

**OMC System Software
High-performanceHMI
SyCON User Manual
IM41S96-E**

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Symbol Definition	
	WARNING: Indicates information that a potentially hazardous situation which, if not avoided, could result in serious injury or death.
	RISK OF ELECTRICAL SHOCK: Indicates information that Potential shock hazard where HAZARDOUS LIVE voltages greater than 30V RMS, 42.4V peak, or 60V DC may be accessible.
	ESD HAZARD: Indicates information that Danger of an electro-static discharge to which equipment may be sensitive. Observe precautions for handling electrostatic sensitive devices
	ATTENTION: Identifies information that requires special consideration.
	TIP: Identifies advice or hints for the user.

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SyCON User Manual

Section 1 SyCon Software Installation

1.1 Overview

SyCon software is the application software of PROFIBUS master module, and it is used to configure PROFIBUS communication.

1.2 Environment

SyCon software is applied in Windows XP Professional SP2 (32bit).

1.3 Steps of Installation

SyCon software can be installed by following steps:

1. Put the installation disc of the SyCon software into the CD-ROM. The Windows system will run the setup procedures automatically, as shown in following figure.



Figure 1-1 Installation Interface

2. Click “System installation” to start installing SyCon, as shown in following figure.

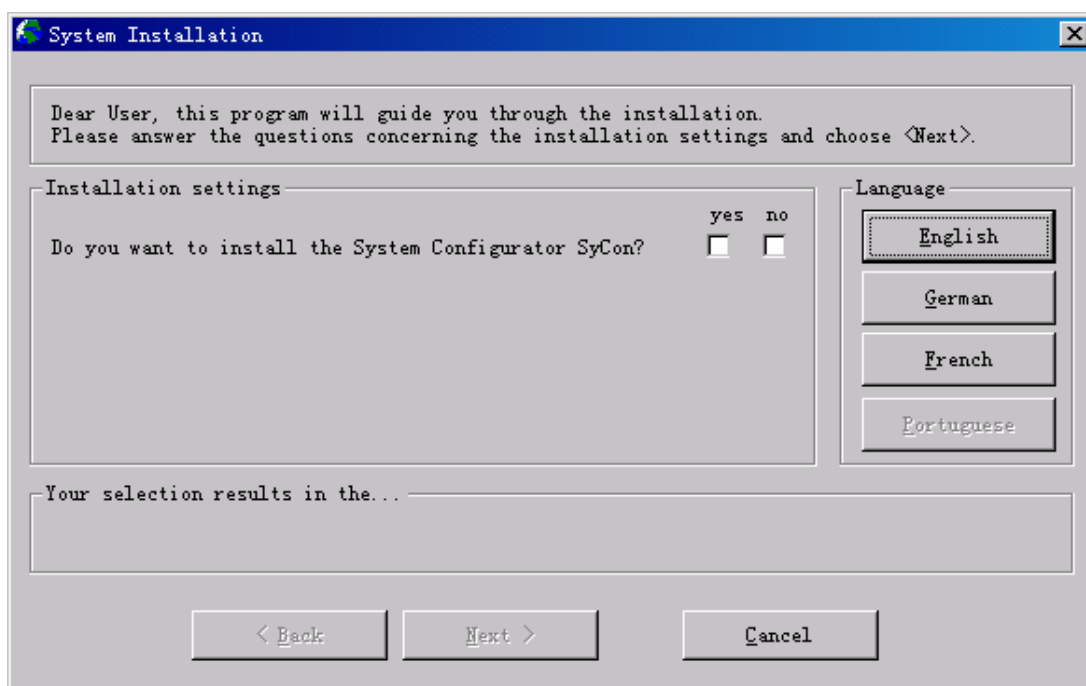


Figure 1-2 SyCon Installation Interface 1

3. Configure options of “Installation settings” as following figure, and select “English” in “Language” frame.

Note: if local PC has installed SyCon software, then the following figure will be omitted.

