Getting Started

For I-7000 Series Modules

Warranty

All products manufactured by ICP DAS are warranted against defective materials for a period of one year from the date of delivery to the original purchaser.

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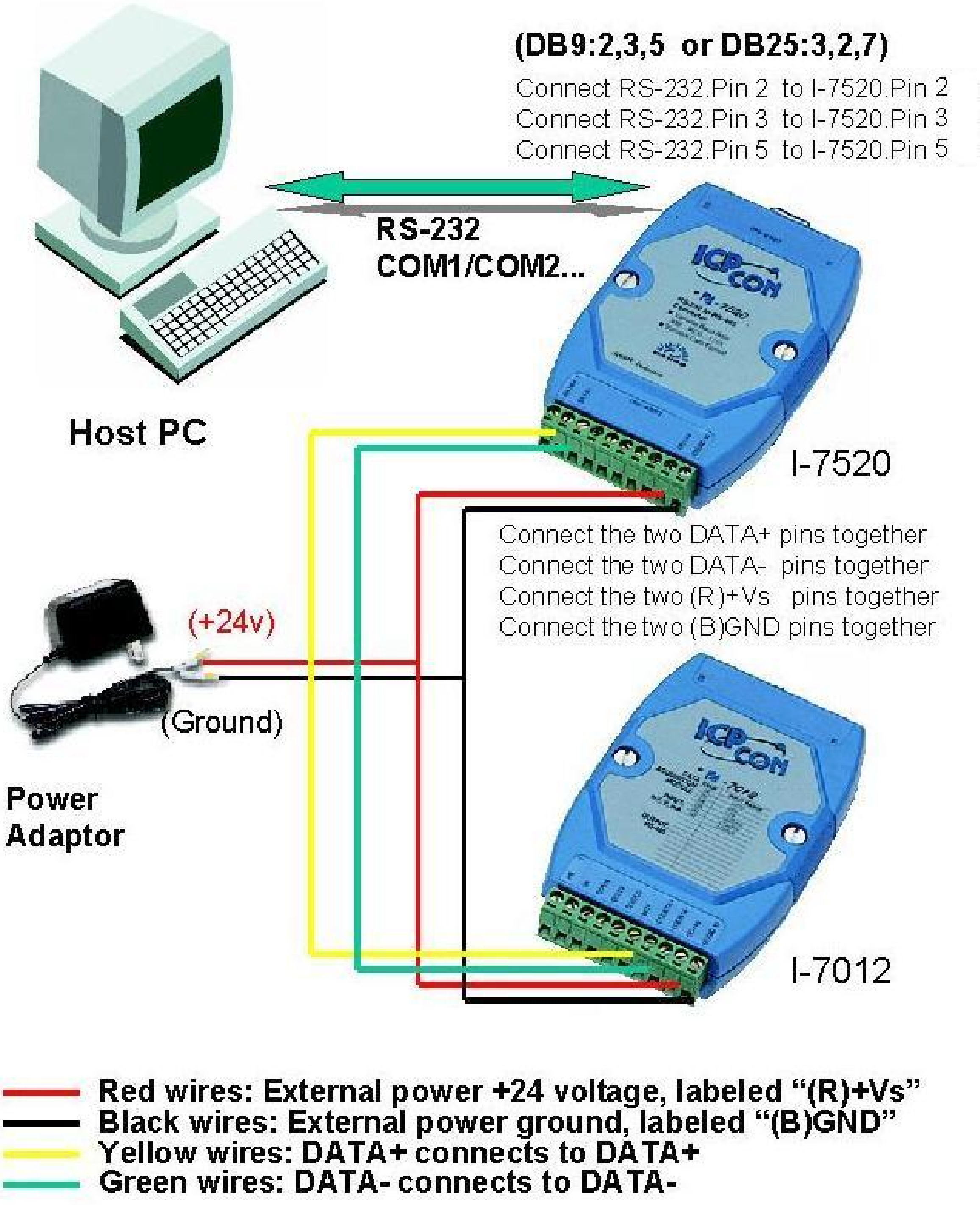
1 Connecting Modules

1.1 Connecting the first module



Connect RS-232.Pin 2 to I-7520.Pin 2
Connect RS-232.Pin 3 to I-7520.Pin 3
Connect RS-232.Pin 5 to I-7520.Pin 5

Connect the two DATA+ pins together
Connect the two DATA- pins together
Connect the two (R)+Vs pins together
Connect the two (B)GND pins together

🟥 Red wires: External power +24 voltage, labeled “(R)+Vs”
■ Black wires: External power ground, labeled “(B)GND”
🟨 Yellow wires: DATA+ connects to DATA+
🟩 Green wires: DATA- connects to DATA-

Figure 1-1-1. Connecting the first module

- Connect the first module as in Figure 1-1-1. (If needed, replace the I-7012 module with your own and follow the diagram.) Please do not connect more than one module at a time.
- Install the 7000 Utility software from the included CD. Please refer to chapter 2 of “The 7000 Utility User’s Manual”.
- Run the 7000 Utility software to search for the user’s modules.

It will automatically start searching when users run the 7000 Utility. Please click the icon ⏸ to stop it. Refer to Figure 1-1-2.

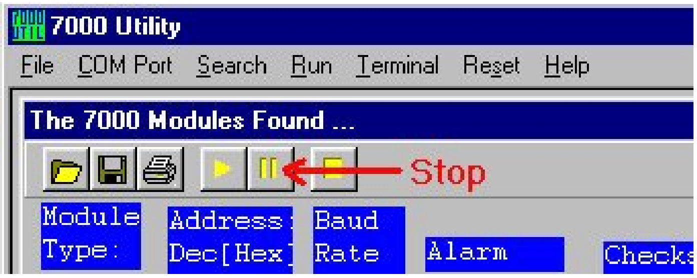
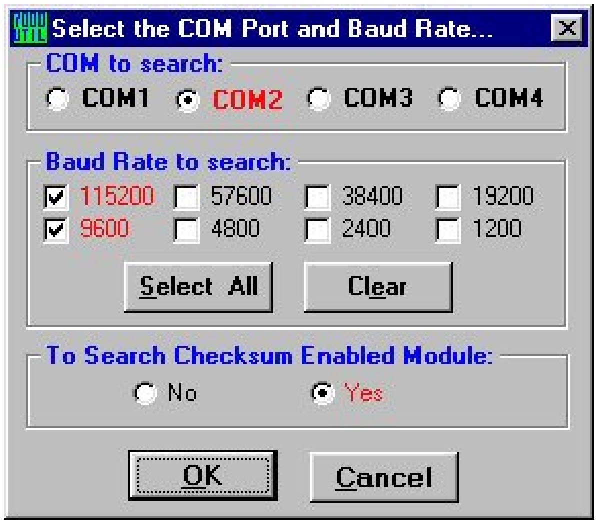


Figure 1-1-2. Stop searching.

Click the menu item “COM Port” to select the COM port number you are connecting to. Select the baud rate “9600” and click the “OK” button. Refer to Figure 1-1-3.



COM to search:

○ COM1 ● COM2 ○ COM3 ○ COM4

Baud Rate to search:

☑ 115200 □ 57600 □ 38400 □ 19200
☑ 9600 □ 4800 □ 2400 □ 1200

To Search Checksum Enabled Module:

○ No ● Yes

Figure 1-1-3. Selecting the COM port and Baud Rate.

After reconfiguring, please click the icon ▶ to search again. See Figure 1-1-4.

