

Siemens S7-300 MPI

Supported Series: Siemens S7-300 series PLC

Website: <http://www.siemens.com/entry/cc/en/>

HMI Setting:

Parameters	Recommend	Options	Notes
PLC type	SIEMENS S7-300 MPI		
PLC I/F	RS-485 2W		
Baud rate	187.5K	19200,187.5K	
Data bits	8		
Parity	Even		
Stop bits	1		
PLC sta. no.	2	2 ~ 31	

Online simulator	NO	Extend address mode	Yes
Broadcast command	NO		

Device Address:

Bit/Word	Device type	Format	Range	Memo
B	I	DDDDo	0 ~ 40957	Input (I)
B	Q	DDDDo	0 ~ 40957	Output (O)
B	M	DDDDo	0 ~ 40957	Bit Memory
B	DBnBit	FFFFFFDDDDo	0 ~ 655359997	Data Register Bit
B	DBxBit	FFFFFFDDDDo	0 ~ 10700655327	
B	DB1Bit ~ DB99Bit	DDDDDo	0 ~ 655327	Data Register Bit
W	IW	DDDD	0 ~ 4095	Input (I)
W	QW	DDDD	0 ~ 4095	Output (O)
Byte	MB	DDDD	0 ~ 4095	Bit Memory Byte
W	MW	DDDD	0 ~ 4095	Bit Memory
DW	MD	DDDD	0 ~ 4094	
Byte	DBBn	FFFFFFDDDD	0 ~ 655359999	Data Register
Byte	DBBx	FFFFFFDDDD	0 ~ 1070065532	
W	DBn	FFFFFFDDDD	0 ~ 655359999	Data Register (must be even)

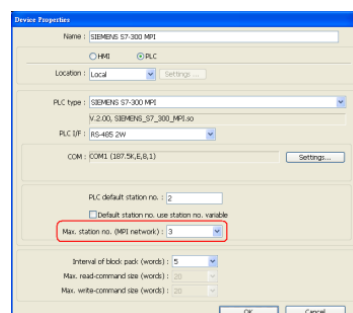
Bit/Word	Device type	Format	Range	Memo
W	DBx	FFFFFFDDDD	0 ~ 1070065532	
DW	DBDn	FFFFFFDDDD	0 ~ 655359999	Data Register Double Word (must be even)
DW	DBDx	FFFFFFDDDD	0 ~ 1070065532	
W	DBn_String	FFFFFFDDDD	0 ~ 655359999	
W	DBx_String	FFFFFFDDDD	0 ~ 1070065532	
W	DBn_String1	FFFFFFDDDD	0 ~ 655359999	
W	DBx_String1	FFFFFFDDDD	0 ~ 1070065532	
DW	DBDn_String	FFFFFFDDDD	0 ~ 655359999	
DW	DBDx_String	FFFFFFDDDD	0 ~ 1070065532	
W	DB1 ~ DB99	DDDD	0 ~ 65532	Data Register (must be even)

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

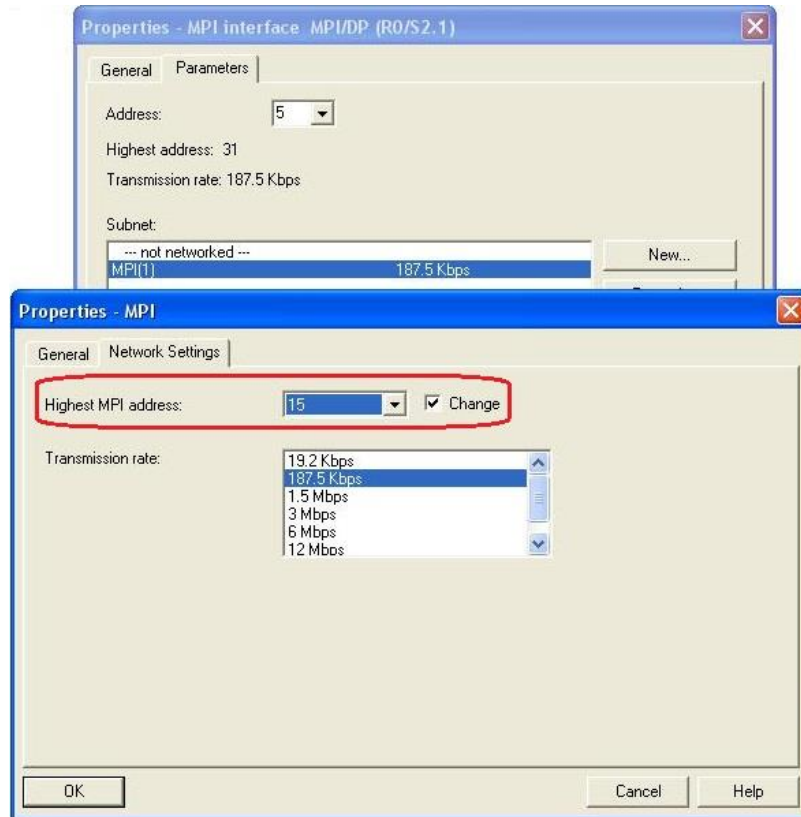
Multi-HMIs-Multi-PLCs Communication Setting:



