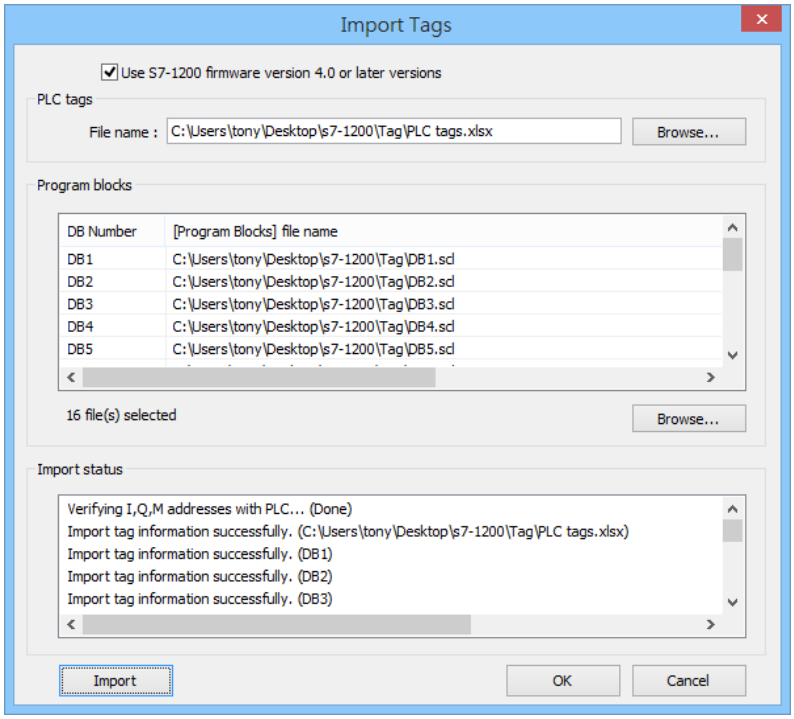


3. Select the PLC Tags and Program Blocks to be imported. Please remember to change DB number, and select **[Use S7-1200 firmware version 4.0 or later versions]**. Click **[Import]** to import the files. The I, Q, and M addresses will be checked, if an error occurs, the communication will fail. If this happens, please check your communication environment, and try to import again.

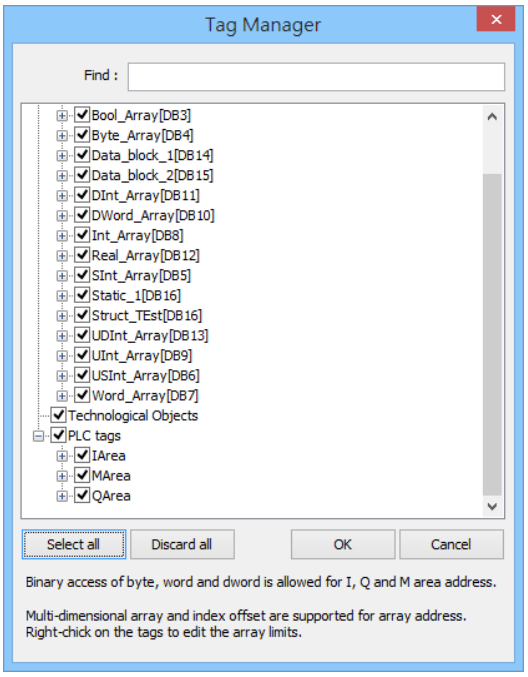
   *** At least one db file must be imported. If only plc tags cannot be imported successfully.**



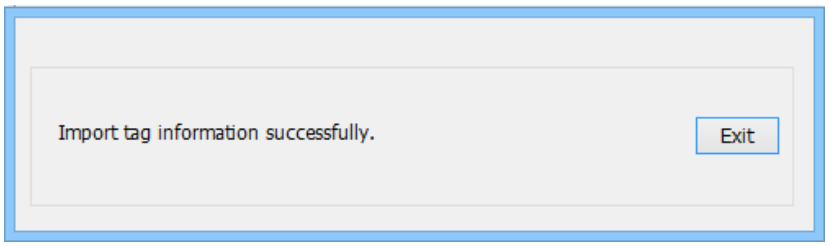

4. The “Import status” field will display the result, click **[OK]**.



5. Select the tags to be imported and then click **[OK]**.




6. The following message is displayed when the import has succeed.



## Support Device Type:

| 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 | 64-bit |
| ULInt | 64-bit Unsigned | 64-bit |
| LWord | 64-bit Unsigned | 64-bit |
| Double | 64-bit Float | 64-bit |
| Char | 16-bit BCD, Hex, Binary, Unsigned | USInt |
| CREF | | Struct |
| Date | 16-bit BCD, Hex, Binary, Unsigned | UInt |
| DTL | | Read only |
| ErrorStruct | | |
| IEC_COUNTER | | |
| IEC_DCOUNTER | | |
| IEC_SCOUNTER | | |
| IEC_TIMER | | |
| IEC_UCOUNTER | | |
| IEC_UDCOUNTER | | |
| IEC_USCOUNTER | | |
| NREF | | |

| Data type | EasyBuilder data format | Memo |
|---|---|---|
| Time | 32-bit BCD, Hex, Binary, Unsigned | DWord |
| Time_Of_Day | 32-bit BCD, Hex, Binary, Unsigned | DWord |
| Array | | Bool, Byte, SINT, USInt, Word, Int, UInt, DWord, Dint, Real, UDInt |
| Struct | | Bool, Byte, SINT, USInt, Word, Int, UInt, DWord, Dint, Real, UDInt |

**Note1:** EBPro V6.03.02 or later supports 64 bits data type **(cMT Series only),** but please note that the address limit range is 48 bits in maximum.

**Note2:** Importing data types other than those in the above table may result in failure to communicate.

## Wiring Diagram:

**Ethernet cable:**