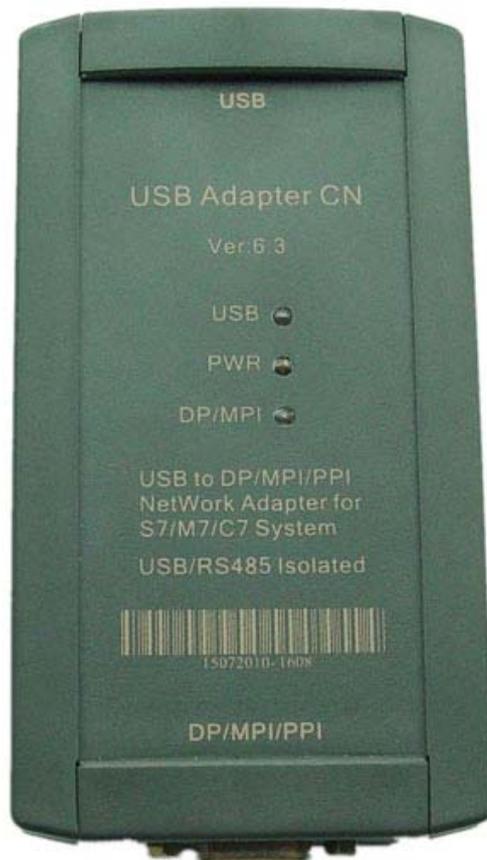


USB Adapter CN

USER MANUAL

HW: V6.5

FW: V2.5



Product Introduction

USB Adapter CN is a high-tech adapter similar , support USB of computer to PROFIBUS/MPI/PPI communication, USB Adapter CN adopt power supply from USB port,use the low-power low-voltage chip,even if the USB port power low down to 4V, it still can ensure the stable and reliable work of the adapter. RS485 interface(PROFIBUS/MPI/PPI) of USB Adapter CN is the standard interface as same as the CP5611/CP5512, the 6PIN and 5PIN of DB9F socket output 5VDC power which can supply the power for the termination resistors. Besides it can be used for S7-200/300/400 PLC,it also can be used for HMI,CNC etc other third party equipments,support long distance communication,allowed cable length meet the profibus standard.

The network type and baud rate which USB Adapter CN supports:

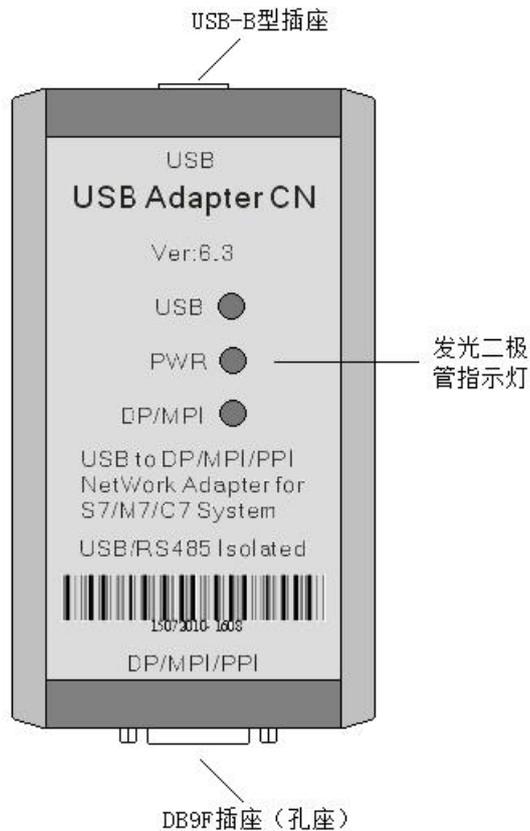
Transmission rate	MPI	PPI	PROFIBUS-DP
9.6Kbps	-	√	√
19.2Kbps	√	√	√
45.45Kbps	-	-	√
93.75Kbps	-	-	√
187.5Kbps	√	√	√
500Kbps	-	-	√
1.5Mbps	√	-	√

Main Technical Specifications:

- Compatible with USB V1.1 and USB V2.0 specifications,connect the USB port of PC to DP/MPI/PPI interface of S7 system.
- Support PROFIBUS/MPI/PPI communication,auto bus protocol test
- You can download the latest software from Siemens website to update the firmware for USB Adapter CN to get the latest function
- Power supply from USB port, power consumption about 150mA,with over current and surge protection
- Opto-isolated voltage 1000VDC.
- USB port has the anti-surge protection