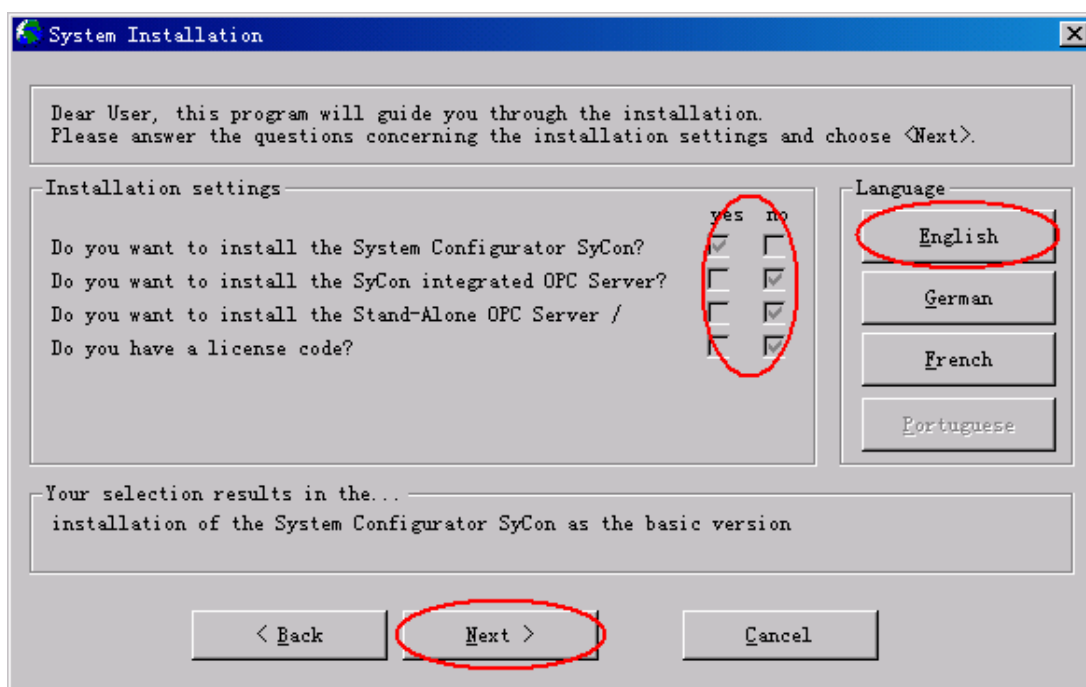


Figure 1-3 SyCon Installation Interface 2

4. Click “Next>” to enter in next installation interface, as shown in following figure.

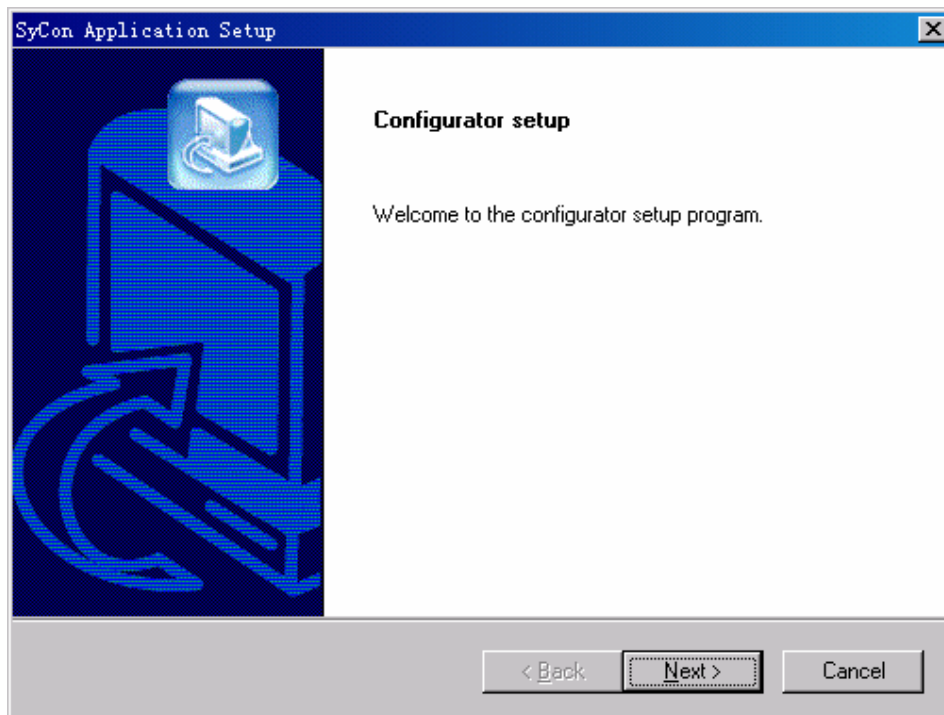


Figure 1-4 SyCon Installation Interface 3

5. Click "Next>" to enter in next installation interface, as shown in following figure.

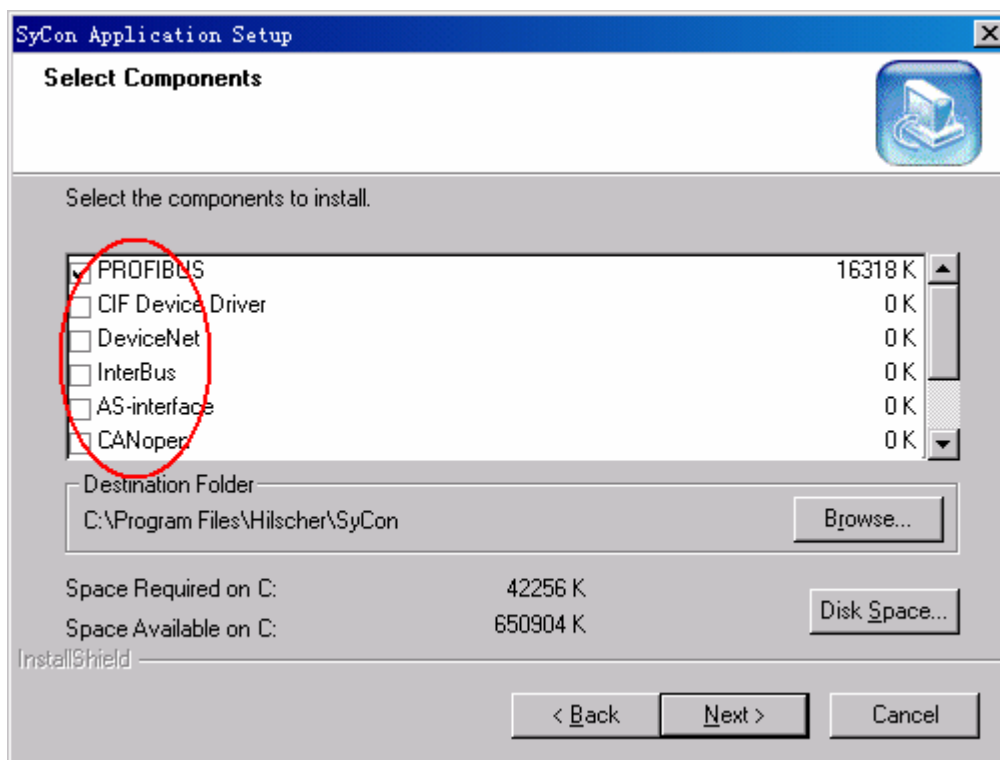


Figure 1-5 SyCon Installation Interface 4

6. Click "Next>" to enter in next installation interface, as shown in following figure.

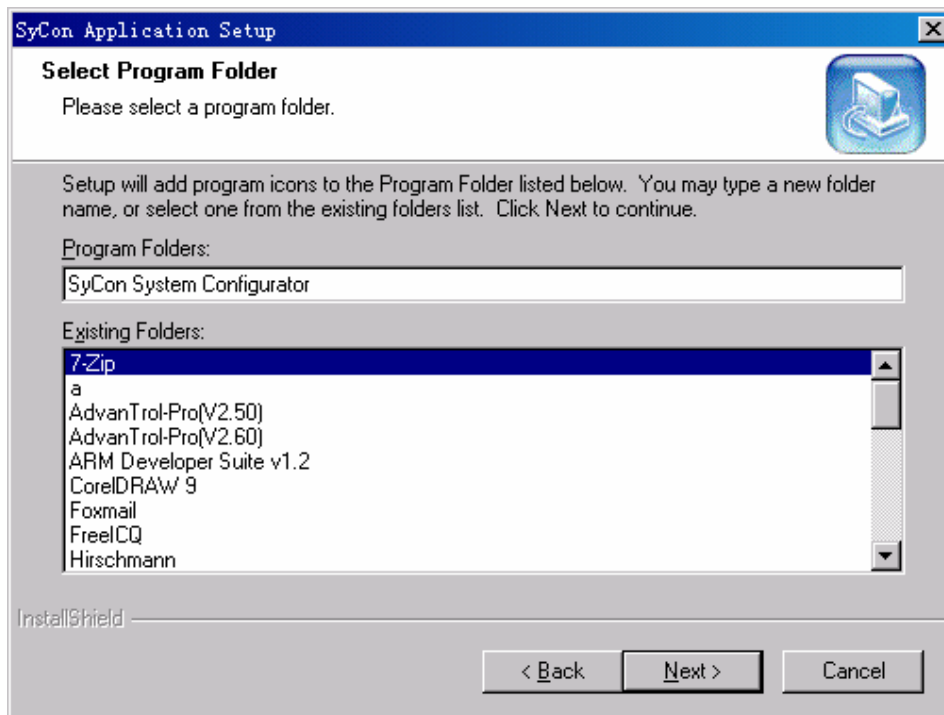


Figure 1-6 SyCon Installation Interface 5

7. Click "Next>" to enter in installation interface.



Figure 1-7 SyCon Installation Interface 6

8. After installation, the interface shown as following figure display.

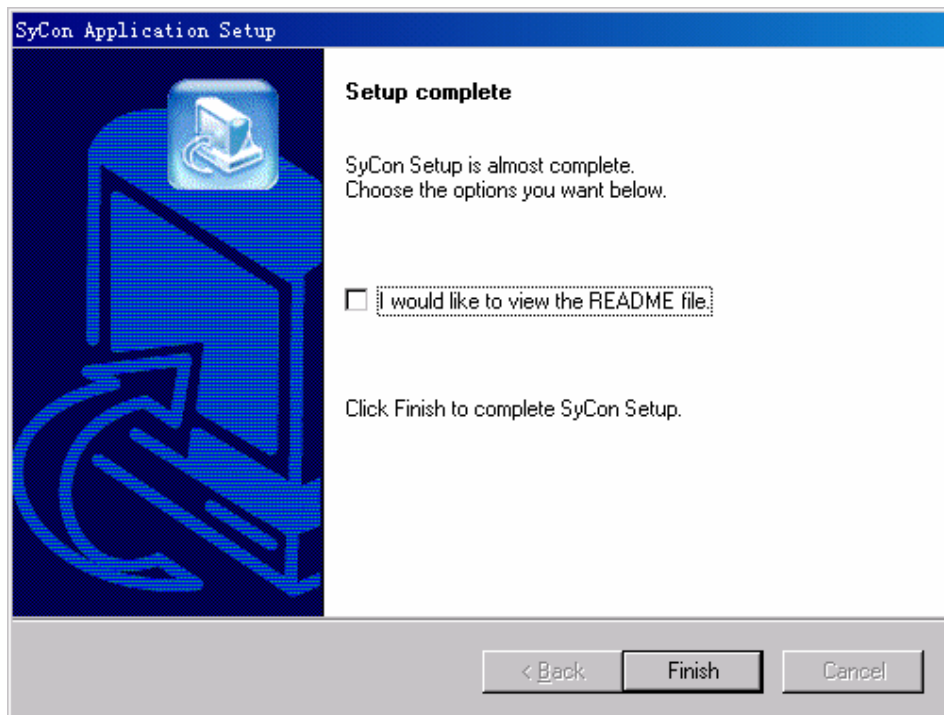


Figure 1-8 Installation Interface 3

9. Click “Finish” to finish installation of SyCon.
10. Register SyCon.

Only after registered, all the functions of SyCon can be valid. Else, only the system with one master and one slave can be configured.