For SIEMENS S7-300 MPI driver in Multi-HMIs-Multi-PLCs communication, [Max. station no. (MPI network)] parameter must be correctly set. This setting is relevant to the station no. of the devices, as shown, two HMI (station no. 0, 1) and two PLC (station no. 2, 3) are in MPI network, Max. Station No. should be set to 3.



For the effectiveness of communication, users may set PLC device in STEP 7 as shown below. In Properties MPI / Network Settings, set Highest MPI address to the number closest to the actual device station number.



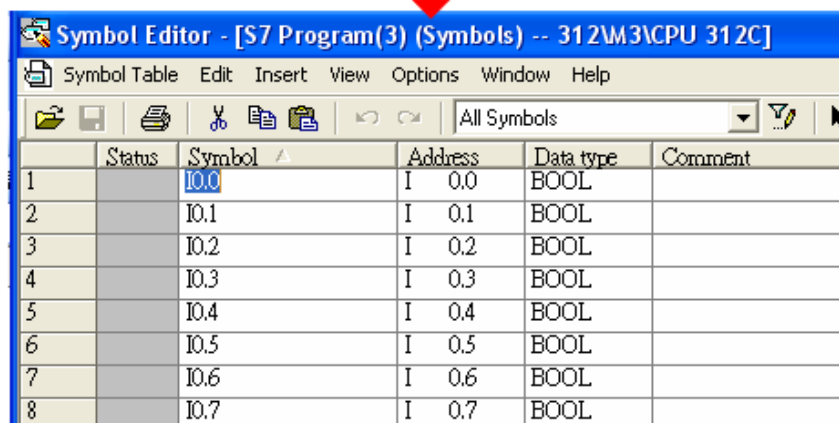
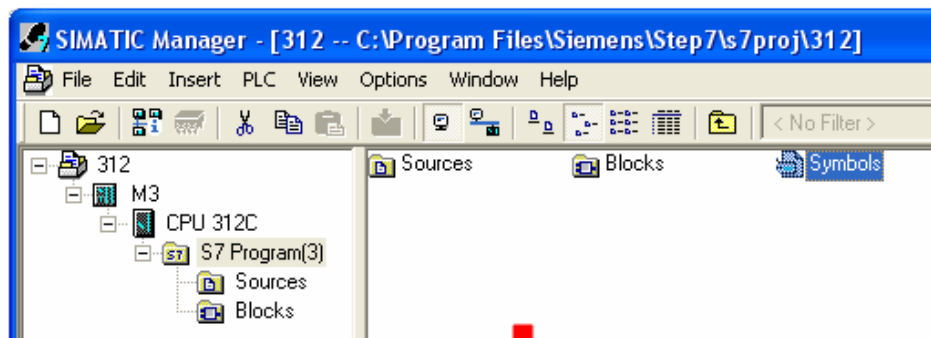
- HMI sta. no. can not be the same as PLC sta. no.
- Highly recommended that the device station numbers start from 0 sequentially and correctly set [Max. station no. (MPI network)].
- Available for EasyBuilder V4.50 and later.
- X Series does not support multiple-HMI-to-multiple-PLC communication, and supports only 1-HMI-to-1-PLC communication.

How to Import Tag:

