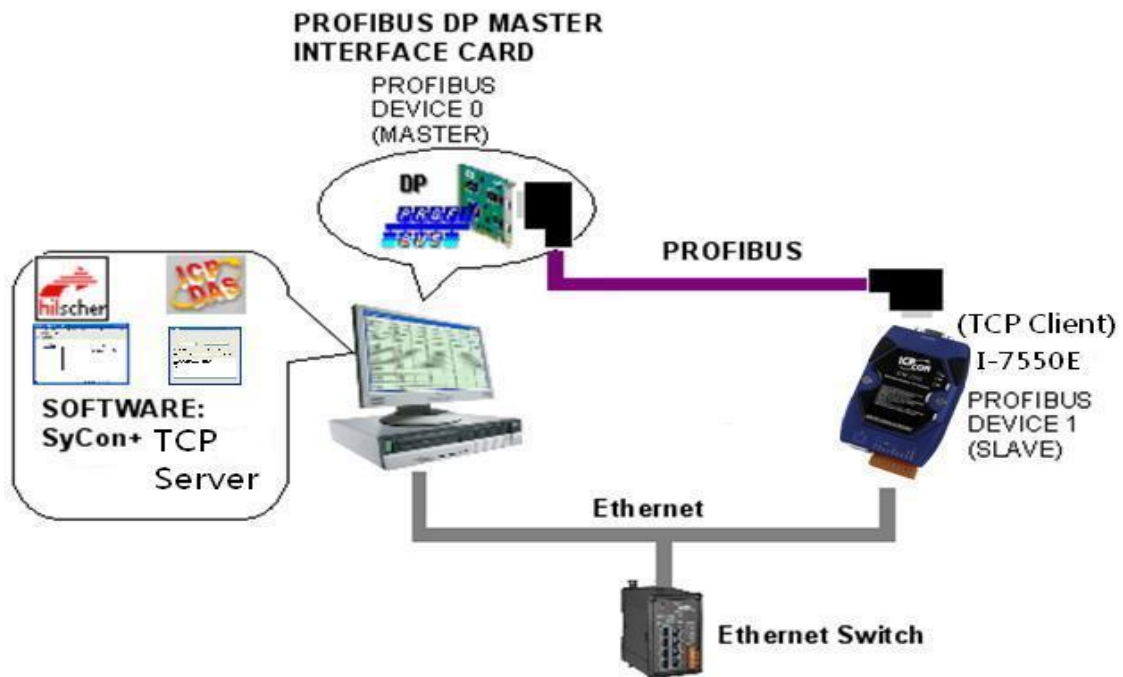# I-7550E Quick Start

1. Introduction

This manual introduces the I-7550E's basic setting and operating quickly, the user can refer to the user manual in the ICP DAS companion CD-ROM (Path: "CD:\profibus\converter\i-7550e\manual\i-7550e user manual.pdf").
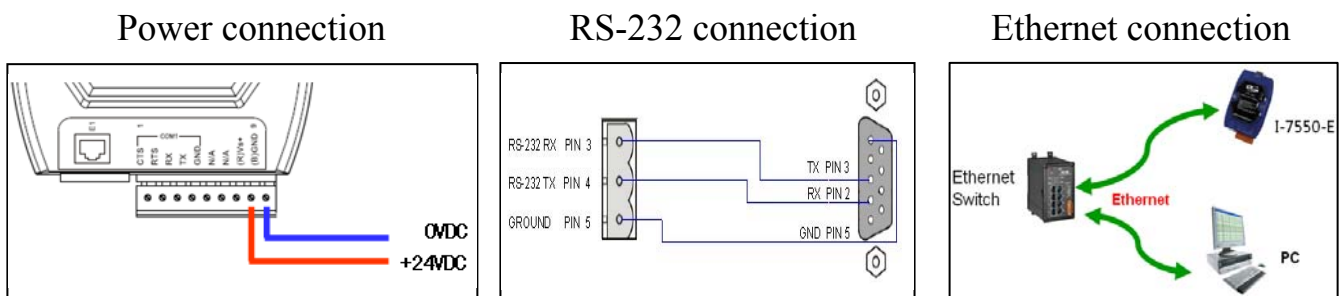
This manual helps users to understand about the I-7550E module and application. In the following examples the CIF50-PB PROFIBUS Master card from Hilscher is used. The configuration and communication is done by the program "SyCon" provided by Hilscher.