Double-click icon of SyCon to run SyCon.

Select “**Help/licensing**” to popup dialog box as shown in following figure.

Licensee Information		
Name	*****	
Company	Zhejiang SUPCON Co.Ltd	
Address	Hangzhou Liuhe Road	
City, State, Zip	310053	
Country	China	

Licensing of the fieldbus systems		
Not licensed		
Module	Version	Date
Profibus	2, 7, 5, 4	20/08/2004
License ordered		
Module	Version	Date
License presented		
Module	Version	Date

Figure 1-9 SyCon Register Interface

Input "Name", "Company", "Address" and other information, then click "Enter License Code" to input license code.
Restart SyCon to validate the register number.

Tips:



"Name", "Company" and license code must be matched and inputted correctly. Other information is optional.

Section 2 Usage of Software

The types PROFIBUS-DP stations include masters and slaves. In system configuration, PROFIBUS communication module is used as the master of the PROFIBUS, while DP linkers and various PLCs are used as the slave. PROFIBUS-PA bus devices are connected to the DP bus through couplers/linkers.

2.1 Preparation before Configuration

Before configuring the PROFIBUS communication module, please prepare the GSD file provided by DP device supplier and carefully read the device operation manual. If the connecting device is the PA bus device, corresponding GSD file of linker should be produced.

Input the GSD Files of DP Devices

To connect PROFIBUS-DP device, there should be GSD file for connecting PROFIBUS-DP which is provided by device supplier or can be download from the database in www.profibus.com. To ensure the GSD file used matching the device, it is recommended to use the GSD file provided by the device supplier.

For the convenience of configuration and further maintenance, please copy GSD in DP device to the folder (Program Files\Hilscher\SyCon\other\GSD) before configuration, which is created after SyCon software setup.

For the convenience of user to study and practice, some relative GSD files of certain DP device are copy to the folder (Program Files\Hilscher\SyCon\other\GSD) in advance.

Generating GSD Files of Linkers



Tip:

If you don't need to connect PROFIBUS-PA device, you can skip this section.

To connect PROFIBUS-DP device, there should be GSD file for connecting PROFIBUS-DP which is provided by device supplier or can be download from the document base in www.profibus.com. To ensure the GSD file used matching the device, it is recommended to use the GSD file provided

by device supplier.

Because PA device communicates with DP device through linker, GSD file of linker should be created.

Take Siemens IM157 linker as example. For configuration of IM157, Siemens Company provides a template for creating GSD file of DP/PA link. This template does not include module ID of any PA device. The module ID of PA slave should be added into the GSD file of DP/PA link. All these can be accomplished by GSD tools.

All versions of GSD tools (GSDTOOL.JAR) require Java operation environment (JRE) version 1.3.0 or higher version running in all MS -Windows operation system. The JRE can be obtained from internet for free.

To ensure normal operation of GSD tools, the GSD file of field device should meet one requirement that the first 22 bytes of different module used in one GSD file should be different so GSD tools can identify them by different module names. If the difference only exists in the bytes after the first 22 bytes, user will get error message and can not process GSD file of the field device. User can edit the GSD file of the field device and change or shorten the corresponding module to make simple remedy. Changing the module name of GSD file does not affect the actual function of the field device.

The operation procedures of generating GSD file of linker are as bellow:

1. Create a folder under the D disk (e.g. D:\IM157).
2. Copy GSDTOOL.JAR and IMLINKV1.DAT (address "Program Files\Hilscher\SyCon\other\Tools") to file D:\IM157.
3. Copy the GSD file of PROFIBUS-PA device used to a same folder D:\IM157 as shown in following figure.