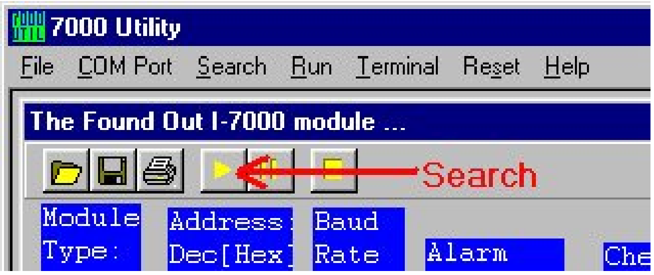
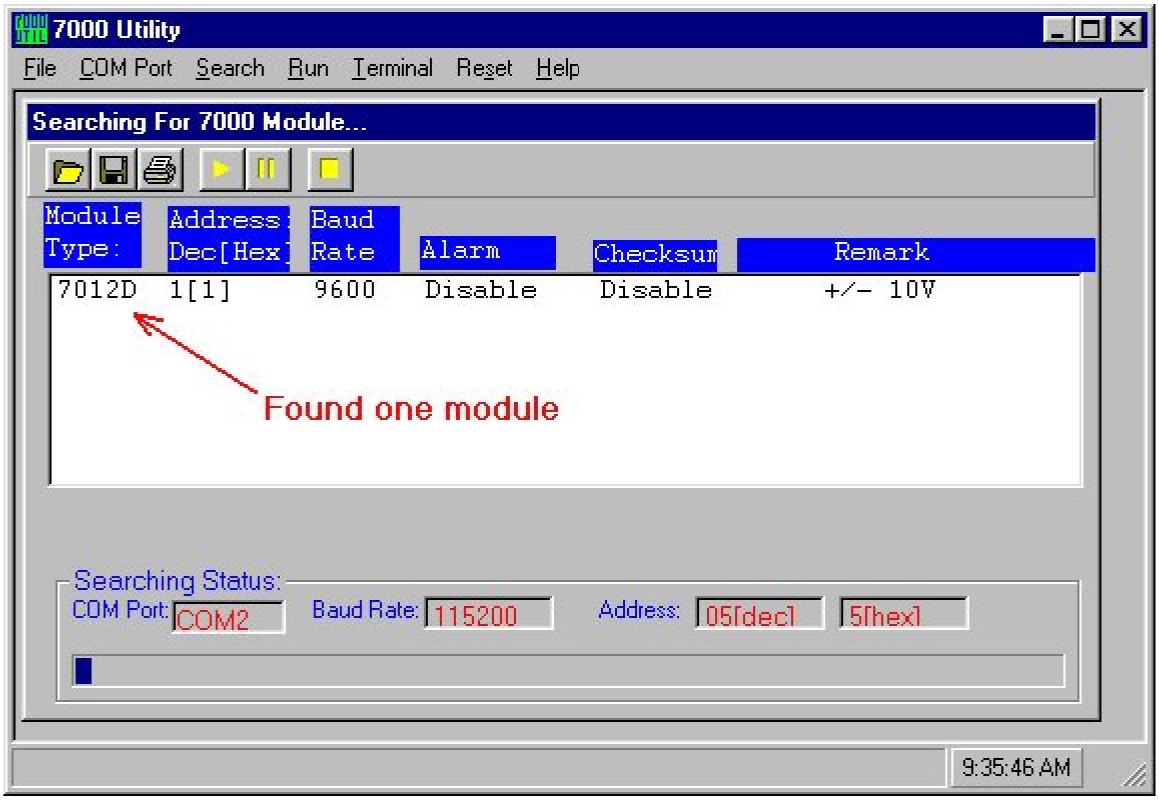

7000 Utility
File COM Port Search Run Terminal Reset Help
The Found Out I-7000 module ...
Search
Module Type:
Address: Dec[Hex]
Baud Rate
Alarm
Che

Figure 1-1-4. Search the modules.

Every module has the following default factory settings:

- Address = 0x01
- Baud rate = 9600
- Checksum = disabled

See Figure 1-1-5. If the 7000 Utility lists the module-ID “xxxx” in the information window, congratulations! You have successfully connected the first module and communicated with it. (Please do not connect more than one module at a time.)


7000 Utility
File COM Port Search Run Terminal Reset Help
Searching For 7000 Module...
Found one module
9:35:46 AM

```
Module  Address:  Baud   Alarm     Checksum   Remark
Type:   Dec[Hex]  Rate
7012D   1[1]      9600   Disable   Disable    +/- 10V
```

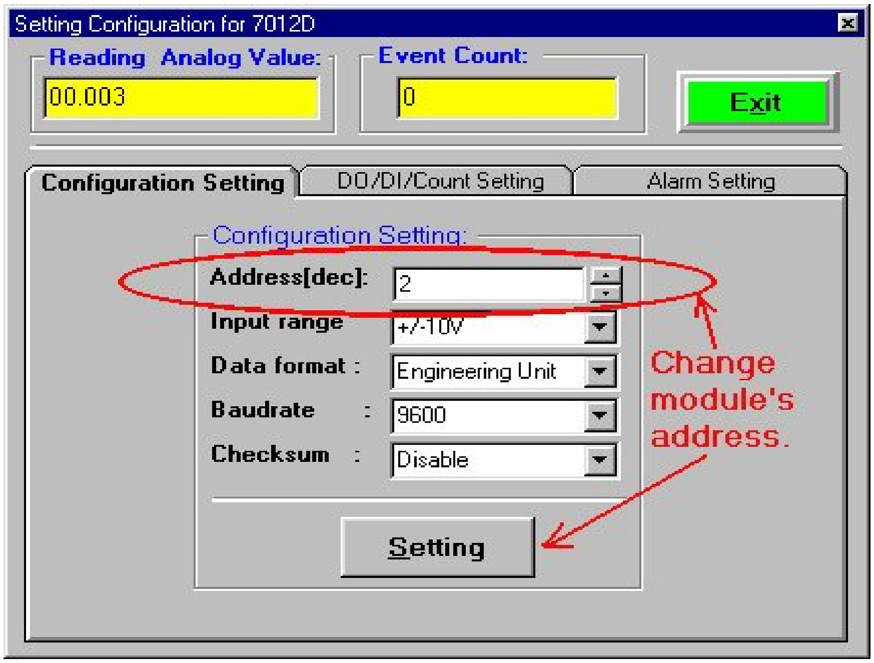
Searching Status:
COM Port: COM2 Baud Rate: 115200 Address: 05[dec] 5[hex]

Figure 1-1-5. Showing the default settings of the module.

1.2 Connecting the second module

If you have two modules in the same RS-485 network and each module has the same address and baud rate; they will conflict with each other.

Due to the factory settings, each module has the same address and baud rate (address=0x01, baud rate=9600). Thus, users have to change the configuration settings for each module to prevent further conflict. To change the configuration on a specified module, double click on the module-ID that is listed in the information window of the 7000 Utility. Refer to figure 1-1-5 and 2-6-4. To add a second module, change the address of the first module to 0x02 and then click on the "Setting" button. Refer to figure 1-2-1.



Setting Configuration for 7012D

Reading Analog Value: 00.003

Event Count: 0

Configuration Setting:

Address[dec]: 2

Input range: +/-10V

Data format : Engineering Unit

Baudrate : 9600

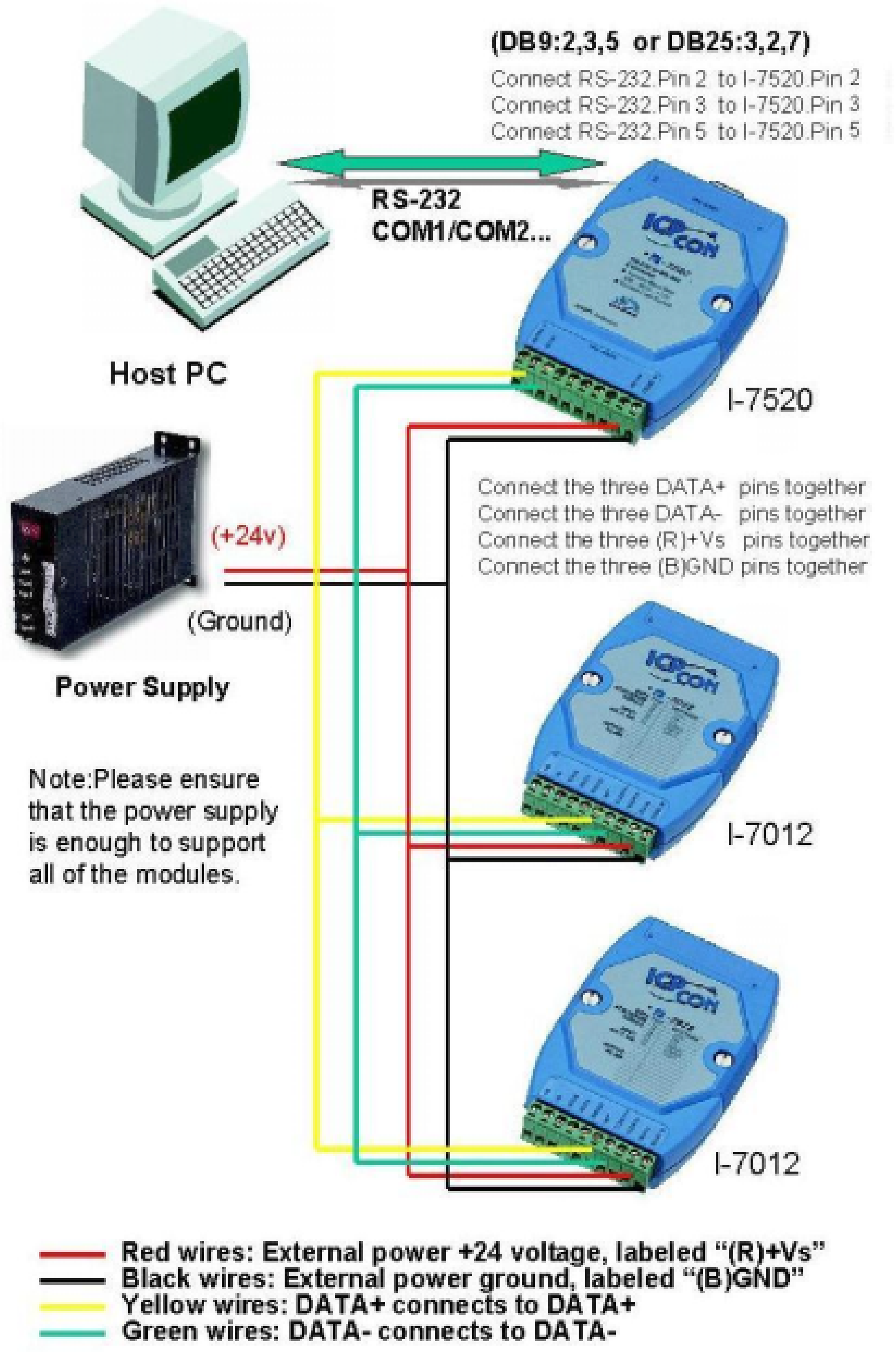
Checksum : Disable

Figure 1-2-1. Changing the configuration settings.