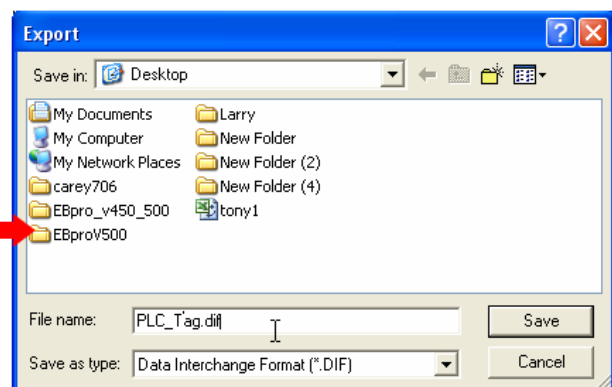
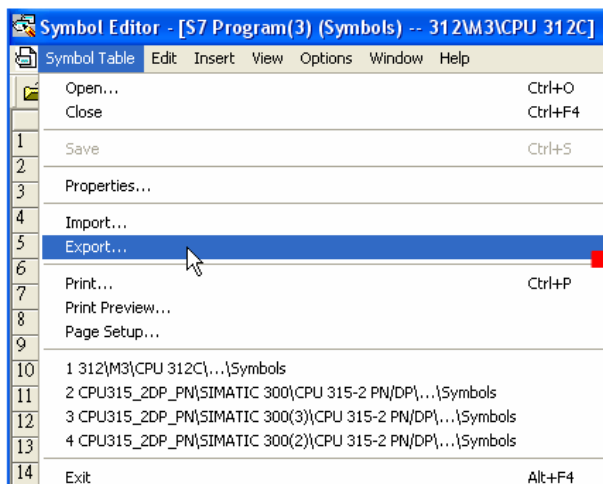
SIEMENS STEP 7 program allows building files of user-defined tag (*.dif file and *.AWL file), and import these files in EasyBuilder8000/EasyBuilderPro -> System Parameter Settings. The following describes how to build and import these two types of files.

1. Building *.dif File

- a. In "Symbols" create user-defined tag.

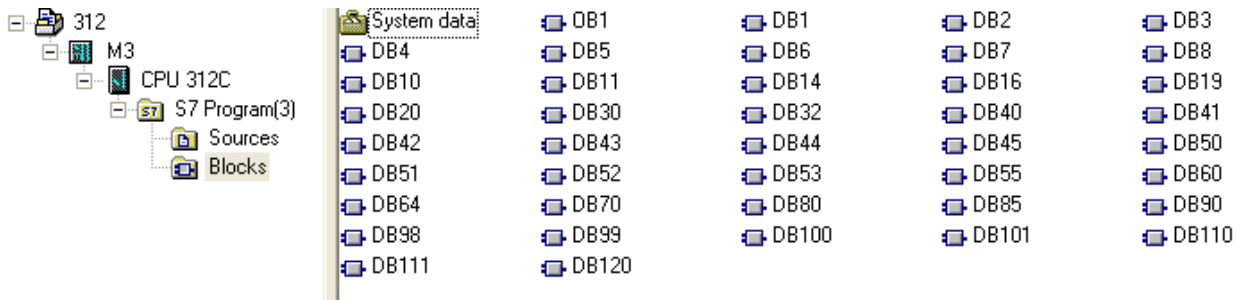


- b. Click **Export** to export the edited file and click **Save**.