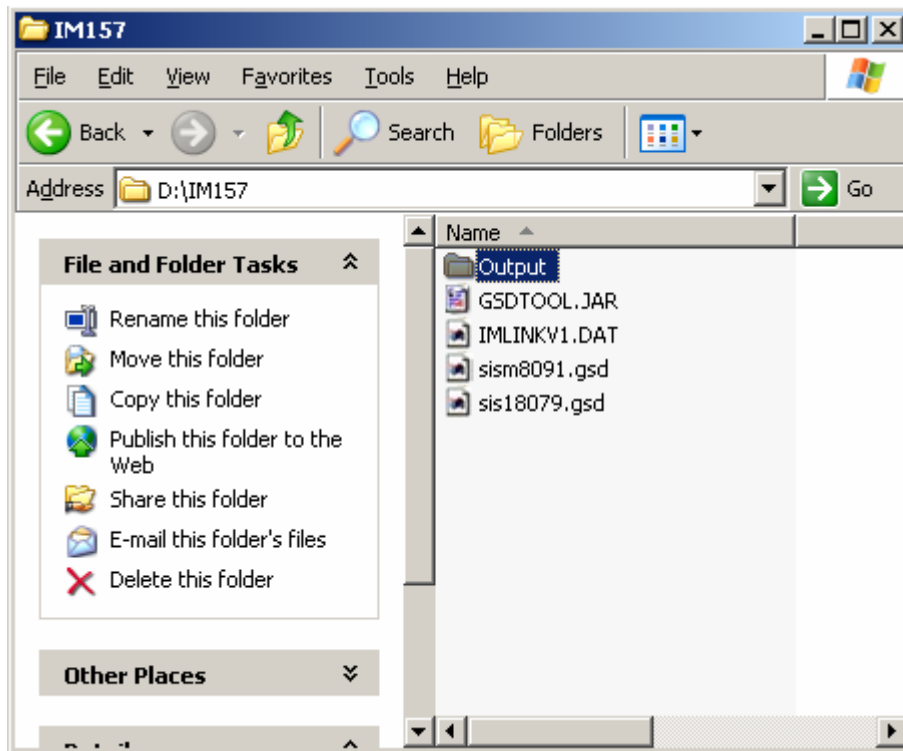


Figure 2-1 Copy the GSD file of PROFIBUS-PA device to a same folder

4. Double click GSDTOOL.JAR, then popup the following dialogue box.

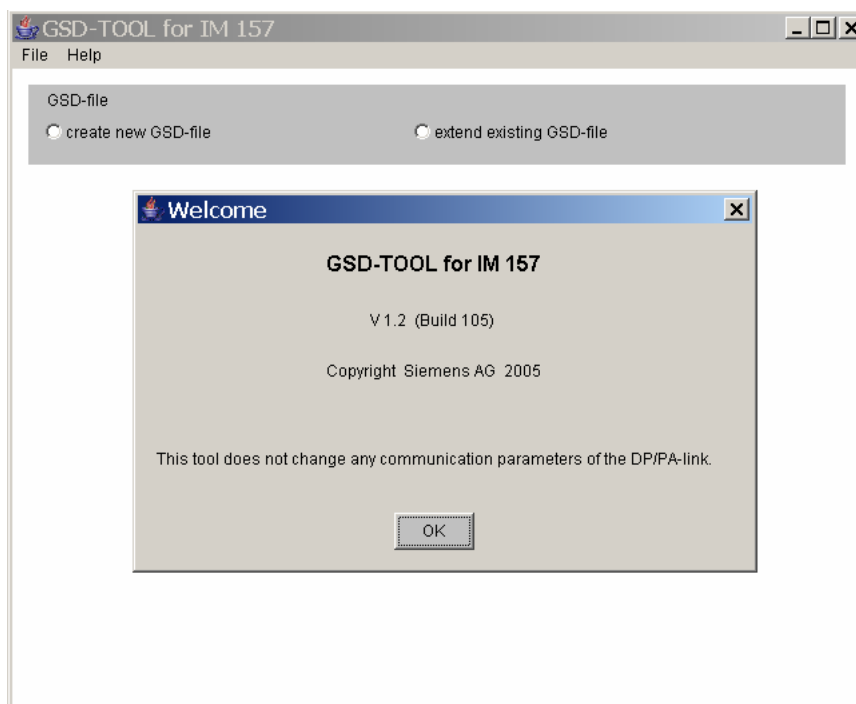


Figure 2-2 GSD-TOOL for IM157 interface 1

5. Click OK and enter into the interface shown in following figure.

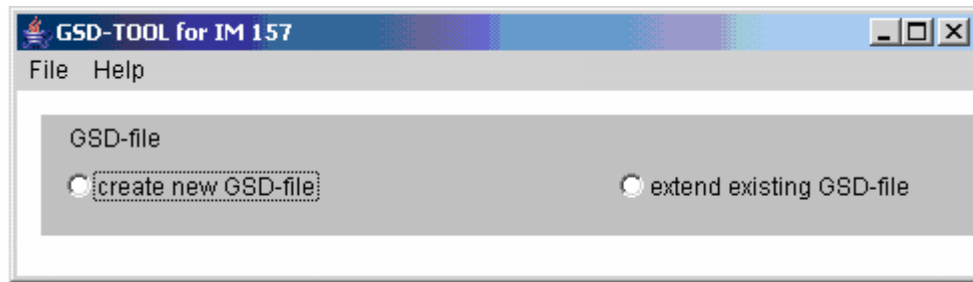


Figure 2-3 GSD-TOOL for IM157 interface 2

6. Select Create new GSD-file, an interface shown in following figure.

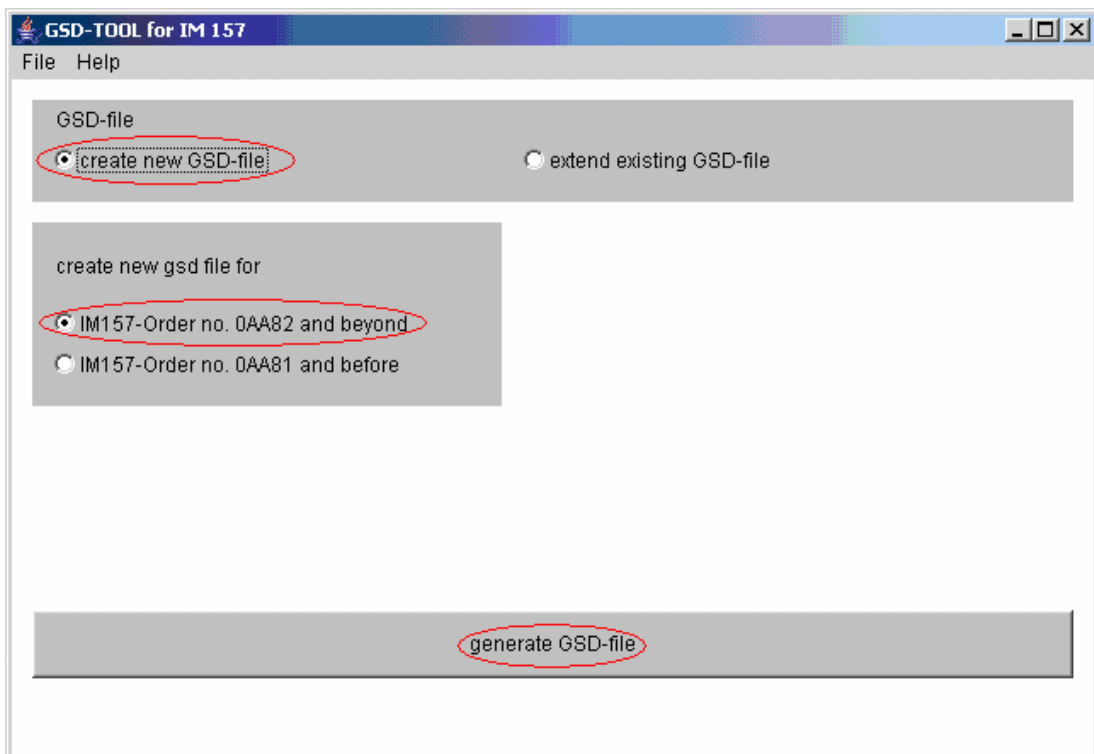


Figure 2-4 GSD-TOOL for IM157 interface 3

7. There the IM157 with the order number 6ES7 153-2BA81-0XB0 is applied, select the options in following figure, and click generate GSD-file to generate the GSD file obtaining the device information of PROFIBUS-PA. The file is in the automatically created folder Output with the name of si048052.gsd.

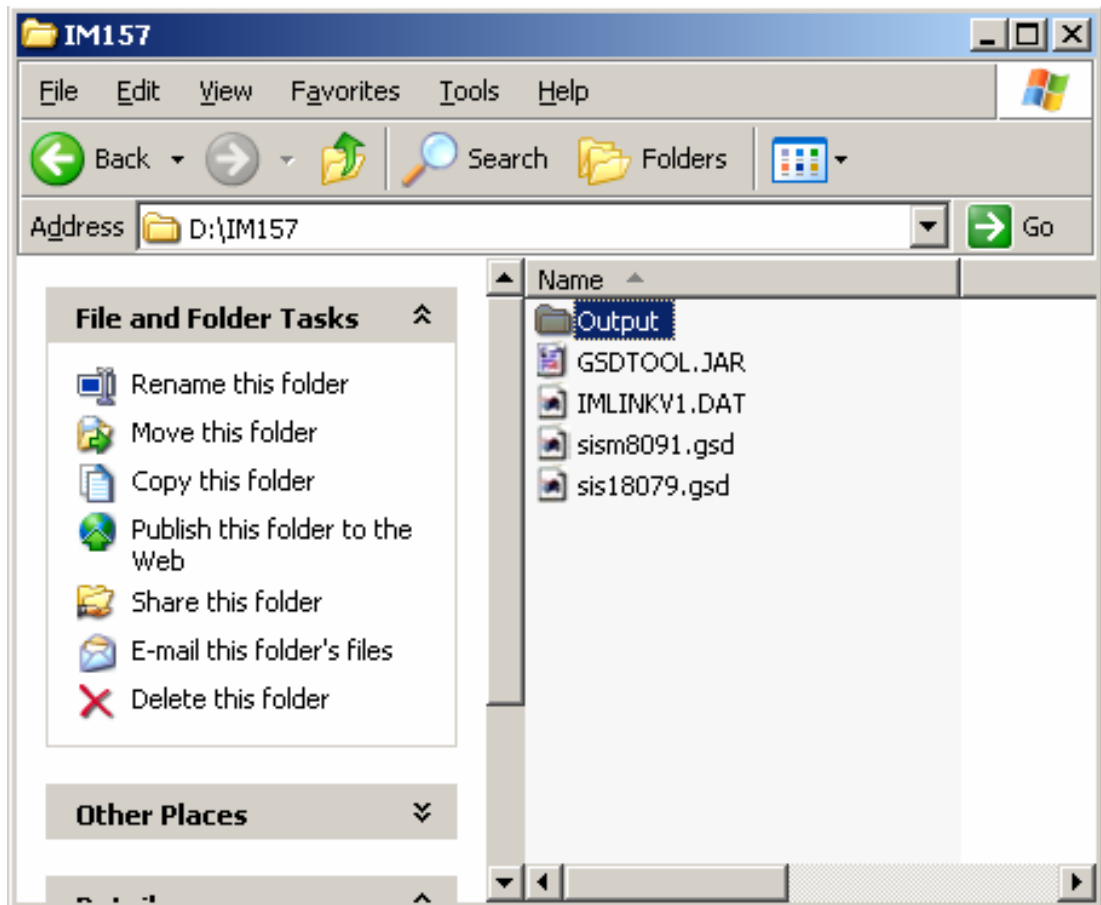



Figure 2-5 Create the folder Output automatically

2.2 Add COM722-S in Hardware Configuration

Click **Start > OMC > VFExplorer** to run system configuration software, or click the desktop icon to run the software directly.