The configuration settings of the first module:
Address: 0x02 Baud rate: 9600 Checksum: disabled

The configuration settings of the second module: (default factory settings)
Address: 0x01 Baud rate: 9600 Checksum: disabled

Now, users can connect the second module. See Figure 1-2-2.



Connect RS-232.Pin 2 to I-7520.Pin 2
Connect RS-232.Pin 3 to I-7520.Pin 3
Connect RS-232.Pin 5 to I-7520.Pin 5

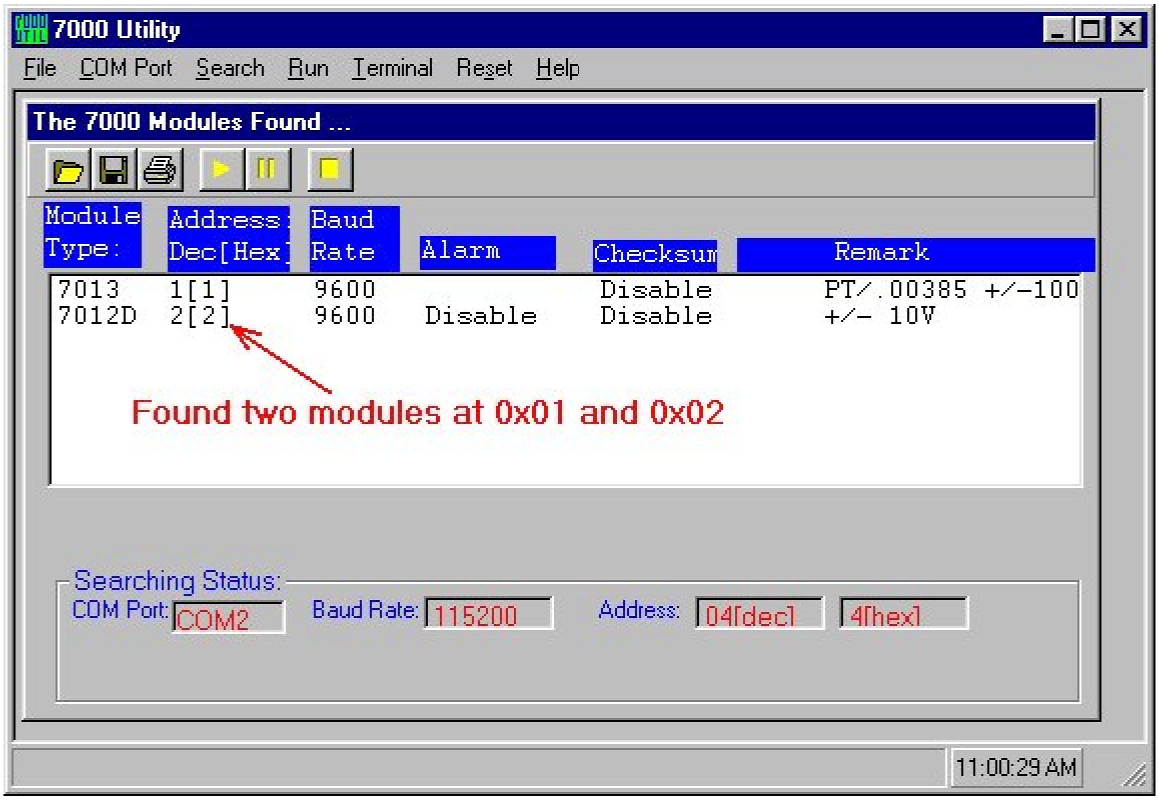
Connect the three DATA+ pins together
Connect the three DATA- pins together
Connect the three (R)+Vs pins together
Connect the three (B)GND pins together

Note:Please ensure that the power supply is enough to support all of the modules.

Red wires: External power +24 voltage, labeled "(R)+Vs"
Black wires: External power ground, labeled "(B)GND"
Yellow wires: DATA+ connects to DATA+
Green wires: DATA- connects to DATA-

Figure 1-2-2. Connecting a second module

Search for the connected module(s) again. Note the two modules at address 0x01 and 0x02 that will be found. See Figure 1-2-3.


7000 Utility
File COM Port Search Run Terminal Reset Help
The 7000 Modules Found ...

Module Type:	Address: Dec[Hex]	Baud Rate	Alarm	Checksum	Remark
7013	1[1]	9600		Disable	PT/.00385 +/-100
7012D	2[2]	9600	Disable	Disable	+/- 10V

Found two modules at 0x01 and 0x02

Searching Status:
COM Port: COM2 Baud Rate: 115200 Address: 04[dec] 4[hex]

11:00:29 AM

Figure 1-2-3. Found two modules at 0x01 and 0x02.

To connect more modules in the same RS-485 network, change the address to prevent further conflict between modules. For example: change the address 0x01 of the second module to address 0x03. Now the configurations of the two modules are as follows:

Module 1: Address:0x02 Baud rate: 9600 Checksum: disabled
Module 2: Address:0x03 Baud rate: 9600 Checksum: disabled

Then connect the third module as in Figure 1-2-4. The configuration of third module contains the following pre-sets:

Module 3: Address:0x01 Baud rate: 9600 Checksum: disabled

Users can connect several modules one-by-one with the above steps. The important thing is that the modules cannot have the same address and baud rate currently used in the same RS-485 network.

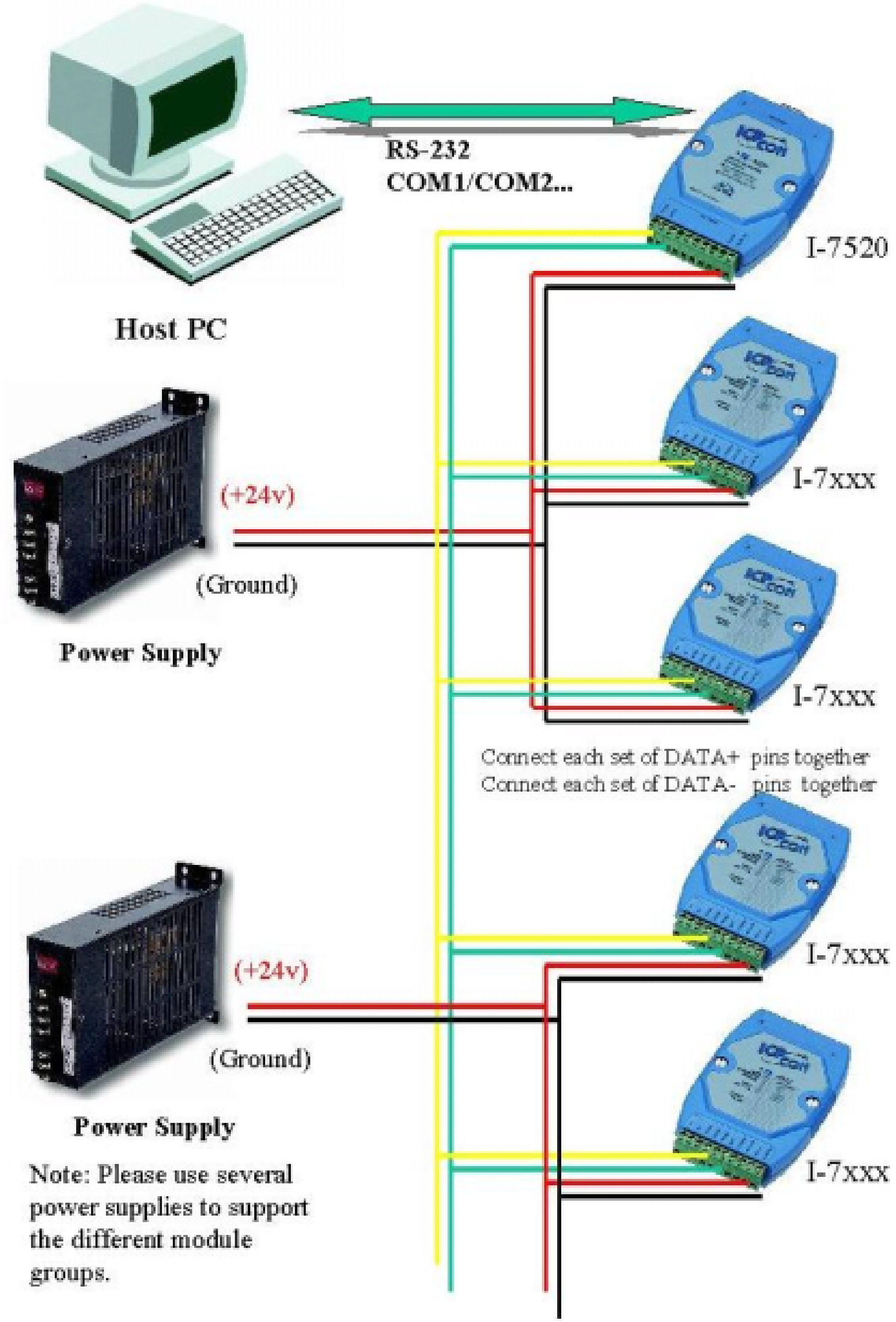

RS-232
COM1/COM2...
I-7520
Host PC
I-7xxx
(+24v)
(Ground)
Power Supply
I-7xxx
Connect each set of DATA+ pins together
Connect each set of DATA- pins together
I-7xxx
(+24v)
(Ground)
Power Supply
I-7xxx
Note: Please use several power supplies to support the different module groups.