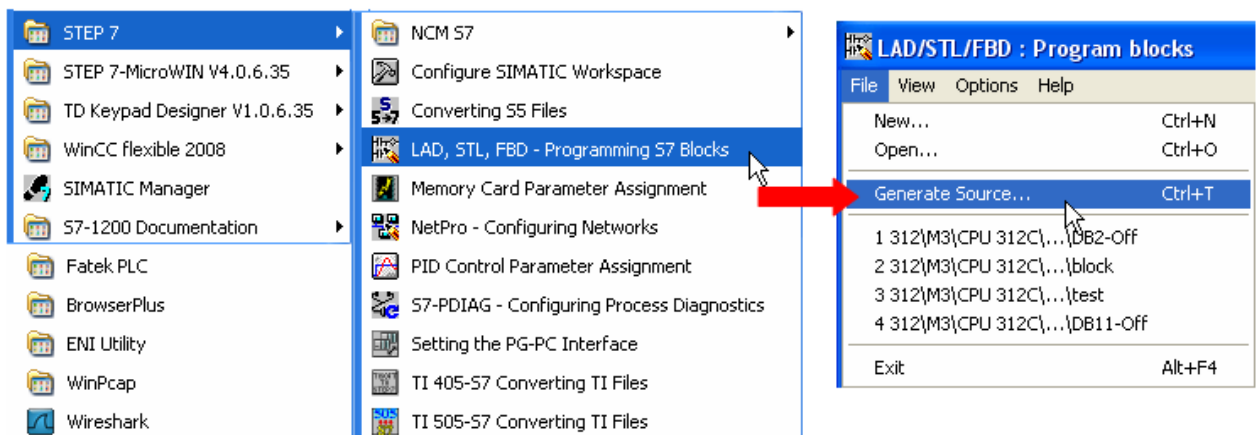


2. Building *.AWF File

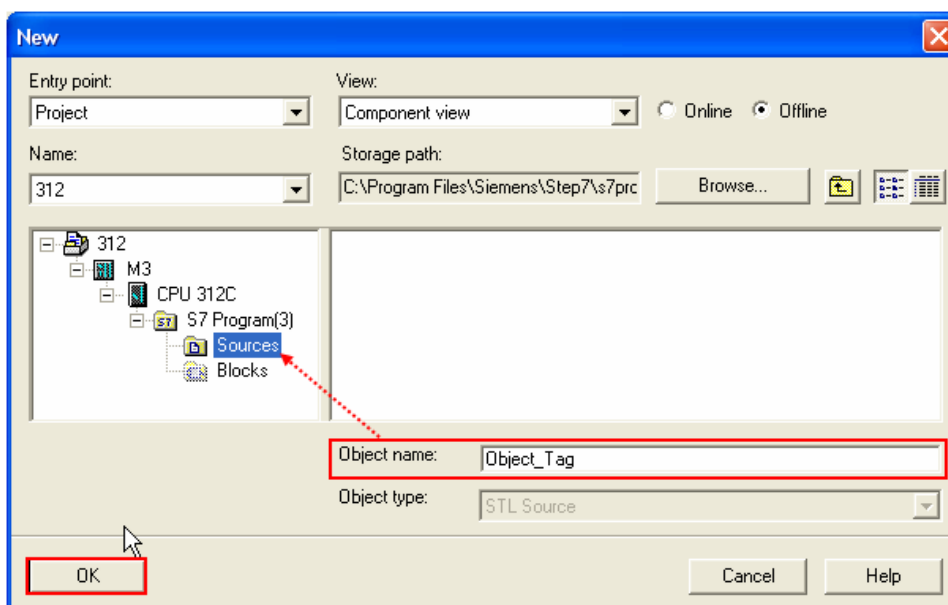
a. In **Blocks** create items as shown below:



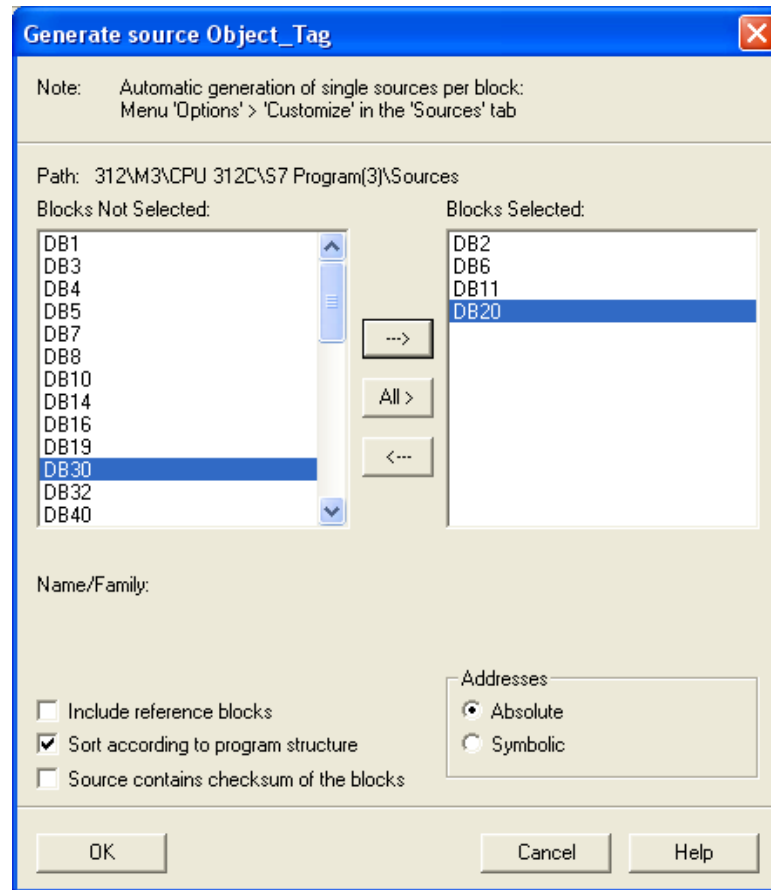
b. Open **LAD/STL, FBD – Programming S7 Blocks**, click **File -> Generate Source**.