After run the “Configuration Management Software”, load the corresponding project, select the corresponding controller and double click “hardware configuration” to enter into hardware configuration interface.

There are two approaches to add “COM722-S”:

1. Select the main controller, right click and then select “Add” or “Operate (O)/Add (A)” in the menu or directly click the  in the tool bar, then a dialogue box shown in Figure 2-6 will pop up. Select “COM722-S PROFIBUS Communication Module” and corresponding address, then click “Add” to finish the adding process.

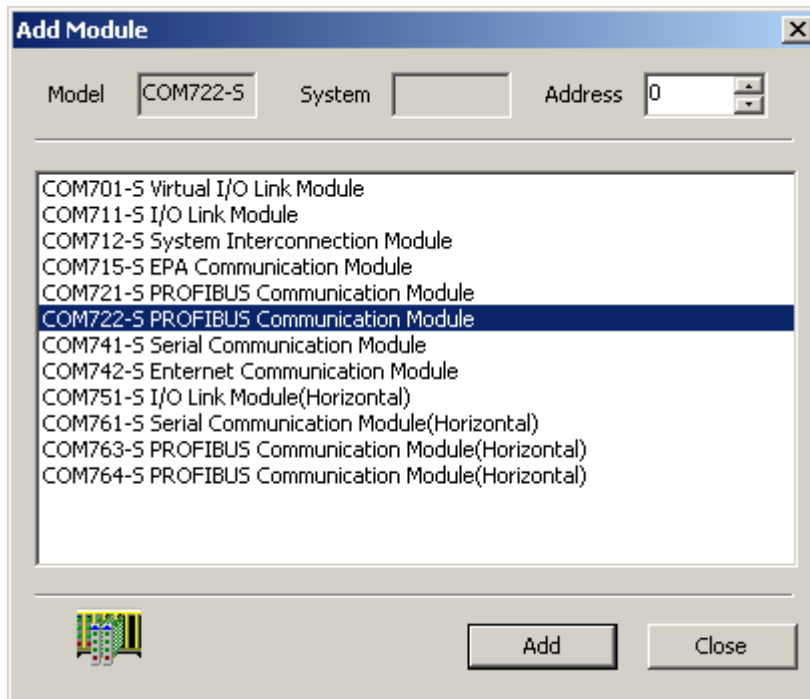


Figure 2-6 Add COM722-S

2. After selecting the controller, add the subordinate device at the subordinate device list at the right view as shown in Figure 2-7.

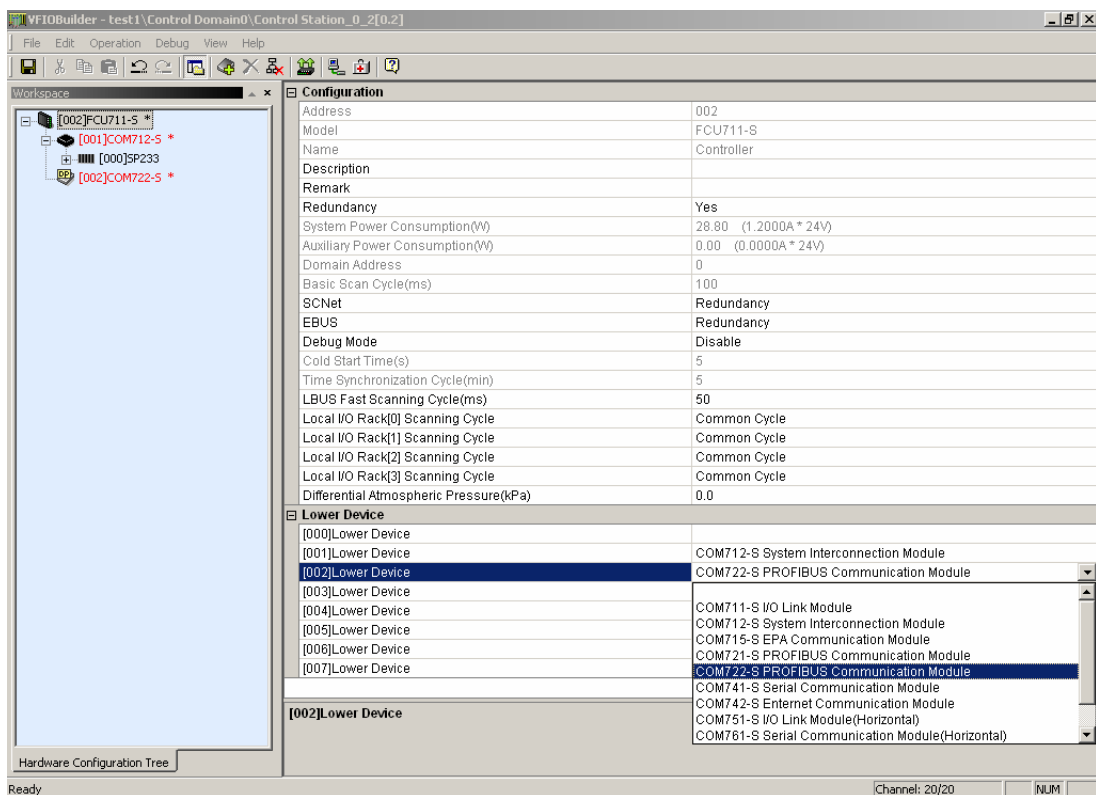


Figure 2-7 Add COM722-S

**ATTENTION:**

The address set when adding COM722-S into hardware configuration, i.e. the address of COM722-S in the E-BUS node is the same as the address jumper in the base. The scope is 1~7.

2.3 DP Communication Configuration

In this section a PROFIBUS communication module as a PROFIBUS master with a module type slave ET200M and a compact type slave IM184 is taken as an example to explain how to use SyCon to configure PROFIBUS.

Entering DP Communication Configuration Interface

In hardware configuration, to select COM722-S, select “Communication Configuration” by left click or select “Operate (O)/Communication Configuration” in the menu to enter SyCon software as shown in following figure.