Figure 1-2-4. Connecting multiple modules.

2 7000 Utility User’s Manual

- 1.Introduction to the 7000 Utility
- 2.Installating the 7000 Utility
- 3.Uninstalling the 7000 Utility
- 4.Starting the 7000 Utility
- 5.Operating the 7000 Utility
- 6.Changing baud rate and checksum
- 7.Exiting the 7000 Utility

2.1 Introduction to the 7000 Utility

The 7000 Utility is a software utility for the I-7000 series modules. It works in multiple baud rate environments to meet the specifications of the “Self-Tuner” in our I-7000 series modules. The 7000 Utility provides all of the following functions:

- Detects all I-7000 series modules connected to the Host PC.
- Sets the configuration of the I-7000 series modules.
- Executes data input and/or output for every connected I-7000 series module.
- Saves all information for each detected I-7000 series module into a file (with .map extension file name).

Before using the 7000 Utility, please install it first. Please refer to the following contents to complete the installation procedures.

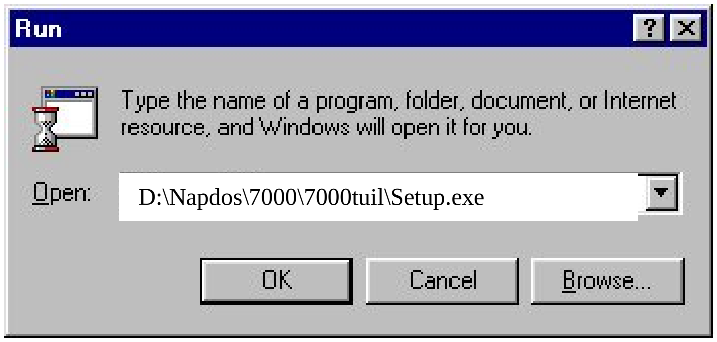
2.2 Installing the 7000 Utility

Before installing, please note and confirm the following requirements:

- Microsoft Windows 95/98/ME/NT4.0/2000/XP Operating System.
- 32 MB RAM Memory.
- 20 MB hard disk available space.

To start the Installation:

- Insert the enclosed CD into the CD-ROM drive.
- Click the “Run” item from the "Start" menu.
- Enter the "[drive]:\NAPDOS\7000\7000Util\Setup.exe" as in Figure 2-2-1.
- Click the “OK” button to start the installation procedures.
- Follow the instructions in the installation procedures until completion.



Type the name of a program, folder, document, or Internet resource, and Windows will open it for you.

Open: D:\Napdos\7000\7000tuil\Setup.exe

Figure 2-2-1. Running "setup.exe" to install the 7000 Utility.

2.3 Uninstalling the 7000 Utility

To uninstall the 7000 Utility software, please follow the following steps:

- Open the "Control Panel" shown in Figure 2-3-1.

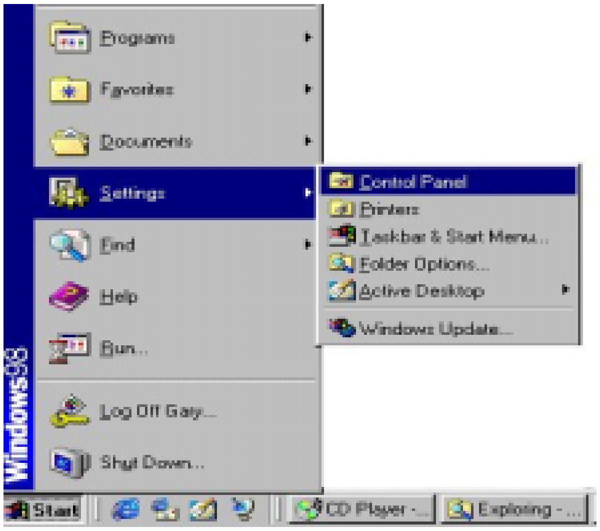
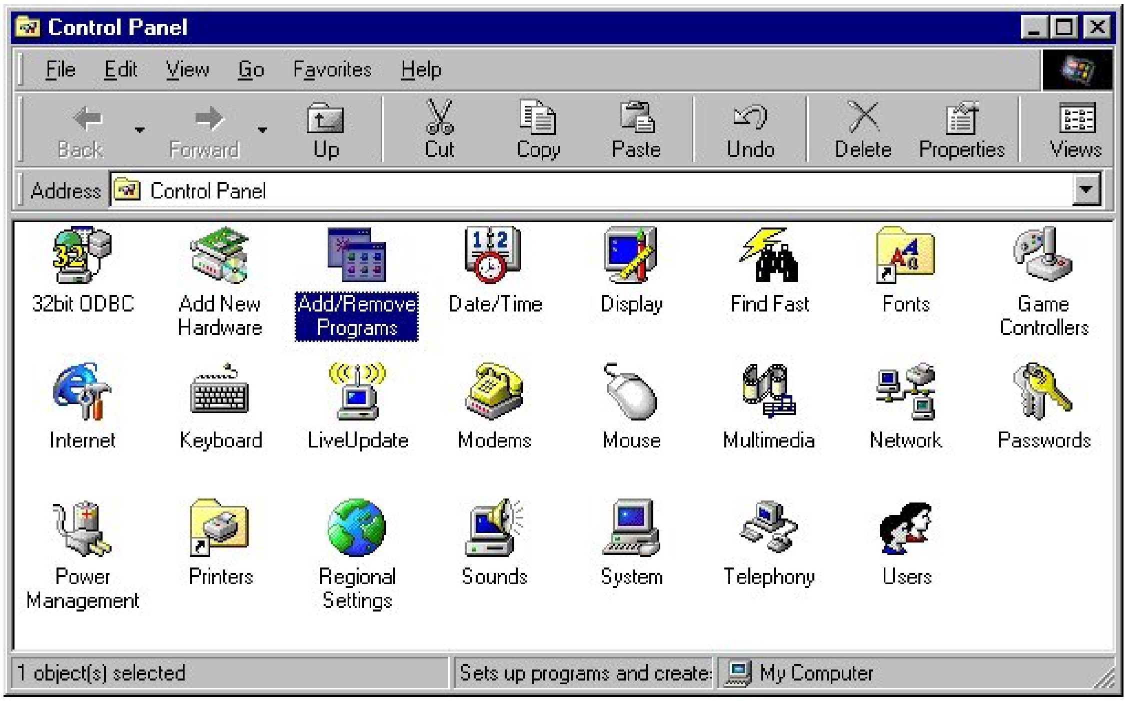


Figure 2-3-1

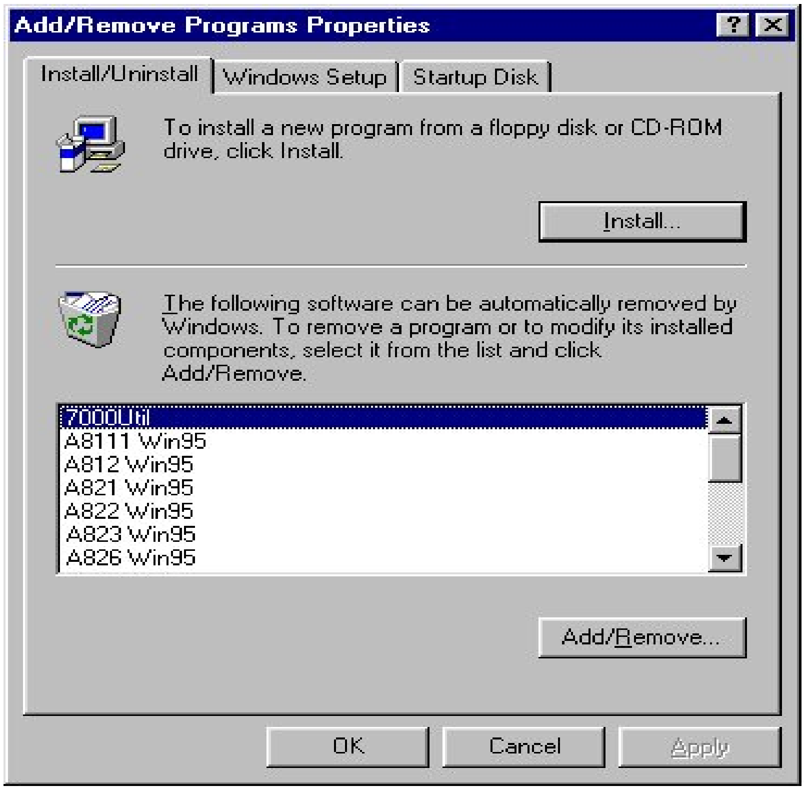
- Click the "Add/Remove Programs" icon from the "Control Panel", as shown in Figure 2-3-2.
- Select the "7000UTIL" item and click the "Add/Remove…" button to uninstall it, as shown in Figure 2-3-3.