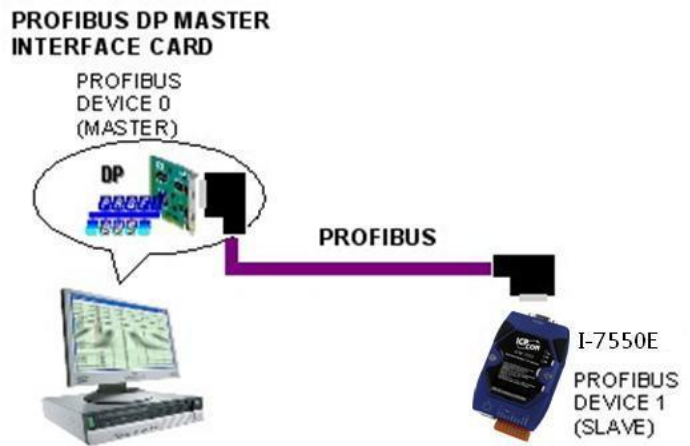Application example of PROFIBUS to Ethernet TCP server

In this example the I-7550E acts as a TCP Client device. When PROFIBUS Master station sends data, I-7550E module can transfer the data to specific TCP server. If I-7550E module receives the data from TCP server, it can send the data to the input data area of PROFIBUS master station.

2. Hardware configuration

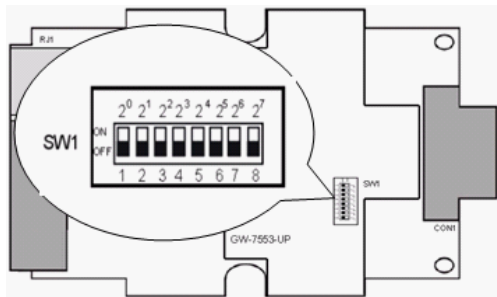| Power connection | RS-232 connection | Ethernet connection |

PROFIBUS connection

Here we recommend users to use the standard PROFIBUS cable and connector (DB9 male). It is only needed to use D-type connector via PROFIBUS cable to connect PROFIBUS Master station and I-7550E module. PROFIBUS Master station and I-7550E module belong to terminal equipments in this example, thus we need to enable the terminator resistor in the D-type connector.

Address setting

The I-7550E is a slave device of PROFIBUS DP protocol. The station address of I-7550E can be set by DIP switch. The DIP switch can be seen by open the cover, as shown in the below. The range of DIP switch is 0~126, here we set I-7550E module's DIP switch to 1.

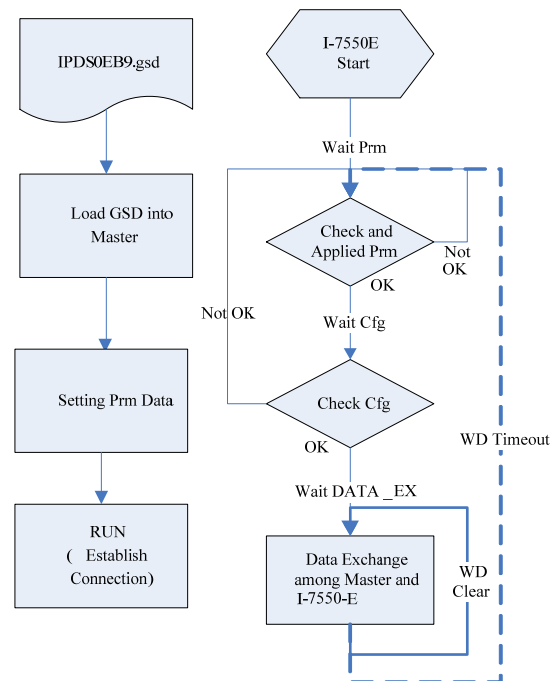| Station address	DIP switch (SW1)							
	1	2	3	4	5	6	7	8
1	1	0	0	0	0	0	0	0
10	0	1	0	1	0	0	0	0
31	1	1	1	1	1	0	0	0

Note: 1=>ON, 0=>OFF

LED status indicator

LED	Status	Description
PWR	flash	When PWR led and ERR led are flashing at the same time, which means there is system error in the I-7550E. Please contact us for solution.
	on	Power supply is ok. The firmware has loaded.
	off	Power supply has failed.
ERR	flash	When the I-7550E has diagnostic message, it will flash slowly (flash once about 220ms).
	on	The connection is error with PROFIBUS Master device or PROFIBUS system configuration is not correct.
	off	PROFIBUS system configuration is correct. It is normal operation.
RUN	on	Data exchange mode. It is normal operation.
	off	I-7550E module is not in data exchange mode.

3. Establish connection with I-7550E

Before establish the connection between DP-Master and I-7550E, users should obey the following steps first.