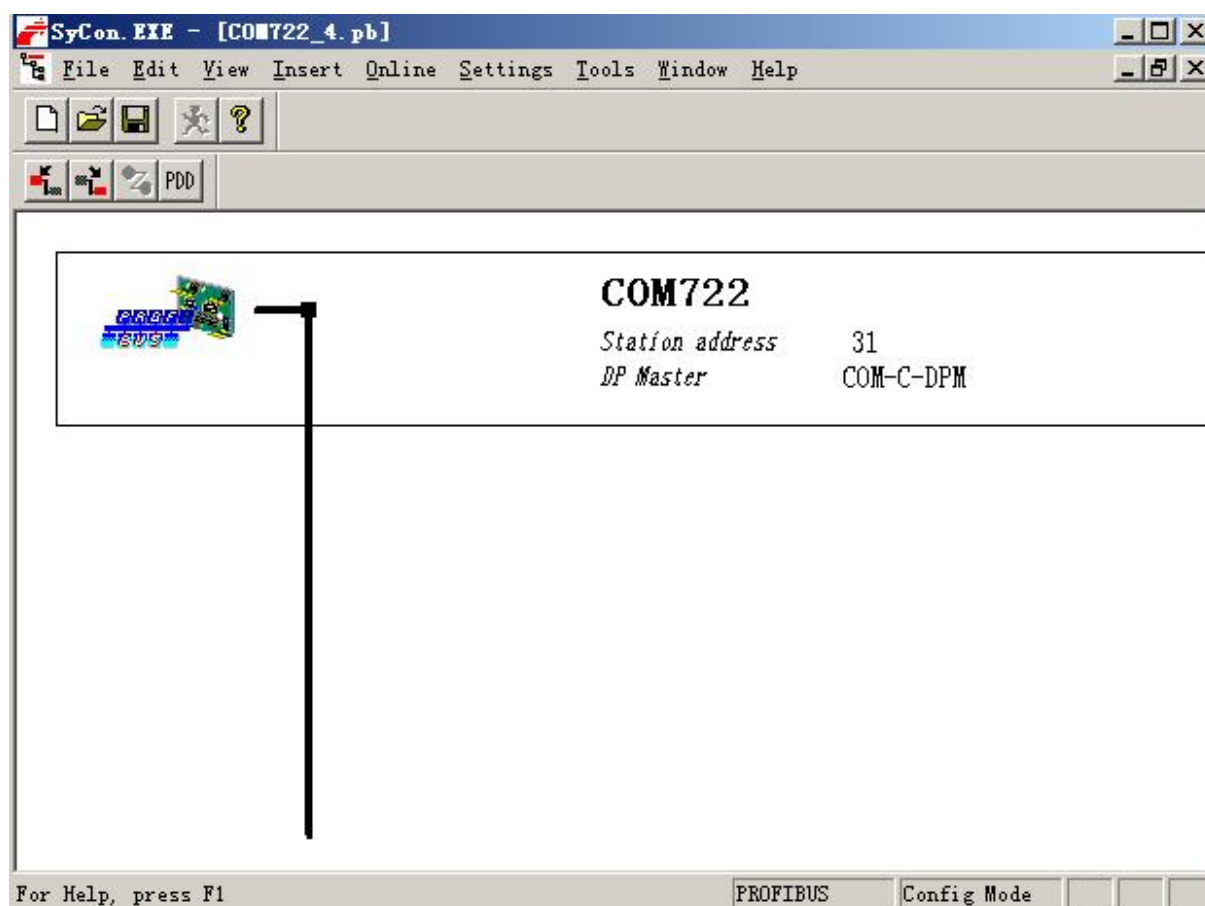


Figure 2-8 DP communication configuration interface SyCon software

Configure DP Master

Double click the master icon and open the “Master Configuration” dialogue box as shown in following figure. The default address of the master is 31. If you need change it, edit it directly in “Station” editing box as shown in following figure.

**Attention:**

The address here is the address of COM722-S in MPI/DP network. Its default value is 31.

Confirm the selection of the check box before “Auto addressing”.

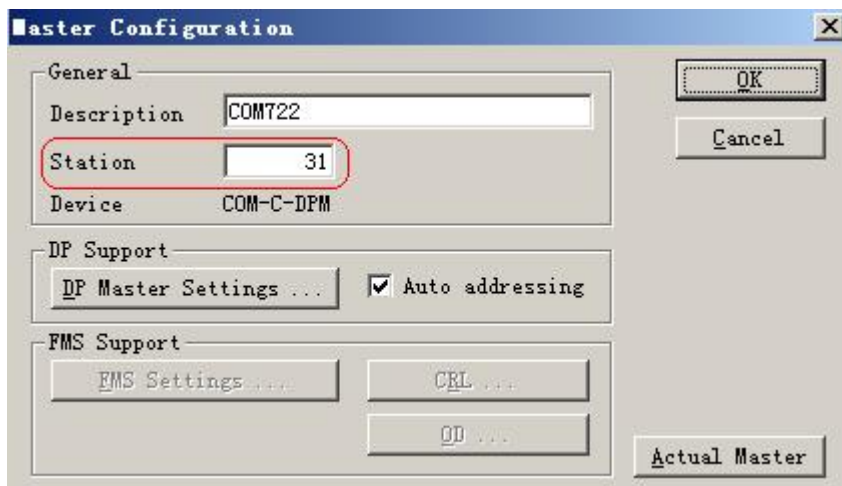


Figure 2-9 Master configuration dialogue box

Click “DP Master Settings” to enter into “DP Master Configuration” interface, and set the items as following figure.

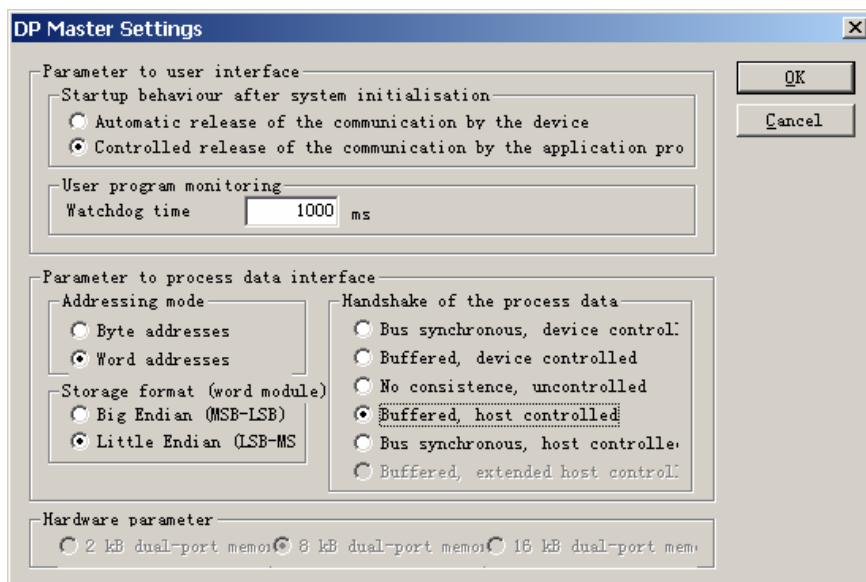


Figure 2-10 DP master configuration interface

Add GSD Files of Slaves

Firstly, select “File/Copy GSD”. Then, select the GSD files to be imported, such as the *siem801d.gsd* of ET200M and the *SIEMFFFF.GSD* of IM184. Finally, click “Open” to save the files in the path of “Program Files\Hilscher\SyCon\Fieldbus\PROFIBUS\GSD” automatically.

Tip:

During importing, an Error dialog that interface icon dib bitmap file doesn't exist may be popup. Click “Cancel” and it will not affect the actual operation of the SyCon software.

Add DP Slaves

Select “**Insert/Slave**”; select ET 200M (IM153-1) from the popup Insert Slave interface; click “Add”; set the address of Station as 3 and Description as Slave3_ET200M as shown in following figure.

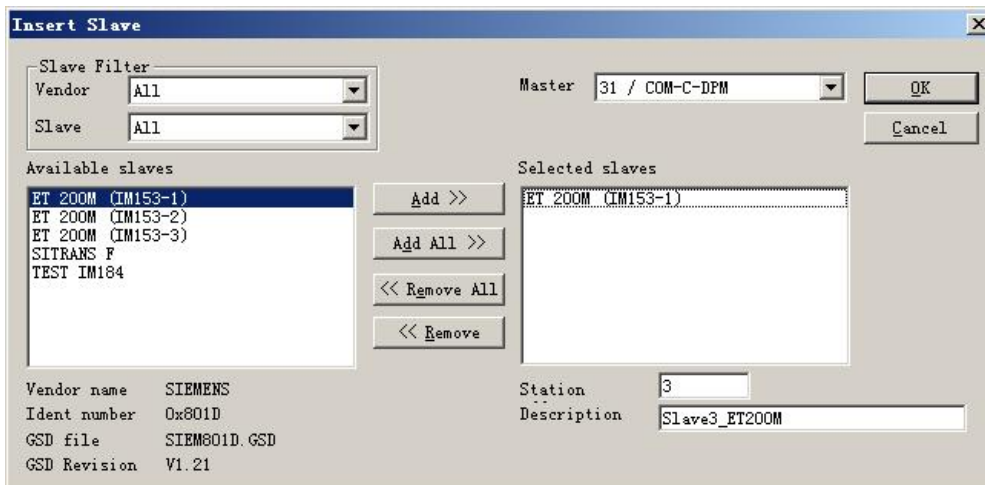


Figure 2-11 Add a first slave

Select “TEST IM184”; click “Add”; set the address of Station as 4 and Description as Slave4_IM184 as shown in following figure.