1 object(s) selected

Sets up programs and create:

Figure 2-3-2. Double click on the "Add/Remove Programs" icon.



To install a new program from a floppy disk or CD-ROM drive, click Install.

The following software can be automatically removed by Windows. To remove a program or to modify its installed components, select it from the list and click Add/Remove.

7000Util
A8111 Win95
A812 Win95
A821 Win95
A822 Win95
A823 Win95
A826 Win95

Figure 2-3-3. To uninstall the software, select "7000Util" and click on the "Add/Remove" button.

2.4 Starting the 7000 Utility

To start the 7000 Utility, click on “Start / Programs / 7000Util” from the task bar as shown in Figure 2-4-1.

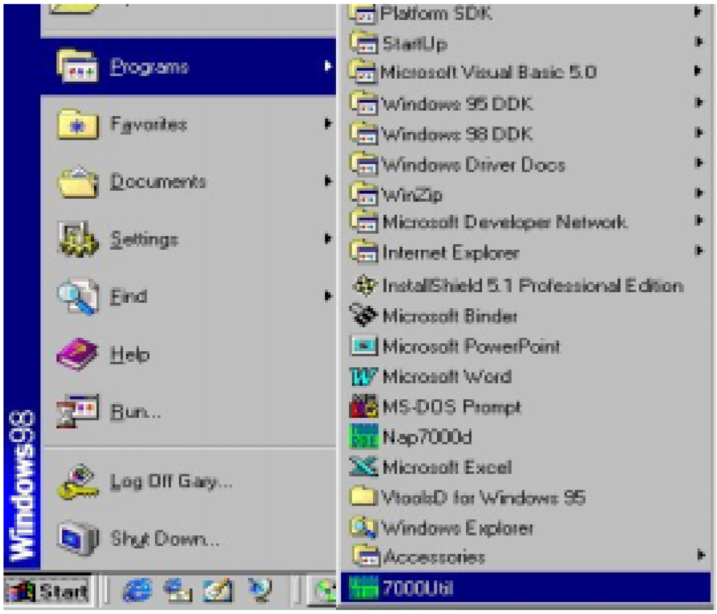


Figure 2-4-1. Click on “7000UTIL” to start.

When the 7000UTIL.EXE is loading, a window will pop up to show the startup picture (Figure 2-4-2). By default, the startup window will stay on-screen for about 3 seconds.

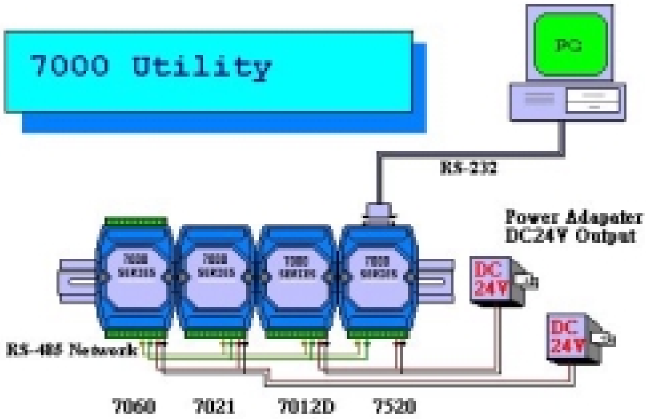


Figure 2-4-2. Startup picture.

During startup, the 7000 Utility reads the “ICPCON.CFG” file to get the COM port, baud rate and checksum information. After startup, the main window of the 7000 Utility comes on and uses this information to automatically start the searching process.

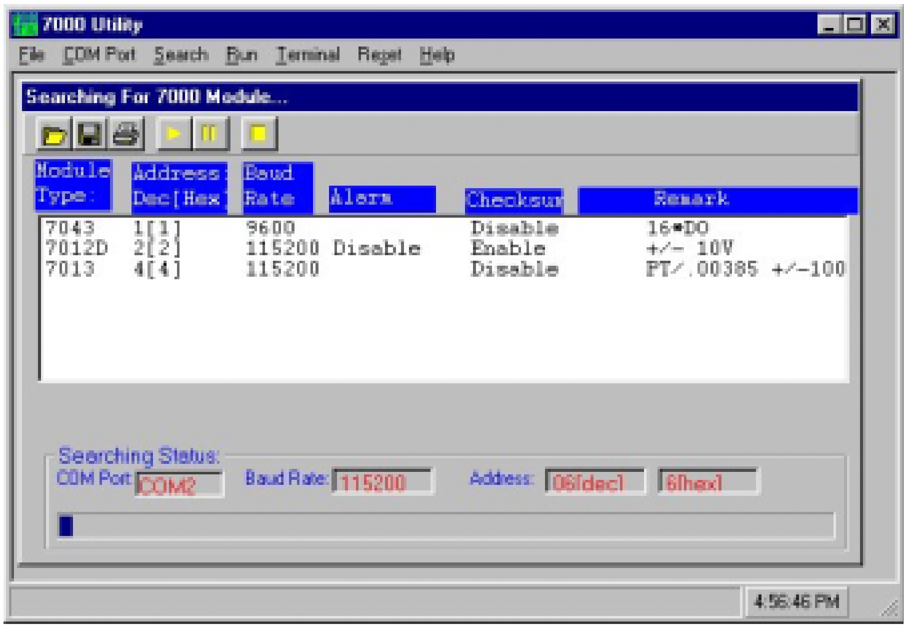
The 7000 Utility tests for a range of COM ports and baud rates in order to search for the connected I-7000 series modules. If it fails to read the “ICPCON.CFG“ file (for example, if it does not exist), the default setting for the COM port is 2, the baud rate is 9600 and checksum is enabled. This means that the search process would be limited to COM2 and the baud rate speed would be 9600.

When quitting the 7000UTIL.EXE, the selected COM port numbers, baud rates and checksum settings are stored into the “ICPCON.CFG” file.

2.5 Operating the 7000 Utility

2.5.1 Main Window of the 7000 Utility

The main window of the 7000 Utility is shown in Figure 2-5-1. All operations of the 7000 Utility are based on this main window.



Searching For 7000 Module...

Module Type:	Address Dec[Hex]	Baud Rate	Alarm	Checksum	Remark
7043	1[1]	9600		Disable	16*DO
7012D	2[2]	115200	Disable	Enable	+/- 10V
7013	4[4]	115200		Disable	PT/.00385 +/-100

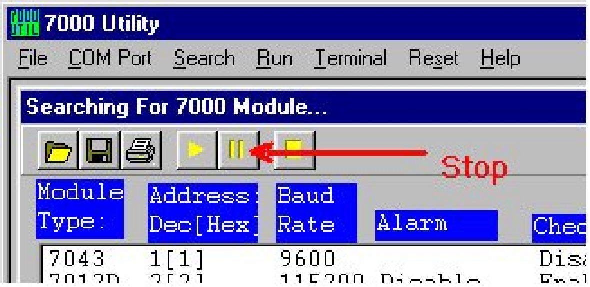
Searching Status:
COM Port: COM2
Baud Rate: 115200
Address: 06[dec] 6[hex]

Figure 2-5-1. The main window of the 7000 Utility

2.5.2 Stopping Search

This section describes how to stop running the program.

When starting the 7000Util.EXE, it will be in the searching process. Users can stop the search process by clicking the stop icon on the tool bar (Figure 2-5-2).



Searching For 7000 Module...

Module Type:	Address Dec[Hex]	Baud Rate	Alarm	Chec
7043	1[1]	9600		Dis

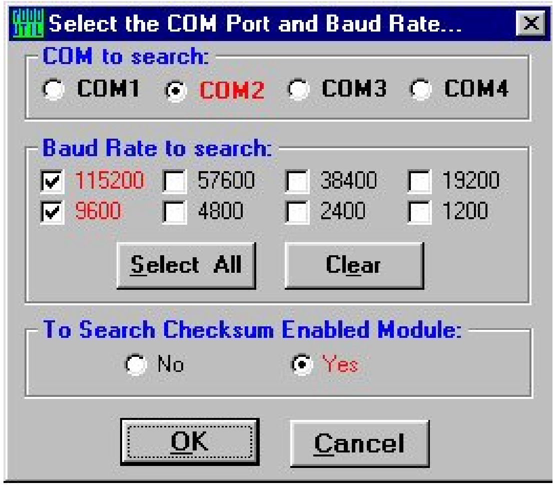
Figure 2-5-2. Stopping the search process.