1. First, users must load the electronic device description file (GSD file) of the I-7550E into the DP-Master.
2. And then set the parameters and configurations.
3. Finally change your DP-master from offline state to operate state. The I-7550E will be initialized. If there is no error occurs, I-7550E proceeds into data exchange state. At the meantime, if there is any error occurs, I-7550E will return to wait for parameterization.

4. Software configuration

GSD file

Please copy the GSD file (IPDS0EB9.gsd) and the bitmap file (i_7550E. bmp, ICP7550E.bmp) from the CD of the I-7550E module into the Profibus configuration tool.
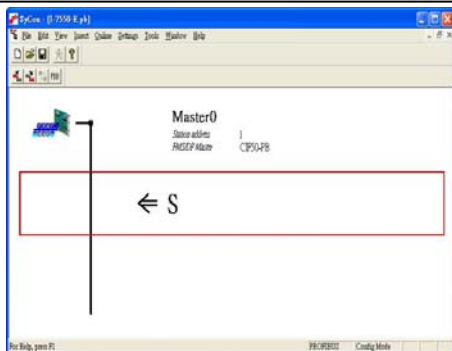
File->**CopyGSD**

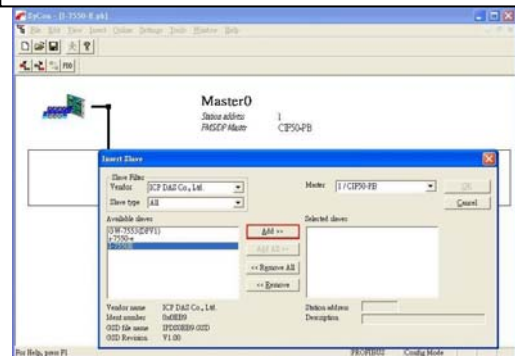(Directory: --> CD:\profibus\converter\i-7550e\gsd\)

➢ **the example of how to load GSD file**

Here, we use the hilscher CIF50-PB PROFIBUS communication interface to show how to load I-7550E's GSD file step by step.
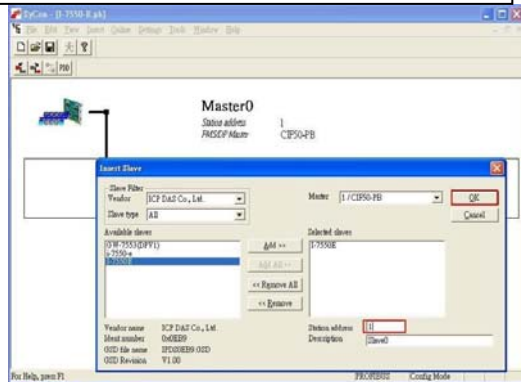
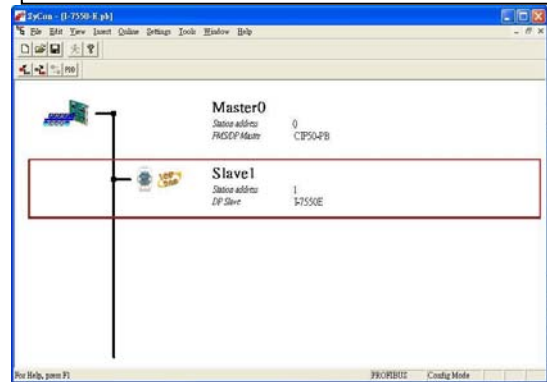Step 1: Click insert slave button in the PROFIBUS configuration tool.

Step 2: Choose I-7550E device and click Add button.

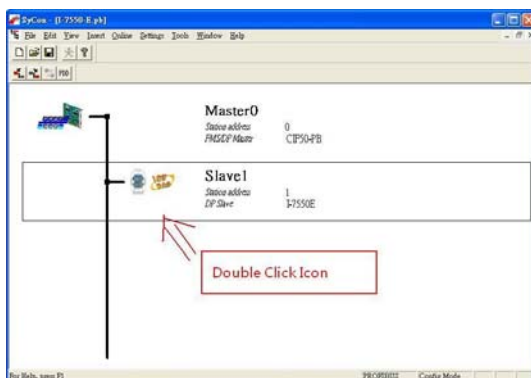| Step 3: Set address of I-7550E and then click OK button.	Step 4: Finish adding I-7550E in the DP-master interface.