- RS485 interface has the anti-lightning and surging protector, Repeatability surge capacity: $I_{pp}=100A$ (10/700us, 4KV) ,meet the standard ITU-TK20/21、VDE 0433. $\pm 15KV$ ESD protection.
- support long distance communication,the largest communication distance meet the profibus standard
- With the power indicator, USB indicator, DP/MPI indicator.
- One PC only support one USB Adapter CN
- Can install the adapter on the S7-300/400PLC rail or 35MM standard rail.
- Overall Size: 123mmx68mmx30mm(Length*Width*Height),with the mounting bracket
- Working Temperature: $-20\sim+75^{\circ}C$

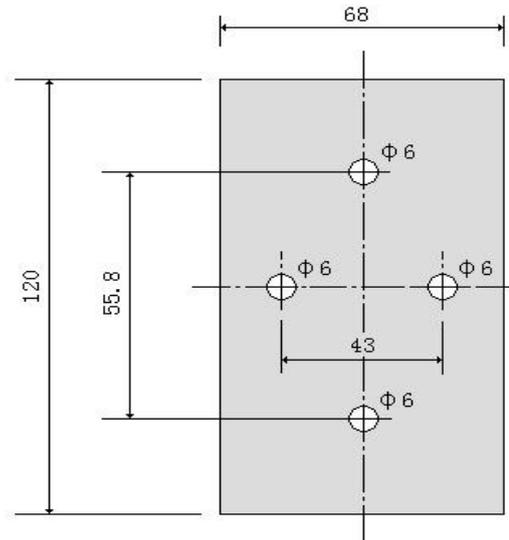
shape structure:



USB Adapter CN Shape

USB Adapter CN installation

You can put the USB Adapter CN on your desk or install it on the rail of control cabinet. It has the mounting bracket accessory. User can self-make an Aluminum board with thickness 1.5mm~2.5mm, then install the adapter on the S7-300/400PLC rail or 35MM standard rail.



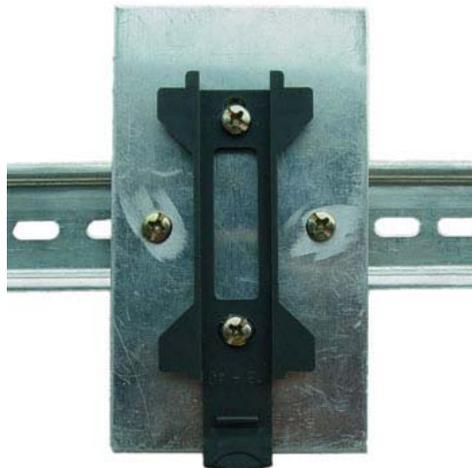
aluminum boss
thickness=1.5mm~2.5mm



Fix the bracket and Aluminum board on the S7-300 PLC rail



USB Adapter CN has been installed on the S7-300PLC rail



Fix the bracket and Aluminum board on the standard rail



USB Adapter CN has been installed on the standard rail

USB Adapter CN LED Indicator

Indicator	Status	
	Light On	Flash
USB	Adapter is normally connected to PC	USB port has data transfer
PWR	Adapter passed the self-test, work normally	hardware fault
DP/MPI	On line	DP/MPI/PPI port has data transfer

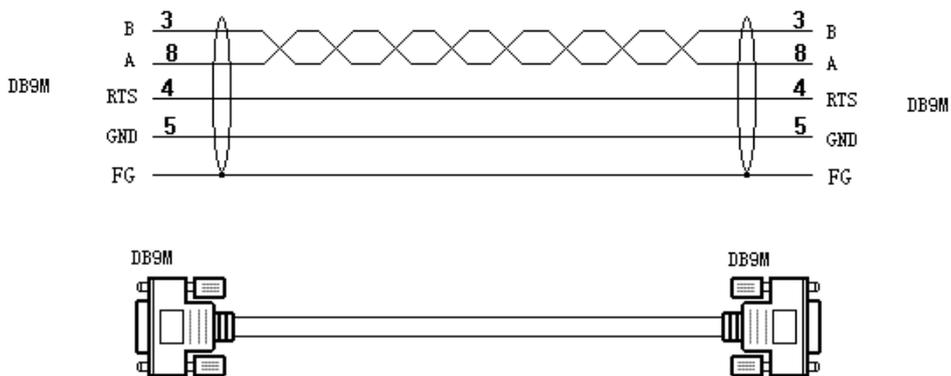
PROFIBUS/MPI/PPI interface

RS485 interface of USB Adapter CN is DB9F socket,the signal array meets PROFIBUS/MPI/PPI standard,as shown in the following table:

Pin	Signal name	Description	Input/Output
1	NC	No use	-
2	NC	No use	-
3	LTG_B	RS485 signal positive	Input/Output
4	RTS_AS	No use	-
5	M5V	RS485 signal ground and 5VDC power ground	Input
6	P5V	Output Voltage, 5VDC/50mA,provide the power for termination resistors.	Output
7	NC	No use	
8	LTG_A	RS485 signal negative	Input/Output
9	RTS_PG	No use	-
Shell	Shielding	Shield ground (chassis ground)	

PROFIBUS/MPI/PPI interface connection cable

There is a pc of 5 m cable attached with the adapter,it's used to connect the USB Adapter CN and PLC,correspond to Siemens 6ES7 901-0BF00-0AA0,as shown below:



Long distance communication

USB Adapter CN power is provided by the USB port, voltage is $+5VDC \pm 15\%$, 150mA, not from RS485 interface of PLC. Thus the adapter can also be used for the other DP/MPI/PPI interfaces without 24VDC power output. Besides the RS485 interface of USB Adapter CN is as same as Siemens CP5611/CP5512, you can insert the profibus connector to achieve the long distance communication, and provide the power for the termination resistors of profibus connector. Different baud rates allowed the largest communication distance meet the PROFIBUS standard, as shown in the following table:

Baud Rate	The largest cable length(Meter)
9.6 to 187.5Kbps	1000
500Kbps	400
1.5Mbps	200



USB Adapter CN use the profibus connectors like CP5611/CP5512

Product Content

USB Adapter CN	1PC
Mounting bracket	1PC
USB connection cable	1PC,2M.
MPI connection cable	1PC,5M.
Driver CD	1PC

Operating System requirement

The following operating system is required on the PC

- Windows 2000
- Windows XP Professional
- Windows XP Home
- Windows Server 2003 Standard Edition
- Windows Vista
- Windows 7

You need to install STEP7 software for S7-300/400PLC, STEP7-Micro/WIN software for S7-200PLC when you use USB Adapter CN to communicate. For other devices like HMI, CNC to communicate, it's also required to install the corresponding application softwares.

Start to use USB Adapter CN

Install driver

After you install STEP7 or STEP7 Micro/WIN etc softwares on the PC, you still need to install the Siemens original PC_Adapter_USB driver, the driver is included in the CD. You also could download the latest version PC_Adapter_USB driver from Siemens website, the link is <http://www.ad.siemens.com.cn/download/docList.aspx?Typeld=5&CatFirst=1&PageIndex=4>

Check whether the USB Adapter CN can work well after you install the driver, right click "My computer" -> Property -> hardware -> device manager, plug the USB Adapter CN in the USB port of PC, device manager will appear a new device as shown in the following red box, which show the hardware and driver work well.



It will appear the “USB” option in the “local connection” of “set PG/PC interface” in the Step7 software after you finish installing the driver, and then choose this USB option.

Set PG/PC interface:

Run STEP7 or STEP7 Micro/WIN software, click “Set PG/PC” button and then it will show the following choice list:

- PC Adapter (Auto) (This option will be shown only after you install the STEP 7)
- PC Adapter (MPI)
- PC Adapter (PPI) (This option will be shown only after you install the 7-Micro/WIN)
- PC Adapter (PROFIBUS)

If it doesn't show the above list, please click "Select..." button to install or remove the interfaces.

Select one interface in the list, click "property", it will appear “USB” option in the “local connection”, choose this “USB” option and then click “OK”.



In the next the connection between USB Adapter CN and DP/MPI/PPI interface of PLC is OK,and you could do the downloading,uploading and monitoring operation.

