Appendix 4 Pass-Through Function

The pass-through function is allowed the PC application to connect with PLC via HMI, the HMI is acting as a converter at this moment.

Pass-through provides two modes: Ethernet and COM port. To click Pass-through on Project Manager will display the application.

Simulation On-line Simulation Off-line Simulation Pass-through Pass-through	
Help Exit	
Pass-through	×
Ethernet O COM port Virtual COM Port (PC <-> PLC) Please install weintek virtual serial port driver	

A. Ethernet mode

[How to install virtual serial port driver]

Before using Ethernet mode, please install virtual serial port driver, as follow:

If the virtual COM port display [Please install weintek virtual serial port driver], please click [Install], as follow

Pass-through		×
⊙ Ethernet	○ COM port	
Virtual COM Por	t (PC <-> PLC)	_
<	Please install weintek virtual serial port driver	
PLC Connection	Port (HMI <-> PLC)	
HMHP:	· · · ·	
Install	Uninstall Apply]

If install processing pop up a dialogue as follow, please click [Continue Anyway].

Hardwa	re Installation
	The software you are installing for this hardware: Weintek Virtual Serial Port has not passed Windows Logo testing to verify its compatibility with Windows XP. (<u>Tell me why this testing is important.</u>) Continuing your installation of this software may impair or destabilize the correct operation of your system either immediately or in the future. Microsoft strongly recommends that you stop this installation now and contact the hardware vendor for software that has passed Windows Logo testing.
	Continue Anyway STOP Installation

After processing is completed, the virtual COM port display as follow.

Virtual COM Port (PC <-> PLC)		
	СОМЗ	

[How to using Ethernet mode]

After installing virtual serial port driver, just need four steps to using Ethernet mode of Pass-through.

Step1

To setting HMI IP which be connected to PLC. For example, HMI IP as 192.168.1.206

Step2

To assign serial port properties which HMI connect to PLC. For example, use COM2 RS232 to connect PLC.

Step3

Click [Apply], and the communication parameters will be update.



Step4

On the PC application, the serial port must be same as virtual one. For example, using of Mitsubishi application. If the virtual serial port is COM 7, please on [PC side I/F Serial setting] / [COM port] to select COM 7, as follow

Transfer	Setup	X
PC side I/F	Serial CC IE Cont NET(II) CC-Link Ethernet PLC USE NET-10(H) board board board board board COM CONT 7 Transmission speed 117-9Khps	AF SSC board net
PLC side I/F	PLC CCIE Cont MNET(II) CC-Link Ethermet C24 module module module module	G4 Bus module
Other station	PC SIDE I/P SETIAL SETTING (message (message	FXCPU Connection channel list PLC direct coupled setting Connection test
Network route	C24 CC IE Con NET/10(H)	C type
Co-existence network route	C24 CC IE Cont NET(II) CC-Link Ethernet NET/10(H) Accessing host station	System image TEL (FXCPU) OK Close

After completed all of described setting, when user running the PLC application on PC, the HMI will auto be switch to pass-through mode (the communication between HMI and PLC will be suspend). And it will resume communication if user closes the application, as follow



B. COM port mode



Source COM Port: This port is connected between HMI and PC.

Destination COM Port: This port is connected between HMI and PLC.

When using COM port mode of pass-through, the source and destination com port have to set correctly.

Setting of Pass-through

There are two ways for user to enable COM port of pass-through function.

- (1) Use Project Manager to start pass-through
- (2) LW-9901 and LW9902 can be set to enable pass-through.

LW-9901: pass-through source COM port (1~3: COM1~COM3)

LW-9902: pass-through destination COM port (1~3: COM1~COM3)

Note: If user wants to resume HMI and PLC communication, please select "Stop Pass-through" to disable this function.

Start Pass-through in project manager.

Click Pass-through button on the Project Manager for setting the communication parameters of pass-through:

Pass-through				
◯ Ethernet	⊙ COM port			
HMLIP :	192.168.1.37		~	
	Get HMI Communica	tion Parameters		
F	IMI work mode : Unknov	vn		
Source COM Po	rt (PC -> HMI)			
	СОМ 1 💌		RS232	~
Baud rate :	9600 🖌	Data bits :	8 Bits	~
Parity :	Even 💌	Stop bits :	1 Bit	~
⊂ Destination CON	4 Port (HMI -> PLC)			
	СОМ 2 💌		RS232	~
Baud rate :	9600 🖌	Data bits :	8 Bits	~
Parity :	Even 🔽	Stop bits :	1 Bit	~
Start Pass-thro	ough Stop Pass-ti	hrough		
			Exit	

[HMI IP]

When using Pass-through in Project Manager, assign the IP address of HMI.

[Get HMI Communication Parameters]

To read the parameter of source and destination COM port, that parameter comes from reserved addresses, the detail of addresses as following.