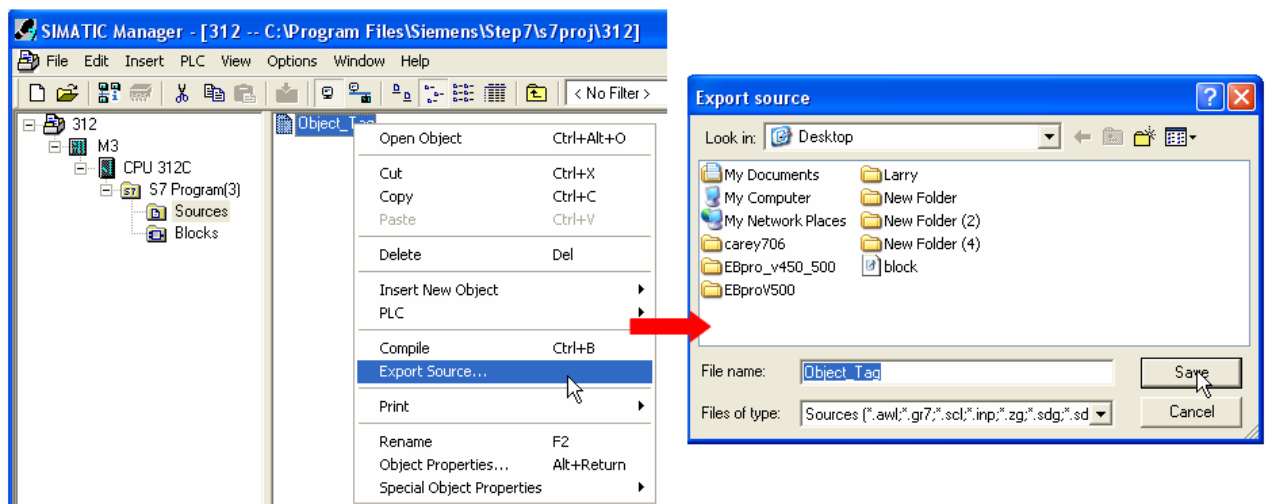
c. Select **Sources** as storage path, specify the file name then click **OK**.



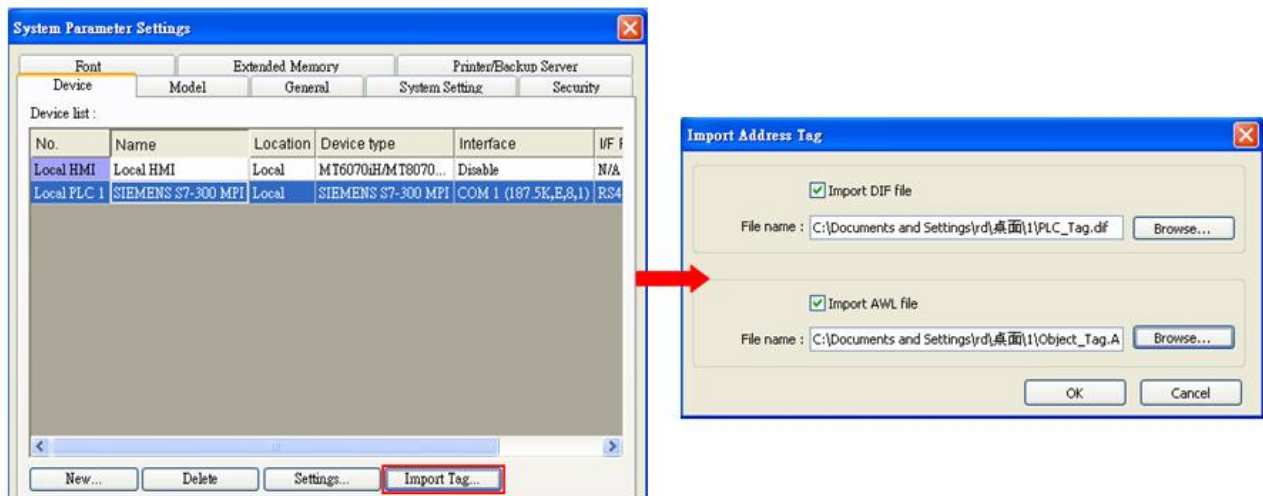
- d. Select the objects to be exported then click **OK**.



- e. Under **Sources** there will be names of the saved files, select **Export Source** to build *.AWL file.



The generated *.dif and *.AWL files can be imported in EasyBuilder8000/EasyBuilderPro **System Parameter Settings**, by clicking **Import Tag**.