STEP7 software setting when it communicates with MPI interface of S7-300/400PLC:

Connect USB Adapter CN to MPI interface of S7-300/400CPU.

Enter Step7 software main interface (SIMATIC Manager) ,click “Set PG/PC interface”under “option”menu to enter PG/PC setting interface.

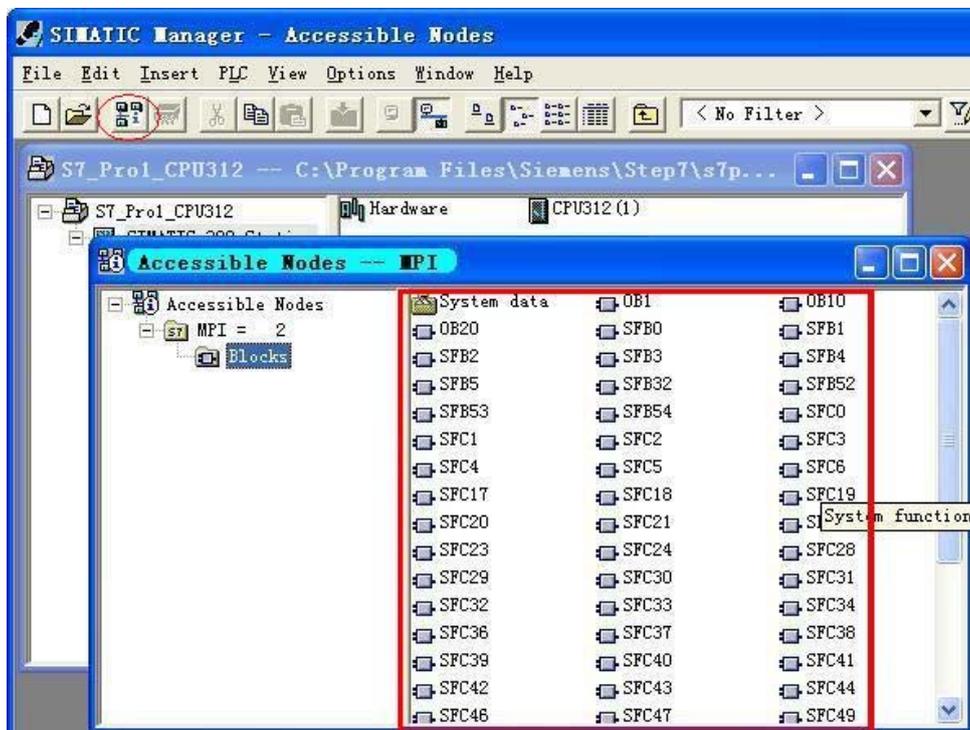
1.Select “PC Adapter (MPI)”, click”property” button to enter MPI interface parameters setting.



2.Click the top “MPI” option,set the adapter MPI interface parameter,choose the baud rate 187.5Kbps or 19.2Kbps or 1.5Mbps,this baud rate must be the same as the PLC MPI interface baud rate.If you don’t know the PLC MPI interface baud rate,you could choose “PC Adapter (Auto) ” to check.Other parameters are default,click “OK” button to return the previous menu,click”OK” to return the main interface.



3. Online test: After USB Adapter CN connects MPI interface of S7-300/400PLC and USB port of PC ,then click the red circled button in the main menu as follows and will appear the data in the red marked frame and show the online test is OK. And now all the settings are finished. Now you can go on the work such as program download and upload, monitoring etc.

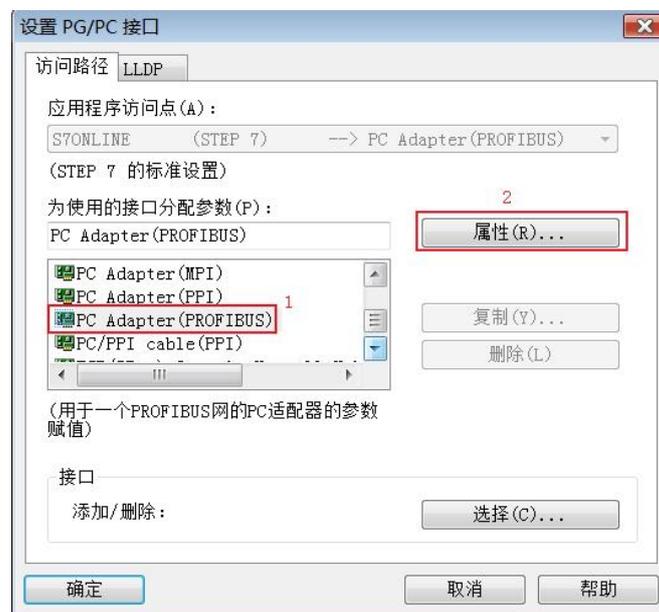


STEP7 software setting when it communicates with PROFIBUS-DP interface of S7-300/400PLC:

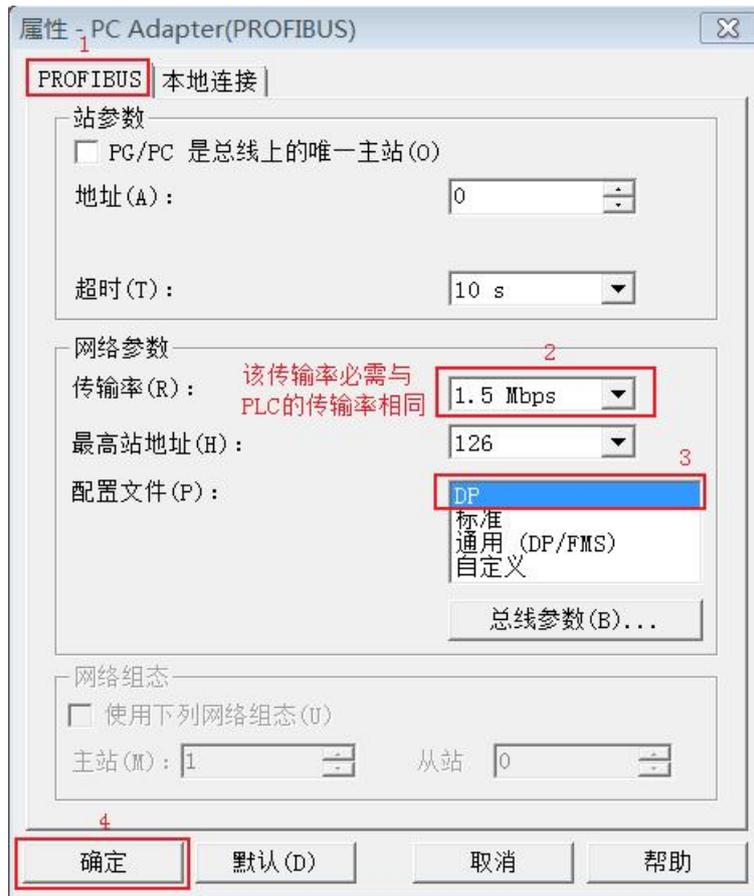
Connect USB Adapter CN to DP interface of S7-300/400CPU.

Enter Step7 software main interface (SIMATIC Manager), click "Set PG/PC interface" under "option" menu to enter PG/PC setting interface.