➢ **Set the modules of the I-7550E**

The user needs to set the number and size of the I/O modules in the PROFIBUS configuration tool. The settings of the modules are described below.
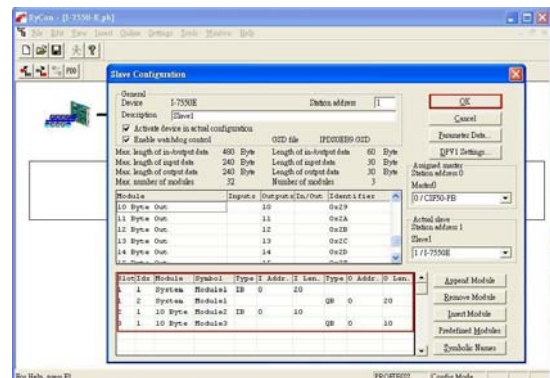
- Max. I/O modules：32 modules
- System setting module：20 Bytes output , 20 Bytes input
- Output module：1~16 Bytes, 32Bytes, 64Bytes, 64 Words
- Input module：1~16 Bytes, 32Bytes, 64Bytes, 64 Words

In any case, "System setting module" must be selected first. In this example, we want to have 10 Bytes Input and 10 Byte Output, so we configure a "System setting module", a "10 Byte In" module and a "10 Byte Out" module as below:
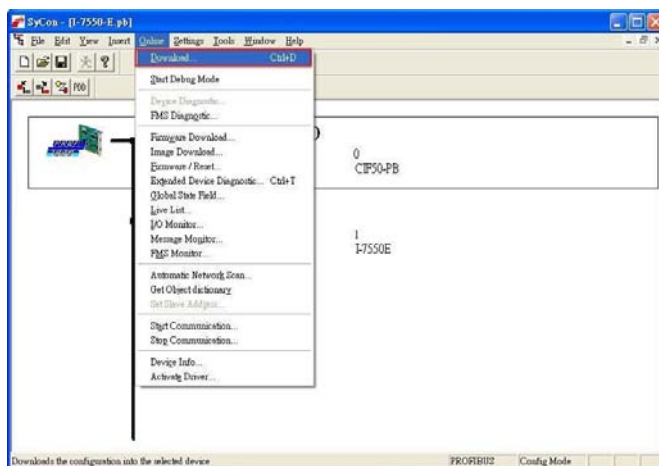
Double click I-7550-E's icon to enter Slave configuration dialog	Configure module and click OK button

When the user finishes the configuration and saves setting in the PROFIBUS Master station successfully, the 'RUN' LED indicator of I-7550E is turned on. That shows the I-7550E working in the data exchange mode.
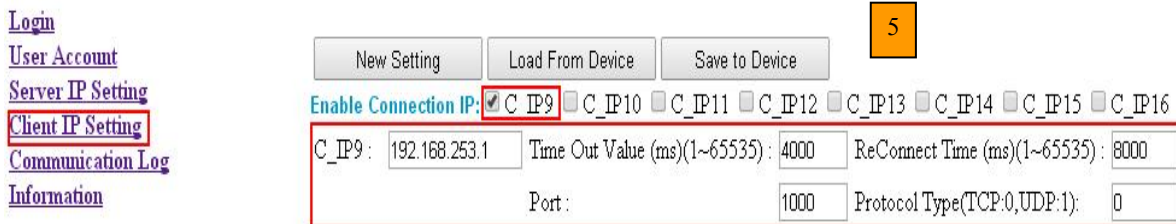
Click <Online->Download> to download the setting into PROFIBUS Master station

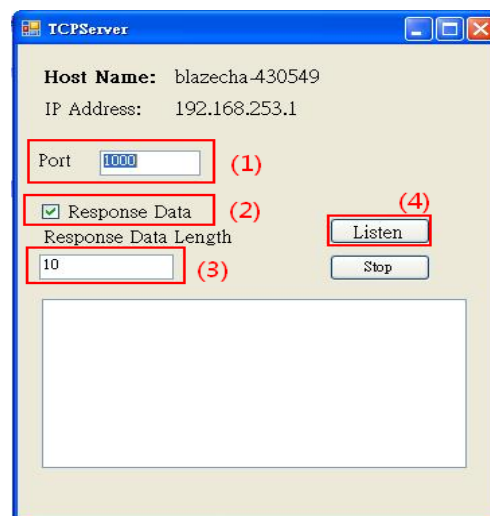➢ **Set the network configuration of the I-7550E**

1. Open MiniOS7 utility and press "F12" to find IP address of I-7550E.
2. Open web browser (ex. IE). Enter IP address of the I-7550E in the Address field and press "**Enter**" to connect to I-7550E, and then enter default password ("icpdas") to login to I-7550E in Login page.
3. Click "Server IP Setting" to set the network configuration of the I-7550E (please refer to user manual section 5.3). The network configuration of the I-7550E must have the same domain and different IP with the PC (ex: PC's IP=192.168.253.1, MASK=255.255.0.0;and I-7550E's IP=192.168.253.2, MASK=255.255.0.0).
4. Press "Save to Device" to save settings to EEPROM of I-7550E.
5. Click "Client IP setting" to set the information of TCP server (please refer to user manual section 5.3). In this case, we setup C_IP9(192.168.253.1) and enable it.
6. Press "Save to Device" to save settings to EEPROM of I-7550E and restart I-7550E.