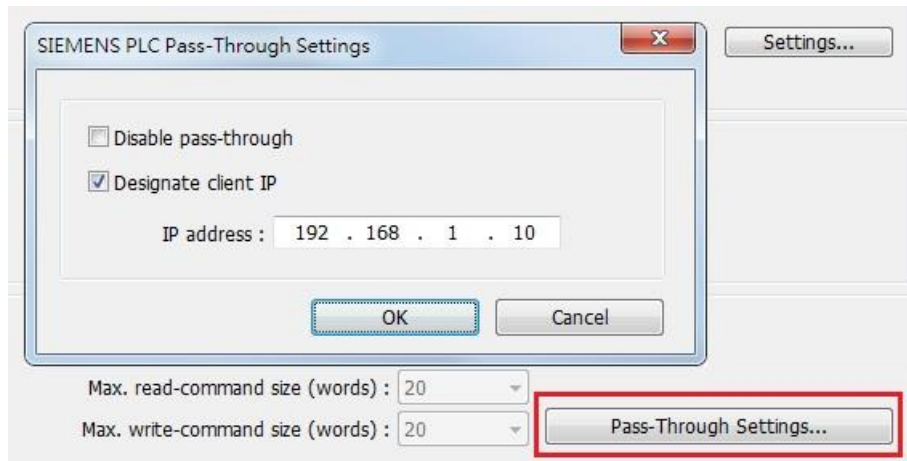


Tag information successfully imported.



Pass-Through Settings:

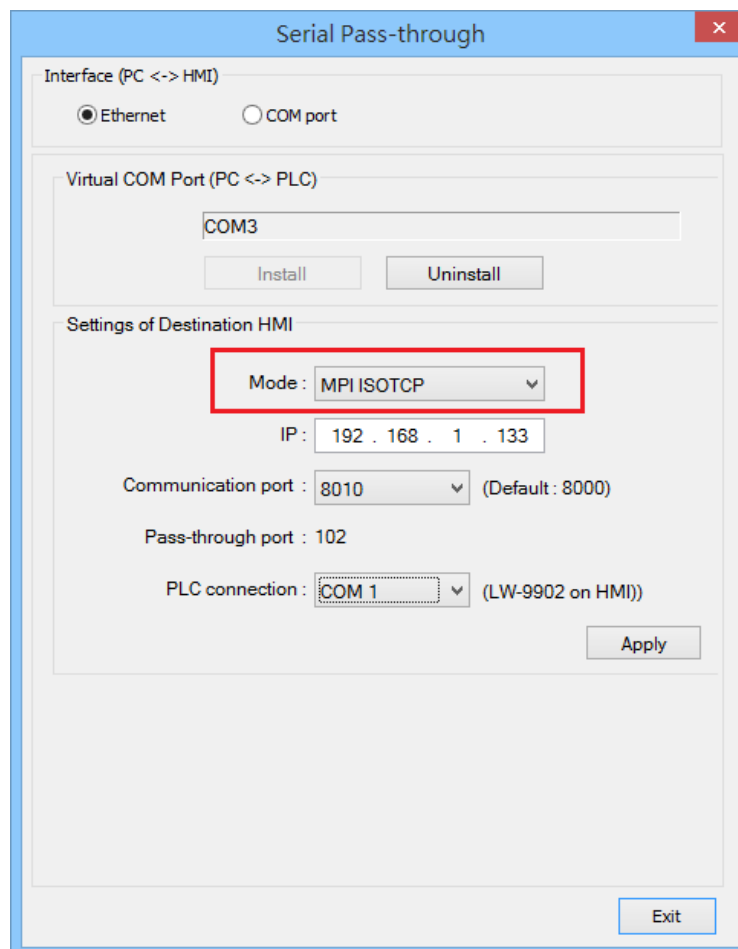
[Designate client IP]: In Pass-through mode designate the client IP address to connect HMI. The “client” usually refers to Siemens Step 7 application.



[Utility Manager Settings]:

Utility manager -> Serial Pass-through

Mode: MPI ISOTCP



The following lists the system registers relevant to Siemens S7-200 PPI and Siemens S7-300 MPI Pass-through feature.

- [LW-10850: disable/enable (0 : disable, 1 : normal, 2 : IP limited) (siemens pass-through)]
- [LW-10851: destination COM port (siemens pass-through)]: Generally refers to the COM port connected with PLC.
- [LW-10852: destination PLC station no. (siemens pass-through)]
- [LW-10853: communication protocol (0 : invalid, 1 : PPI, 2 : MPI) (siemens pass-through)]
- [LW-10854 to LW-10857: IP of connecting client (siemens pass-through)]: Displays current client IP address connected with HMI.
- [LW-10858 to LW-10861: IP of designated client (siemens pass-through)]: If LW-10850 is set to 1, the system registers can be used to designate the client IP connected with HMI.
- [LW-10862: connection status (0 : ready, 1 : client connecting) (siemens pass-through)]
- [LW-10863: execution status (0 : normal, 1 : error) (siemens pass-through)]
- [LW-10864: the last error (siemens pass-through)]

The following table lists the error codes, the description of each code, and the possible reason.