1. Select "PC Adapter (PROFIBUS)", click "property" button to enter DP interface parameters setting.

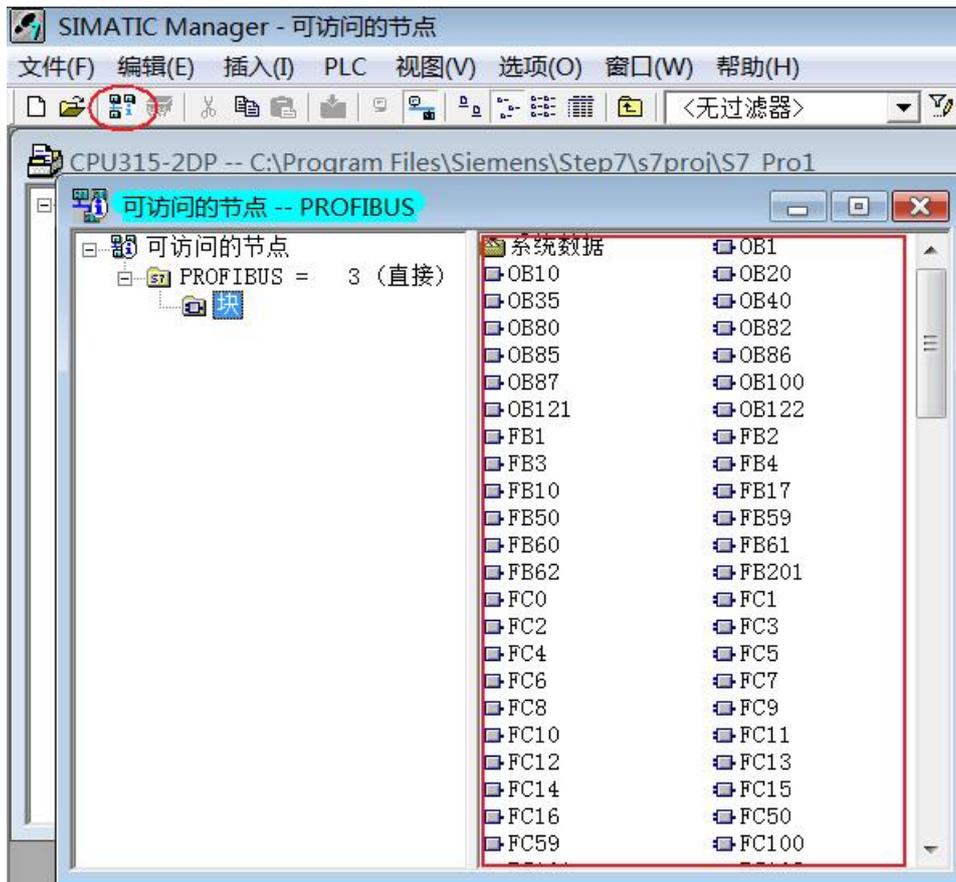


2. Click the top "PROFIBUS" option, set the adapter PROFIBUS interface parameter, the baud rate which you choose must be the same as the PLC PROFIBUS interface baud rate. If you don't know the PLC PROFIBUS interface baud rate, you could choose "PC Adapter (Auto)" to check. Other parameters are default, click "OK" button to return the previous menu, click "OK" to return the main interface.



USB Adapter CN support PROFIBUS-DP/ Standard/ Universal(DP/FMS)/ User-defined

3.Online test: After USB Adapter CN connects DP interface of S7-300/400PLC and USB port of PC ,then click the red circled button in the main menu as follows and will appear the data in the red marked frame and show the online test is OK. And now all the settings are finished. Now you can go on the work such as program download and upload, monitoring etc.



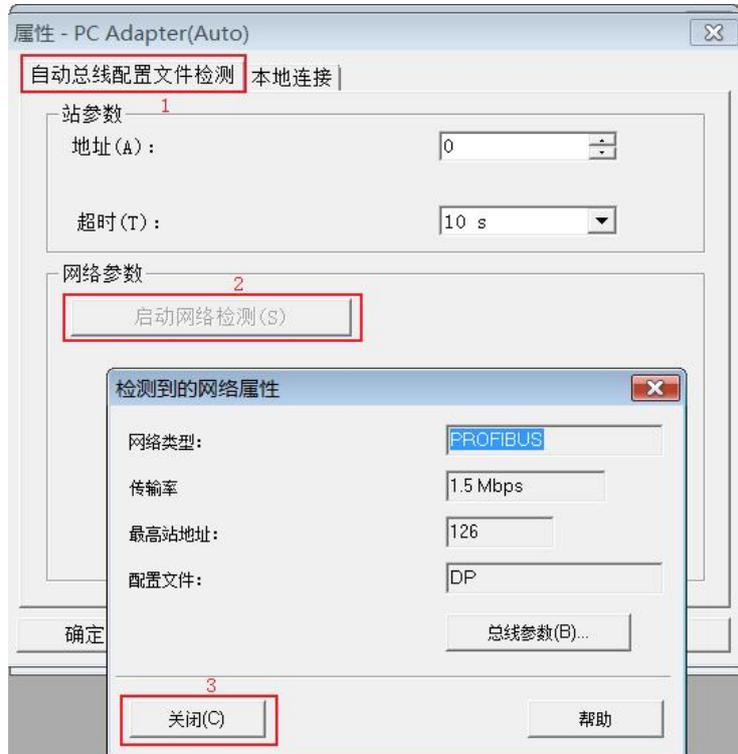
STEP7 software setting when it communicates with S7-300/400PLC using the automatic bus protocol test method:

Whether USB Adapter CN connects the MPI interface or PROFIBUS interface of S7-300/400CPU, you could both use the automatic bus protocol test method to communicate with PLC, this method can automatically test the PLC communication protocol and baud rate etc parameters.