2.5.3 Assigning COM Port, baud rate and checksum setting for Searching

This section describes how to change the search conditions for COM port, baud rate and checksum status.

Click on the "COM Port" menu item, and a window with the title "Select the COM port and Baud Rate…" appears as in Fig 2-5-3. This window prompts the user to assign the COM port, baud rate and checksum status. After configuration and clicking on the "OK" button, the 7000 Utility starts the searching process again. Any module that meets these conditions will be recognized and shown in the information window.

These settings (include the COM port number, baud rate and checksum) of the search conditions will automatically be stored into the "ICPCON.CFG" when exiting the 7000 Utility.



Select the COM Port and Baud Rate...

COM to search:

○ COM1 ● COM2 ○ COM3 ○ COM4

Baud Rate to search:

☑ 115200 □ 57600 □ 38400 □ 19200

☑ 9600 □ 4800 □ 2400 □ 1200

To Search Checksum Enabled Module:

○ No ● Yes

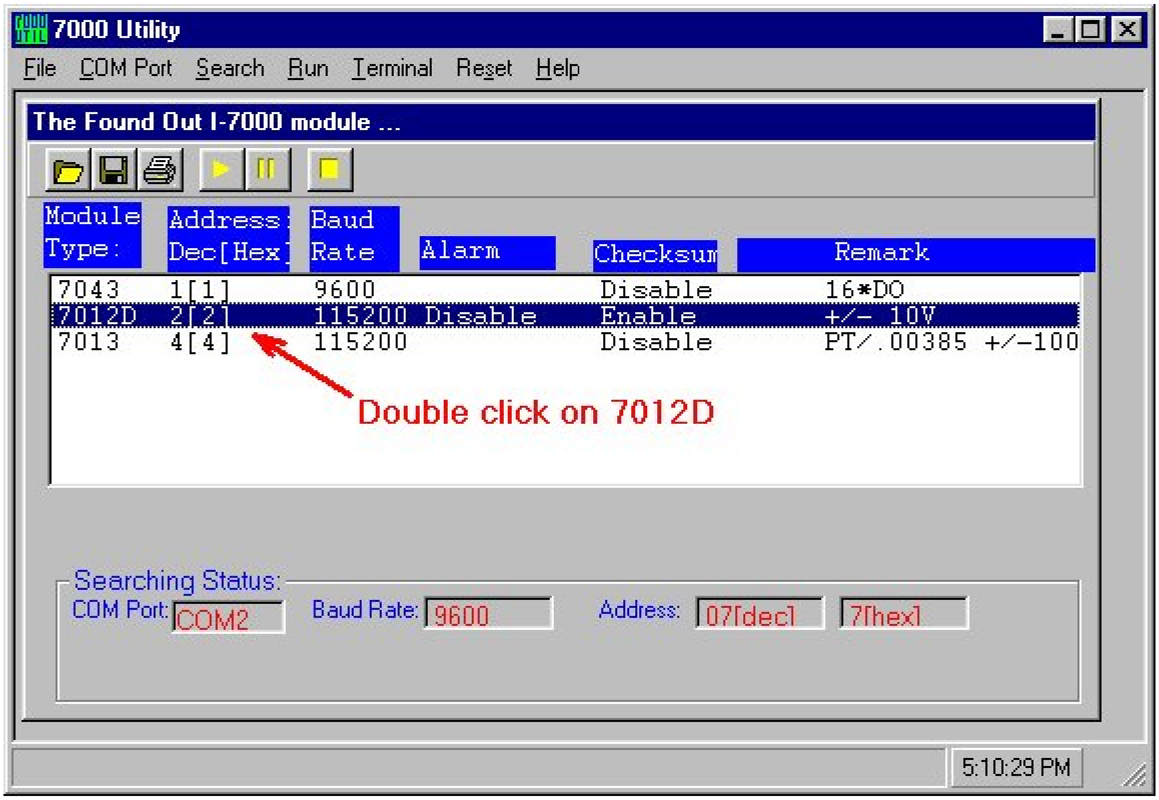
Figure 2-5-3. Assigning the COM port, baud rate and checksum status for the search process.

2.5.4 Invoking the Module Configuration Settings

In order to see the configuration settings of a module, please follow these steps:

- Move the mouse cursor onto the desired module in the information window.
- Double click the left mouse button to reveal the module configuration setting.
- After double clicking, a configuration setting window pops up. Adjust the configuration settings according to the user's demand.

For example, in order to configure the I-7012; double click the 7012 from the list as shown in Figure 2-5-4. Then, a window titled "Setting Configuration for 7012D" pops up as shown in Figure 2-5-5.



The Found Out I-7000 module ...

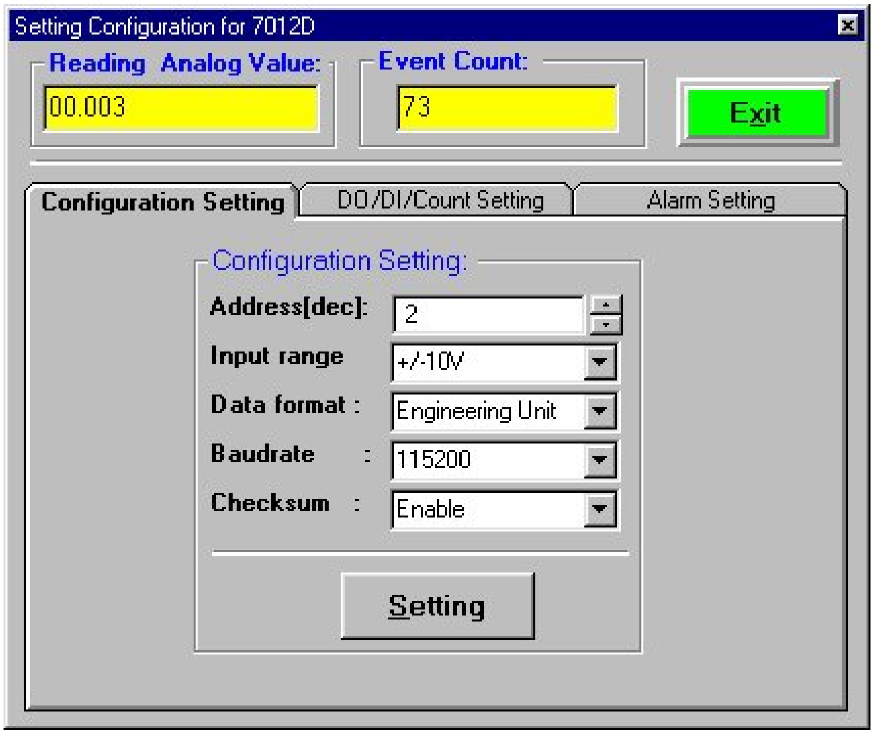
Module Type:	Address: Dec[Hex]	Baud Rate	Alarm	Checksum	Remark
7043	1[1]	9600		Disable	16*DO
7012D	2[2]	115200	Disable	Enable	+/- 10V
7013	4[4]	115200		Disable	PT/.00385 +/-100

Double click on 7012D

Searching Status:
COM Port: COM2 Baud Rate: 9600 Address: 07[dec] 7[hex]

5:10:29 PM

Figure 2-5-4. Showing the configuration settings for the I-7012 module.



Setting Configuration for 7012D

Reading Analog Value: 00.003

Event Count: 73

Configuration Setting:

Address[dec]: 2

Input range +/-10V

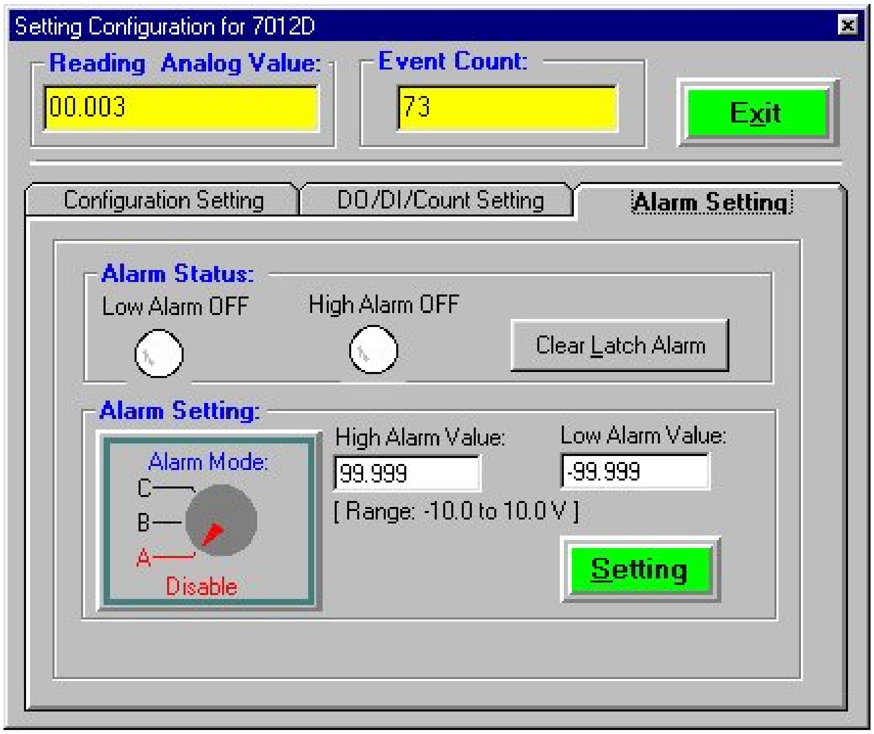
Data format : Engineering Unit

Baudrate : 115200

Checksum : Enable

Figure 2-5-5. The “Setting Configuration for 7012D” window pops up.