LW9901 (Source COM port)	1 : COM 1	2 : COM 2	3 : COM 3
LW9902 (Destination COM port)	1 : COM 1	2 : COM 2	3 : COM 3

Source COM port and Destination COM port

COM 1 mode setting

LW9550 (PLC I/F)	0 : RS232	1 : RS485/2W	V 2 : RS48	5/4W
LW9551 (baud rate)	0:4800	1 : 9600	2:19200	3:38400
	4 : 57600	5 : 115200		
LW9552 (data bits)	7 : 7 bits	8 : 8 bits		
LW9553 (parity)	0 : none	1 : even	2 : odd	
LW9554 (stop bits)	1 : 1 bit	2 : 2 bits		

COM 2 mode setting

LW9556 (baud rate)	0:4800	1:9600	2:19200	3:38400
	4 : 57600	5 : 115200		
LW9557 (data bits)	7 : 7 bits	8 : 8 bits		
LW9558 (parity)	0 : none	1 : even	2 : odd	
LW9559 (stop bits)	1 : 1 bit	2 : 2 bits		

COM 3 mode setting

LW9560 (PLC I/F)	0 : RS232	1 : RS485/2W	1	
LW9561 (baud rate)	0:4800	1:9600	2:19200	3:38400
	4 : 57600	5 : 115200		
LW9562 (data bits)	7 : 7 bits	8 : 8 bits		
LW9563 (parity)	0 : none	1 : even	2 : odd	
LW9564 (stop bits)	1 : 1 bit	2 : 2 bits		

After clicking [Get HMI Communication Parameters], the HMI current states and communication parameters will be update.

[HMI work mode]

Unknown	Display current work mode of HMI. Before reading the setting of
	HMI, the work mode is displayed "Unknown".
Normal	After reading the HMI states, the work mode is displayed
	"Normal" that means, the HMI do not accept data from source
	com port.
Pass-through	HMI is working as pass-through states; at this time, the PC
	application can control PLC via source com port.

There are three work modes in the pass-through function,

[Source COM Port] < [Destination COM Port]

Display the data from source and destination COM port. The data will be used when pass-through is enabled. The "Baud rate", "Data bits", "Parity", and "Stop bits" of [Source COM Port] and [Destination COM Port] have to be set the same. [Source COM Port] is connect to PC, so RS232 has to be set; [Destination COM Port] is connect to PLC, so the COM port setting depends on the PLC.

Here an example of SIEMENS S7-200, the illustration below shows the setting when connect to SIEMENS S7/200. The HMI COM 1 RS232 is connect to PC, and COM 3 RS485 2W is connect to PLC, and the parameters of PLC is "9600, E, 8, 1". Before start pass-through, user must settings the correct parameter on project and download to HMI.

Device Properties
Name : SIEMENS S7/200
◯ HMI
Location : Local Settings
PLC type : SIEMENS S7/200
V.1.90, SIEMENS_S7_200.so
PLC I/F : RS-485 2W 🛛 PLC default station no. : 2
COM : COM3 (9600,E,8,1)
Use broadcast command
Interval of block pack (words) : 5
Max. read-command size (words) : 32 💊
Max. write-command size (words) : 32 🗸 🗸
OK Cancel

After downloaded to HMI, open the same project and change the PLC I/F and COM port to

COM 1 RS232 (for this is source Com port and connected to PC). As follow

Device Properties
Name : SIEMENS \$7/200
Local Settings
PLC type : SIEMENS S7/200
V.1.90, SIEMENS_S7_200.so
PLC MF : RS-232 PLC default station no. : 2
COM : COM1 (9600,E,8,1) Settings
Use broadcast command
Interval of block pack (words) : 5
Max. read-command size (words) : 32 🛛 🗸
Max. write-command size (words) : 32
OK Cancel

After that, open pass-through and assign HMI IP address; for example 192.168.1.37

HMI IP :	192.168.1.37		~	
	Get HMI Communic	ation Parameters		
	HMI work mode : Norm	al		
ource COM Po	ort (PC -> HMI)			
	СОМ 1 💌		RS232	~
Baud rate :	9600 💌	Data bits :	8 Bits	~
Parity :	Even 💌	Stop bits :	1 Bit	~
estination CO	M Port (HMI -> PLC)			
	СОМ 3 💌		RS485 2W	~
David units i	9600	Data bits :	8 Bits	~
baud rate :		Otra Liter	1.89	~
David vata v	COM 3 💙 9600 💙	Data bits :	RS485 2W 8 Bits	

And press [Get HMI Communication Parameters], as follow

User can press **[Start Pass-through]** (the HMI work mode is switched to "Pass-through") and to run On-line Simulation. Now PC application can control PLC via HMI, and HMI is acting as a converter; meanwhile the HMI don't have function until stop pass-through.

Using system reserved address to enable Pass-through function

Another way to enable Pass-through function is to change LW9901 (source COM port) and LW9902 (destination COM port) directly. When the values of LW9901 and LW9902 match conditions as below, HMI will start Pass-through automatically:

- a. The value in LW9901 and LW9902 has to be 1 or 2 or 3 (1: COM 1 / 2: COM 2 / 3: COM 3).
- b. The COM port values can't be the same as in LW9901 and LW9902.

Note: If user wants to stop Pass-through, just change the value except 1, 2, and 3. (example set to 0).

If user needs to change the communication parameter setting; just change the LW9901 and LW9902 and set ON to LB9030, LB9031 and LB9032, the HMI will be forced to accept new setting.

LB9030	Update COM1 communication parameters (set ON)
LB9031	Update COM2 communication parameters (set ON)
LB9032	Update COM3 communication parameters (set ON)