1. Select "PC Adapter (Auto)", click "property" button to enter bus automatic test setting.

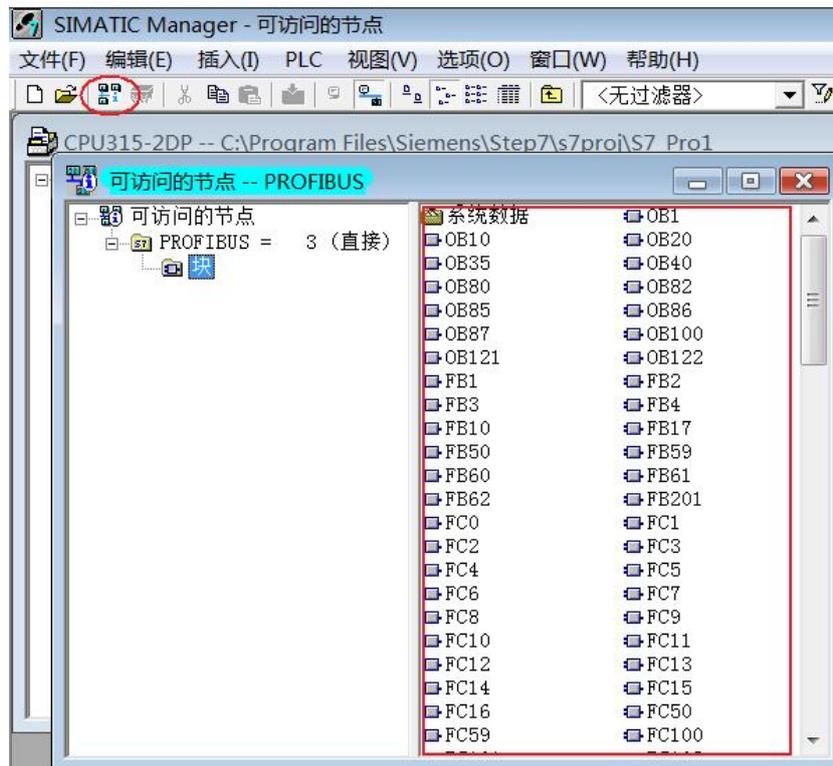


2. Click “start network test” button, then you will get the PLC network type and baud rate etc parameters after several seconds.



3. Online test: click the red circled button in the main menu as follows and will appear the data in the red marked frame and show the online test is OK. And now all the settings are finished.

Now you can go on the work such as program download and upload, monitoring etc.



STEP7 Micro/WIN software setting when it communicates with PPI interface of S7-200PLC:

USB Adapter CN can be used for the communication of Siemens S7-200PLC with multi-master PPI and advanced PPI, like CPU22X series PLC. For the earlier CPU21X series PLC, they can't communicate with USB Adapter CN because they don't support multi-master PPI and advanced PPI.

Connect USB Adapter CN to RS485 interface of S7-200CPU.

Enter STEP7 Micro/WIN software main interface, click the lower left corner "Set PG/PC interface" button to enter the PG/PC setting interface.

1. Select "PC Adapter(PPI)", click "property" button to enter local connection and PPI interface parameters setting.



2. There is only "USB" option in the local connection, you can't change.



3. Click the top "PPI" option, set the adapter PPI interface parameter, the baud rate which you choose must be the same as the PLC baud rate. Other parameters are default, click "OK" button to return the previous menu, click "OK" to return the main interface.

You can see the parameters are fixed advanced PPI and multi-master PPI, you can't change.



4. Online test: After USB Adapter CN connects RS485 interface of S7-200CPU and USB port of PC, click the “communicate” button in the lower left corner of main interface to enter searching PLC interface, double-click “Double-click Refresh” icon, then you can search out the PLC which is connected with USB Adapter CN, Select the PLC and then click “OK” to return the main interface. Now you can go on the work such as program download and upload, monitoring etc.