To set the High/Low alarm, click the “Alarm Setting” tab as shown in Figure 2-5-6.



Setting Configuration for 7012D

Reading Analog Value: 00.003

Event Count: 73

Alarm Status:

Low Alarm OFF

High Alarm OFF

Alarm Setting:

Alarm Mode: Disable

High Alarm Value: 99.999

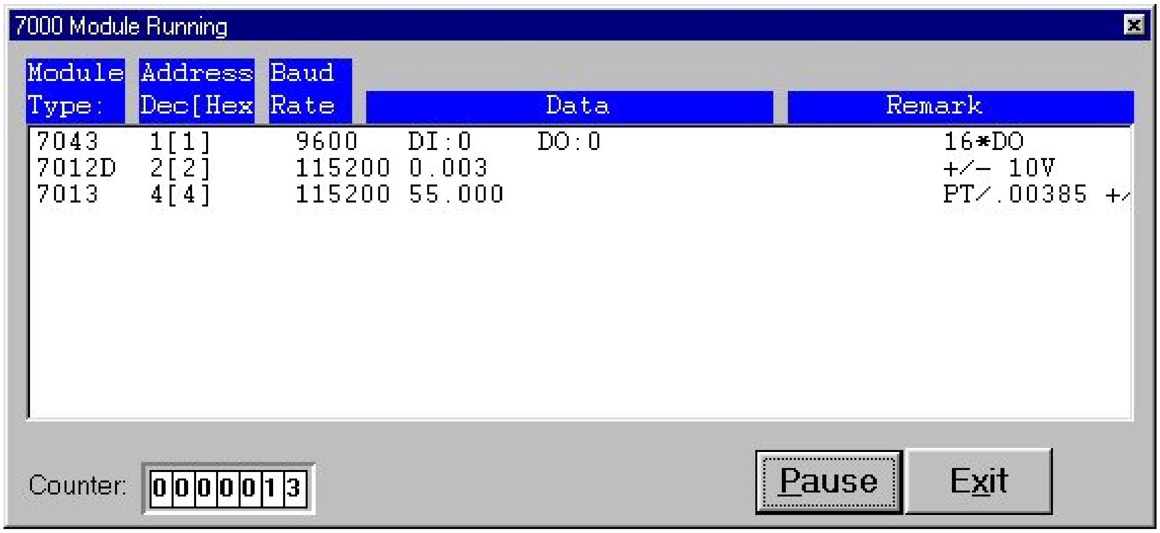
Low Alarm Value: -99.999

[Range: -10.0 to 10.0 V]

Figure 2-5-6 The “Alarm Setting” tabbed page.

2.5.5 Testing for all found modules

In order to test if all of the found modules are working properly, please click on the menu item "Run". Next, the "7000 Module Running" window pops up as shown in Figure 2-5-7.



```
Module  Address  Baud
Type:   Dec[Hex  Rate           Data                 Remark
7043    1[1]     9600    DI:0     DO:0               16*DO
7012D   2[2]     115200  0.003                       +/- 10V
7013    4[4]     115200  55.000                      PT/.00385 +/
```

Figure 2-5-7 The "7000 Module Running" window.

2.5.6 Command Testing for a Module

To send and receive commands, please click the “Terminal / Single Line” menu item. Refer to Figure 2-5-8. If no module is selected, the default baud rate is 9600 and checksum is disabled as in Figure 2-5-9. If a module is selected, then the baud rate and checksum status will be identical to the selected module as in Figure 2-5-10. The screen in Figure 2-5-11 shows sending a command to a specified module.

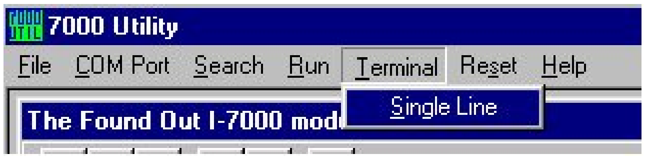
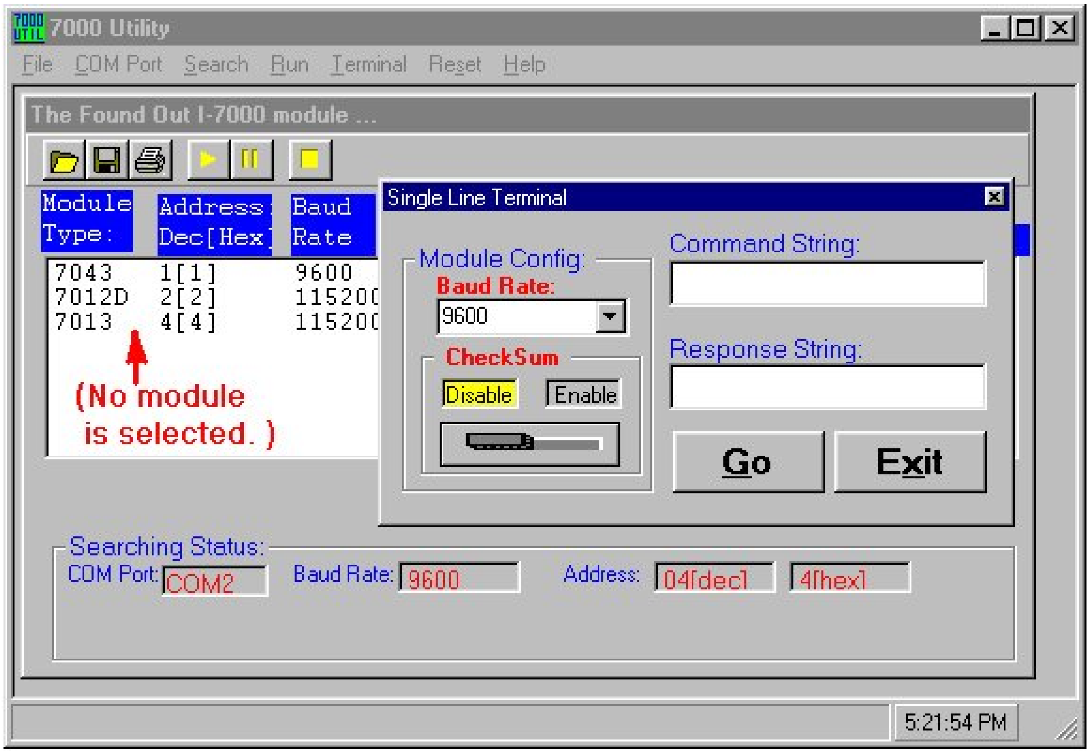


Figure 2-5-8



Module Type:	Address Dec[Hex]	Baud Rate
7043	1[1]	9600
7012D	2[2]	115200
7013	4[4]	115200