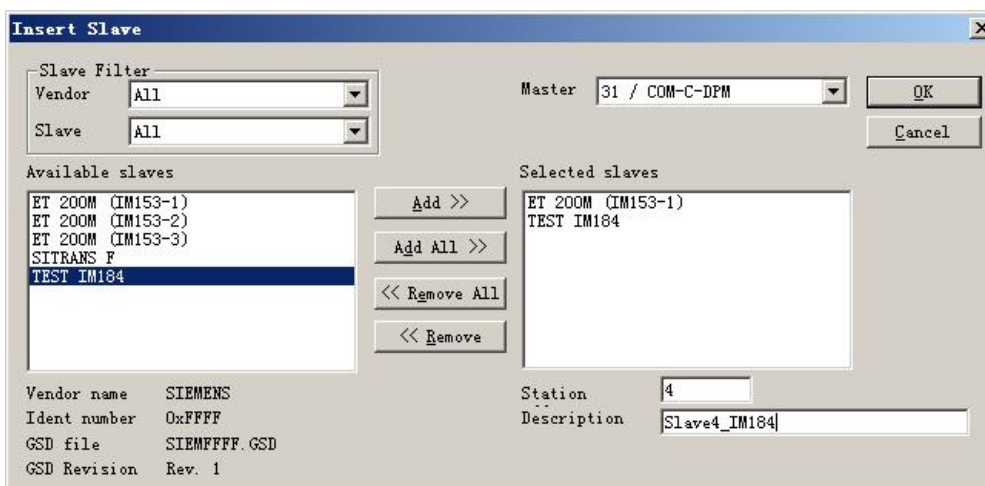


Figure 2-12 Add a second slave

The figure below shows the SyCon software configuration software with 2 DP slaves.

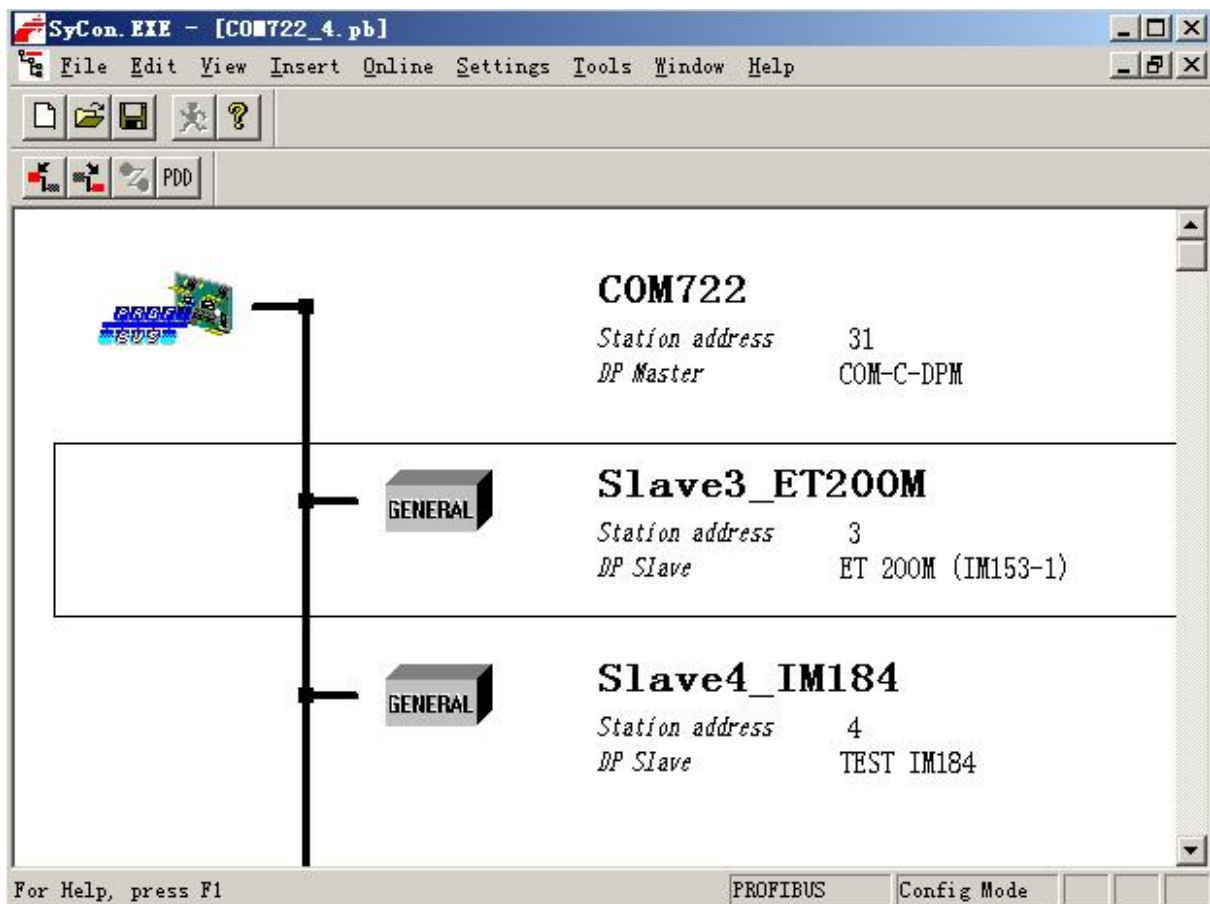


Figure 2-13 SyCon configuration interface with a master and 2 slaves

Configure DP Slaves

Attention:



Since different DP slaves have different characters, please refer to the relative application manual when configuring DP slaves. Furthermore, on the configuration method, please refer to the module manual when the S7-300, CP342-5, IM157, etc are as slaves.

Take the Slave_ET200M as an example:

Right click Slave_ET200M and then select “**Settings/ Slave Configuration**” or double click the Slave_ET200M icon to open the “Slave Configuration” interface.

Add modules one by one in the following order:

Select “Config for slot1”.

Select “Config for slot2”.

Select “Config for slot3”.

Select the specific modules according to the order number of I/O modules carried by ET200M.

For example, 16-channel digital input module SM321 with the order number of 6ES7 321-1BH0*-0AA0, the module has input data of 2 bytes.

Another example, 8-channel analog input module SM331 with the order number of 6ES7 331-7SF00-0AB0, the module has input data of 8 bytes. As shown in Figure 2-14.

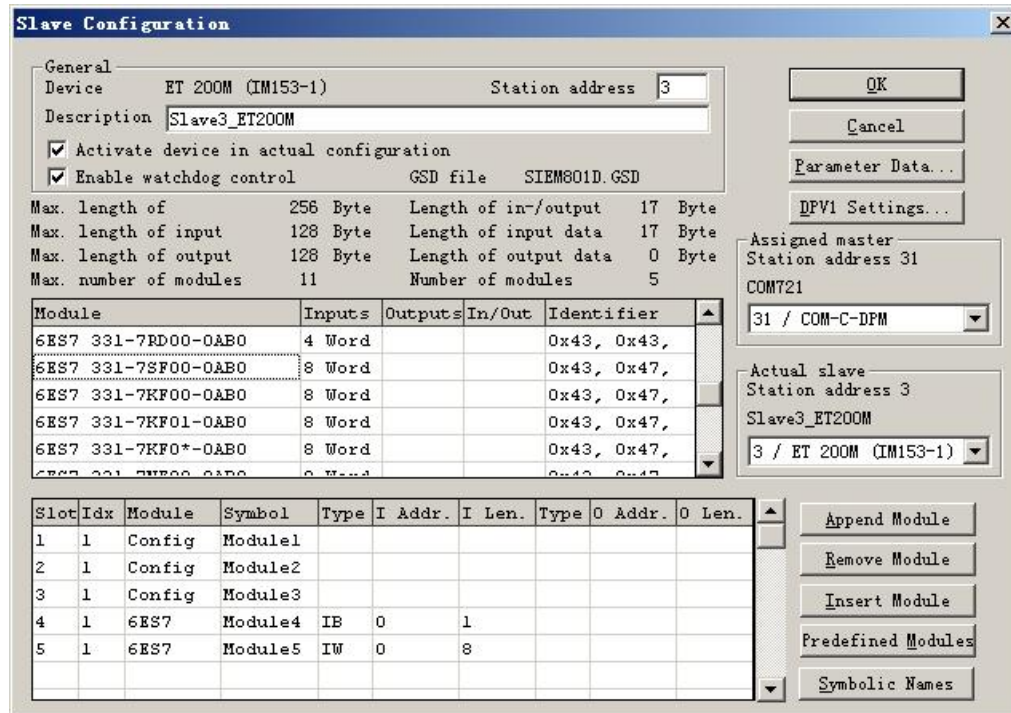



Figure 2-14 Slave Configuration Interface

Configure Bus Parameter

Click the master icon. Select **"Settings/ Bus Parameter"** in menu. Set baud rate, such as 1.5Mbps.