Error Code	Description	Possible Reason
0	Successfully executed	
1	Prohibit client from connecting HMI	HMI is already running pass-through and won't accept any request from other client.
2	Prohibit client from connecting HMI	When LW-10850 is set to 1, the client IP for connecting HMI is different from the IP specified in LW-10858 ~ LW-10861.
3	Invalid communication protocol	Invalid setting in LW-10853.
4	Invalid PLC station number	The PLC station number specified in LW-10852 does not exist.
5	Delayed communication	PLC connection failure.
6	Busy communication	PLC does not accept pass-through request, please confirm PLC settings.
7	Invalid pass-through request	Environment setup failure.

Wiring Diagram:

S7-200 PPI , S7-300 MPI :RS485 2W

Diagram 1

cMT Series

cMT3151

eMT Series

eMT3070/ eMT3105 / eMT3120 / eMT3150

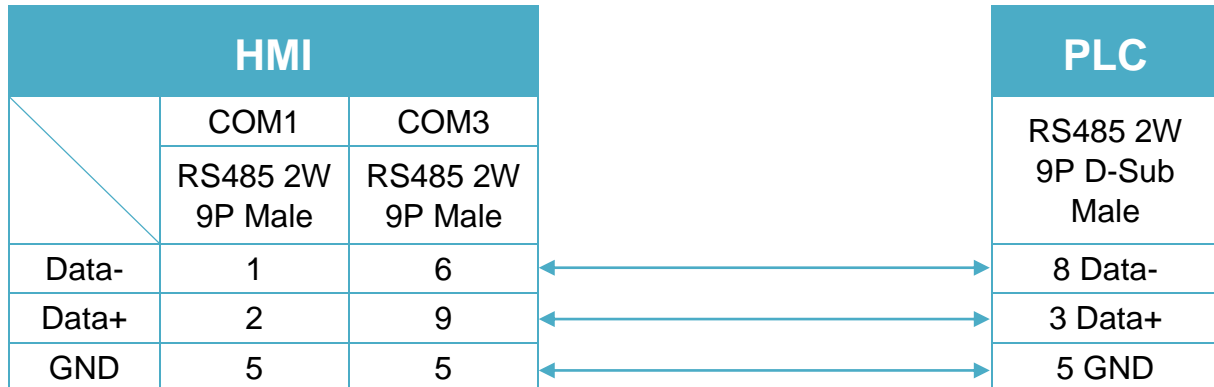


Diagram 2

cMT Series

cMT-SVR / cMT-G01 / cMT-G02 / cMT-HDM / cMT-FHD

mTV

mTV

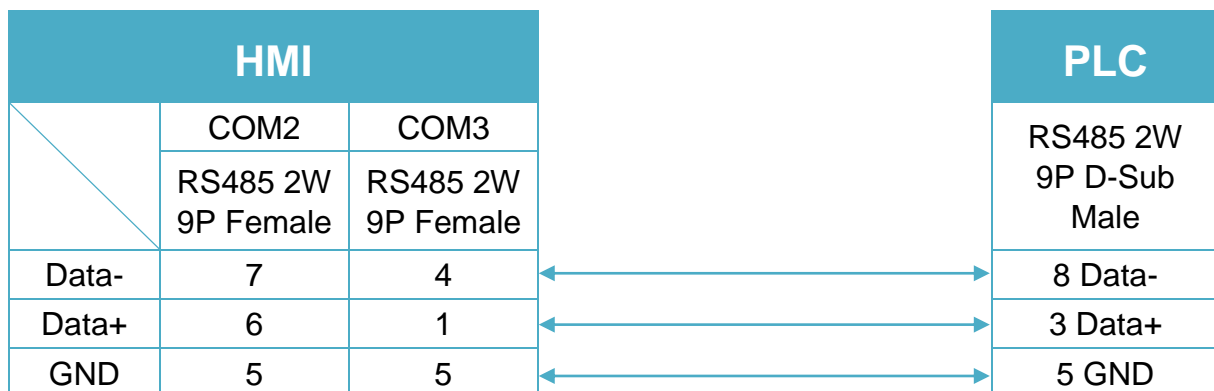


Diagram 3

MT-iE *MT8070iE / MT6070iE / MT8100iE / MT8121iE / MT8150iE*

MT-XE *MT8121XE / MT8150XE*

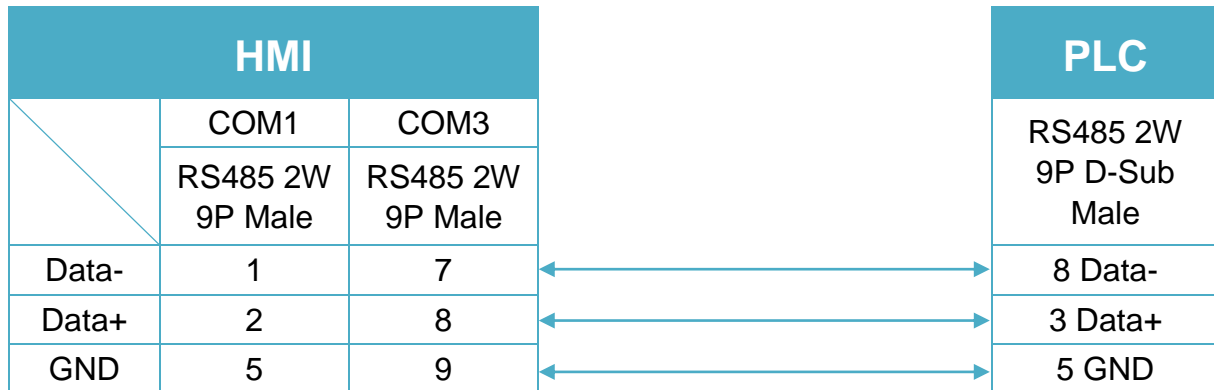


Diagram 4

cMT Series *cMT3071 / cMT3072 / cMT3090 / cMT3103*

MT-iE *MT8071iE / MT6071iE / MT8072iE / MT6072iE / MT8073iE /
MT8101iE / MT8102iE / MT8103iE*

MT-XE *MT8090XE / MT8092XE*

MT-iP *MT6103iP / MT8102iP*

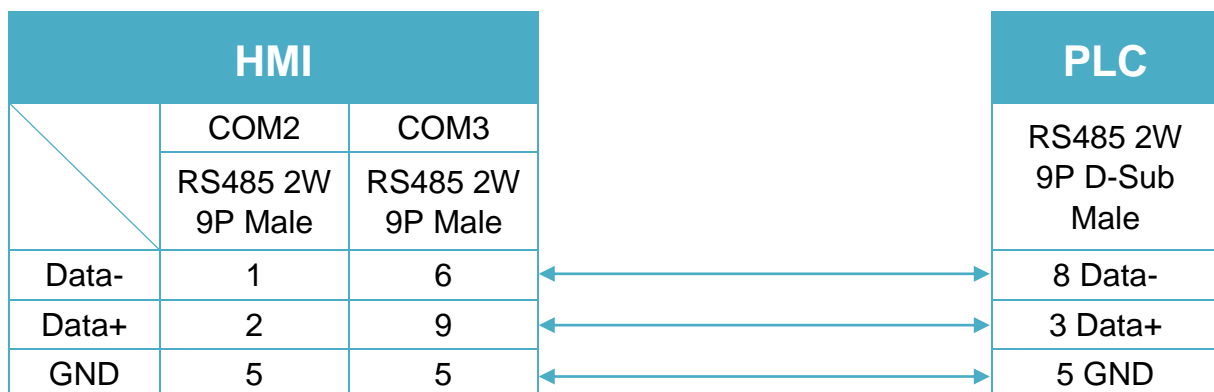


Diagram 5

MT-iE *MT8050iE / MT8053iE*

MT-iP *MT6051iP / MT8051iP*

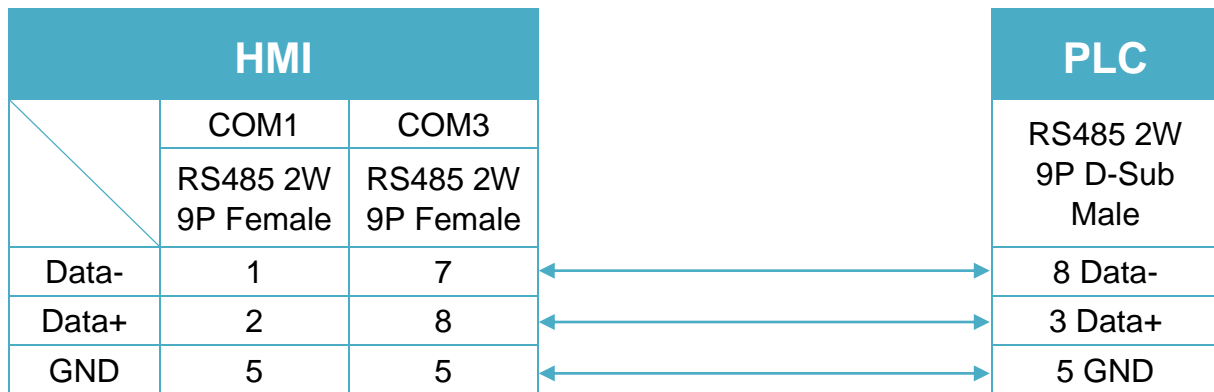


Diagram 6

MT-iP *MT6071iP / MT8071iP*