5. I-7550E module communication test

This demo uses TCP server program on the PC to communicate with I-7550E. Users can get it from the ICP DAS companion CDROM(PATH:"CD: \PROFIBUS\Converter\I-7550e\utilities\TCPserver").The TCPserver setting is shown in the below.
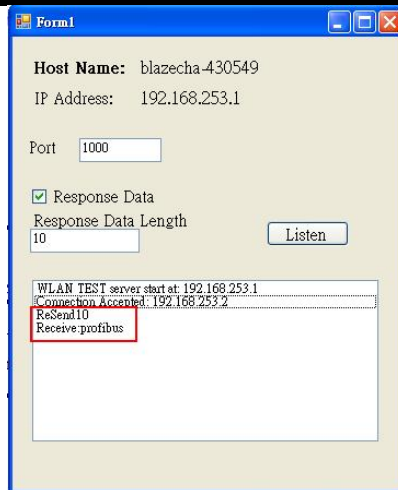

TCPserver operate procedure

> ### PROFIBUS input/output test

--Send data to TCPserver and get response data from TCPserver.

The user needs to set the value of "System setting module" from Byte 0~ Byte 10, and set output data ("profibus") from the Byte 20~ Byte 27. After finishing the setting, the user needs to set the value of Byte 1 from 0 to 1 to trigger the data output function.

Send "profibus" string in PROFIBUS output data area

Module	Byte	Data type	Representation	Value	Description
System module	Output 0	Byte	Hex	0x01	Operation mode
	Output 1	Byte	Hex	0x00→ 0x01	Trigger byte
	Output 2	Byte	Hex	0x00	
	Output 3	Byte	Hex	0x09	Connection ID
	Output 4	Word	Hex	0x00	
	Output 6	Word	Hex	0x0A	Total length of message
	Output 8	Byte	Hex	0x01	Total numbers of Index
	Output 9	Byte	Hex	0x00	Current Index
	Output 10	Byte	Hex	0x0A	The length of current message
Output module	Output 20	Byte	Hex	0x70	'p'
	Output 21	Byte	Hex	0x72	'r'
	Output 22	Byte	Hex	0x6F	'o'
	Output 23	Byte	Hex	0x66	'f'
	Output 24	Byte	Hex	0x69	'I'
	Output 25	Byte	Hex	0x62	'b'
	Output 26	Byte	Hex	0x75	'u'
	Output 27	Byte	Hex	0x73	's'

At the meantime, TCPserver will response 10 Bytes data "0x00~0x09". PROFIBUS master can receive data in the input data area, as shown in the below:

Receive 10Bytes data(0x00~0x09) in PROFIBUS input data area

Module	Byte	Data type	Representation	Value	Description
System module	Input 0	Byte	Hex	0x01	Operation mode
	Input 1	Word	Hex	0x00	Message ID
	Input 3	Word	Hex	0x01	Total number of written message
	Input 5	Word	Hex	0x00	Numbers of message waiting to be write
	Input 7	Word	Hex	0x09	Connection ID
	Input 8	Byte	Hex	0x00	
	Input 9	Word	Hex	0x00	
	Input 11	Byte	Hex	0x01	Total numbers of Message index
	Input 12	Byte	Hex	0x00	The index of current message
	Input 13	Word	Hex	0x0A	Total length of message
	Input 15	Byte	Hex	0x0A	The length of current message
Input module	Input 20	Byte	Hex	0x00	Received Data from TCPserver Program
	Input 21	Byte	Hex	0x01	
	Input 22	Byte	Hex	0x02	
	Input 23	Byte	Hex	0x03	
	Input 24	Byte	Hex	0x04	
	Input 25	Byte	Hex	0x05	
	Input 26	Byte	Hex	0x06	
	Input 27	Byte	Hex	0x07	
	Input 28	Byte	Hex	0x08	
	Input 29	Byte	Hex	0x09	

About the information of "System setting module", please refer to user manual Chapter 3 and 4.