Save the file.

Save Configuration File and Exit

After finishing DP communication configuration in the SyCon software, select  button or click **"File/ Save"** to save the configuration. Finally, exit the SyCon software back to hardware configuration software "VFIOBuilder".

Some GSD files provided by manufacturers should to generate GSD files of corresponding linker first if the connected by PA bus device.

Section 3 Configuration of Link Used as DP Slave in SyCon

Select IM157 slave by the left key of the mouse, select “**Settings/Slave Configuration**” or double click IM157 slave icon to open IM157 slave configuration interface.

Attention:

The configuration of link used as DP slave in DPCon is similar to the configuration of this section.



The configuration structure of IM157 depends on the number and type of PA slaves. It is composed of the configurations of a series PA slaves. The configurations of all PA slave is arranged in ascending order according to PA address. When configuring a PA slave, add a similar module “Begin of Device_XXXX” according to the actual connected PA slave type and then add module according to the property of PA slave.

Add a module “Begin of Device_0B25” and add another module “= Analog Input” as shown in following figure.

Figure 3-1 Add modules

Click “**Parameter Data**” to enter into the Parameter Data settings interface as shown in following figure.

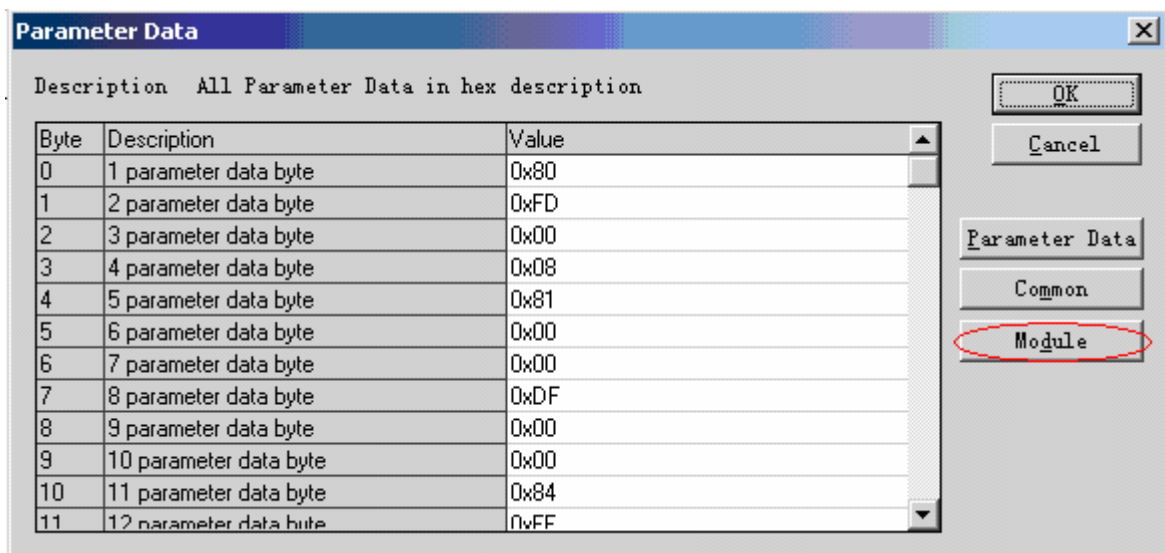


Figure 3-2 Parameter Data Settings Interface

Click **“Module”** and set the PA slave address in PROFIBUS-PA system as in following figure.

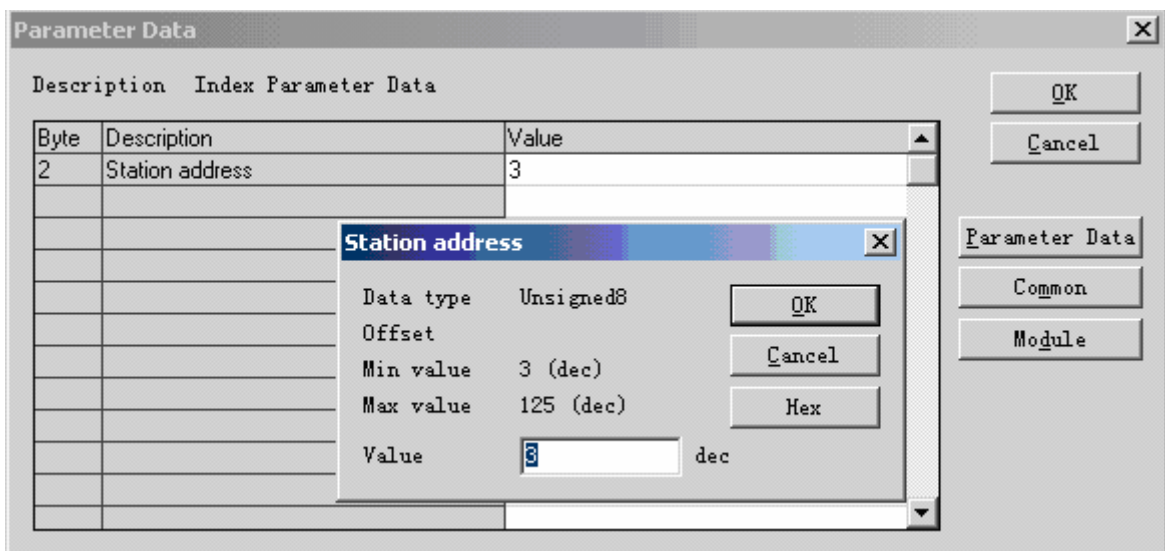


Figure 3-3 Set address of PA slave

Click **“OK”** for several times to return back the “Slave Configuration” interface of IM157 slave, as shown in following figure.

Slave Configuration

General

Device DP/PA-Link (IM157) VO/V1 mode Station address 4

Description Slave4

☒ Activate device in actual configuration

☒ Enable watchdog control GSD file SI048052.GSD

Max. length of 488 Byte Length of in-/output 5 Byte

Max. length of input 244 Byte Length of input data 5 Byte

Max. length of output 244 Byte Length of output data 0 Byte

Max. number of modules 236 Number of modules 2

Module	Inputs	Outputs	In/Out	Identifier
ABB Automation				0x01, 0xF9
Temperature Transmitter				0x01, 0xF9
Begin of Device_04c4				0x01, 0xFA
== Calculated_04c4	5 Byte			0x42, 0x84, 0x08, 0x05, 0x00, 0x00

Slot	Idx	Module	Symbol	Type	I Addr.	I Len.	Type	O Addr.	O Len.
1	1	Begin of Module1							
2	1	==	Module2	IB	0	5			
2	2	==	Module2						
2	3	==	Module2						

Assigned master
Station address 31
COM721
31 / COM-C-DPM

Actual slave
Station address 4
Slave4
4 / DP/PA-Link (IM157)

Append Module

Remove Module

Insert Module

Predefined Modules

Symbolic Names

Figure 3-4 Slave Configuration interface of IM157 slave

Click "OK" back the home interface and save the configuration.

Section 4 Revision

Table 4-1 Retrofit list of the version

Document Version	Applicable Product Version	Remarks
V1.0 (20230301)	OMC High-performanceHMI V4.70.00.00	First release
V1.1 (20230830)	OMC High-performanceHMI V5.10.00.00-M	Updated screenshots.