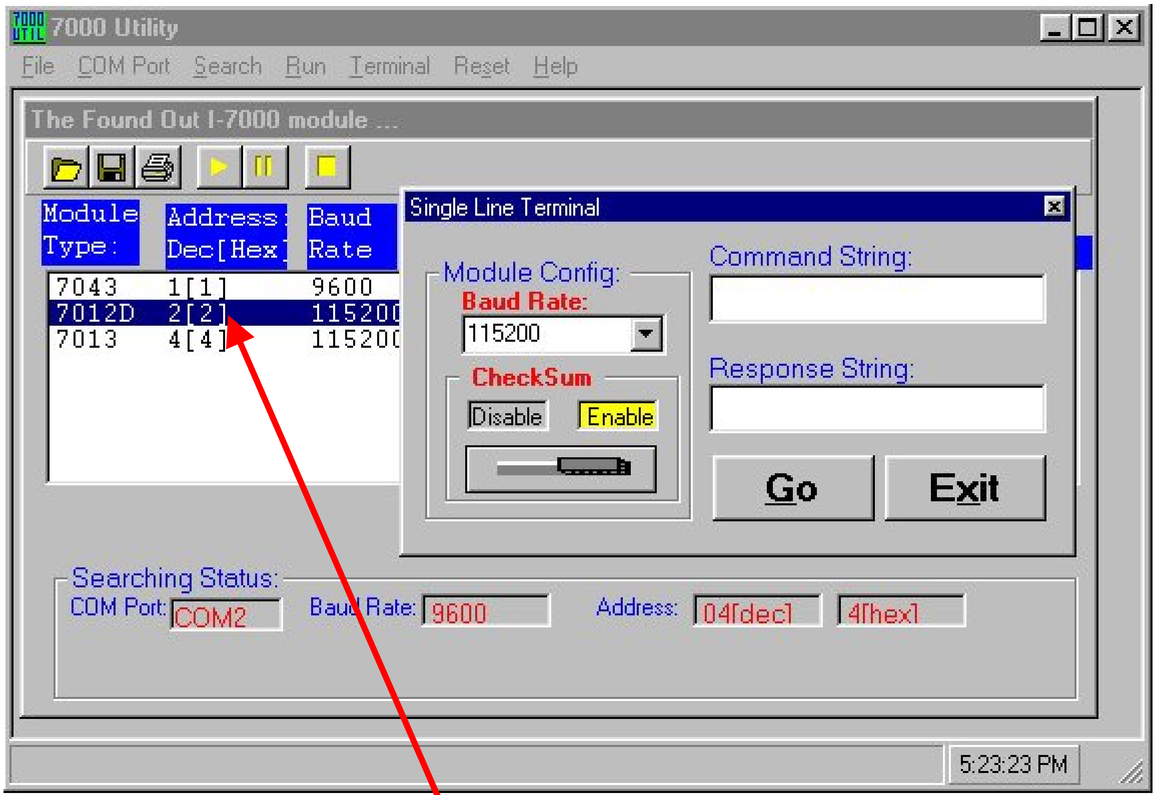
Module Config:
Baud Rate: 9600
CheckSum: [✓ Disable] Enable

Command String:

Response String:

Searching Status:
COM Port: COM2   Baud Rate: 9600   Address: 04[dec] 4[hex]

Figure 2-5-9. No module is selected

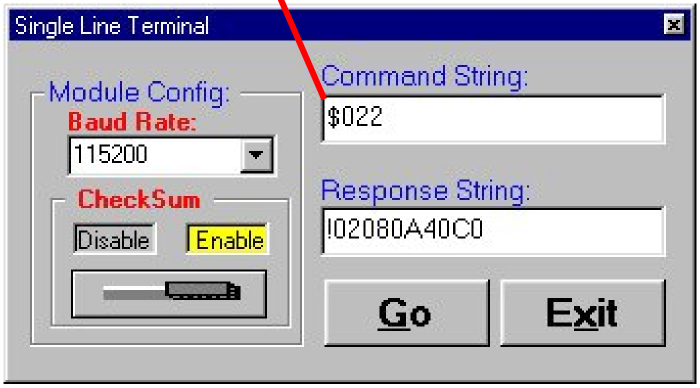


Module Type:	Address: Dec[Hex]	Baud Rate
7043	1[1]	9600
7012D	2[2]	115200
7013	4[4]	115200

Module Config:
Baud Rate: 115200
CheckSum: Disable Enable
Command String:
Response String:

Searching Status:
COM Port: COM2
Baud Rate: 9600
Address: 04[dec] 4[hex]

Figure 2-5-10. A module is selected.



Module Config:
Baud Rate: 115200
CheckSum: Disable Enable
Command String: $022
Response String: !02080A40C0

Figure 2-5-11. Sending a command to the 7012

2.5.7 .MAP File Operation

The configuration information can be stored into a file with the .map extension file name (*.map). This file can be opened or printed out on demand. The menu item ***"Open/Save/Print"*** is shown as Figure 2-5-12. The save operation is used to save the information for discovered modules into a file (for example: "test.map"). Refer to Figure 2-5-13. The screen in Figure 2-5-14 shows opening a stored map file.

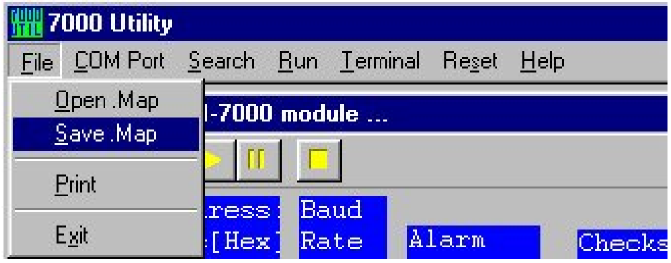


Figure 2-5-12. The "Open/Save/Print" menu item.

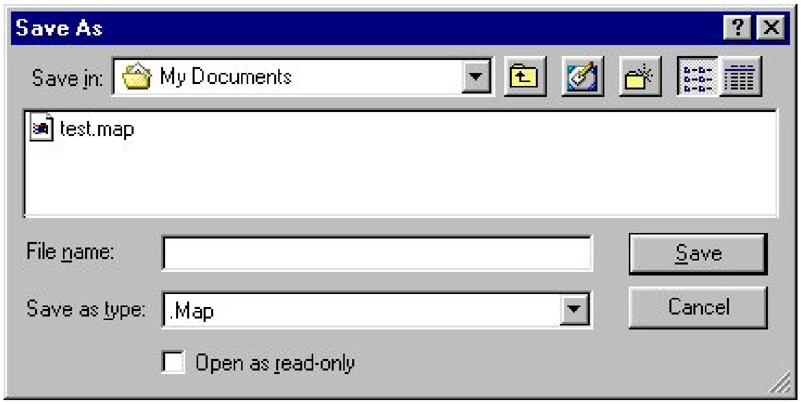


Figure 2-5-13. Saving into a ".map" file.

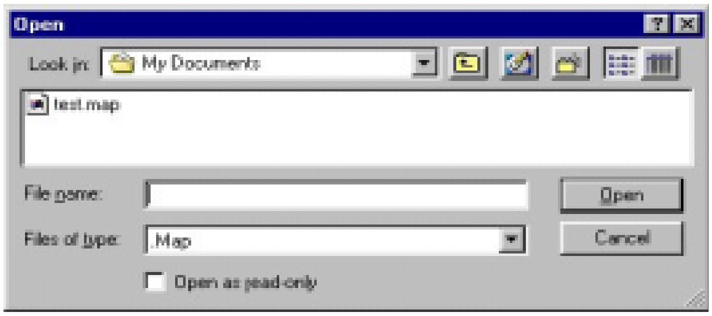


Figure 2-5-14. Opening a ".map" file.

2.6 Changing Baud Rate and Checksum

Before clicking the “Setting” button on the “Setting Configuration for XXXX” window to change either the baud rate or checksum, please refer to Figure 2-5-5. Users have to short the “INIT*” and “GND” pins of this module. Please refer to Figure 2-6-1 ~ 2-6-3.

- Change the baud rate or checksum for the specified module.
- Turn the "INIT*" and "GND" screws counter-clockwise.
- Use a wire to connect the “INIT*” and “GND” of this module. Refer to Figure 2-6-1.

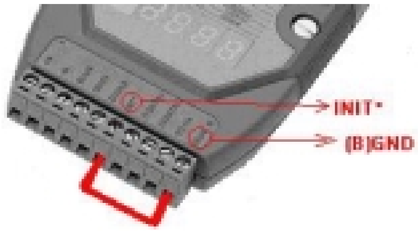
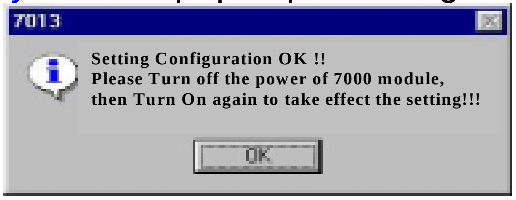


Figure 2-6-1. Using a wire to short the pin of “INIT*” and “(B) GND”.

- Click the “Setting” button.
- Then the 7000 Utility window pops up as in Figure 2-6-2.

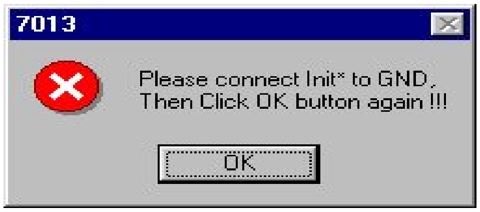

7013

Setting Configuration OK !!
Please Turn off the power of 7000 module,
then Turn On again to take effect the setting!!!

Figure 2-6-2. Setting Configuration OK!!

- Turn off the power supply of this module and then turn it on again.
- Search to ensure that the settings are correct.

A window like the one shown in Figure 2-6-3 indicates failure. Check the "INIT*" and "GND" connections, and then follow the steps listed above. If the Figure 2-6-3 is received again, consult your local distributor.


7013

Please connect Init* to GND,
Then Click OK button again !!!

Figure 2-6-3. The “INIT*” and “GND” do not connect correctly.

2.7 Exiting the 7000 Utility

Please refer to Figure 2-7-1 to quit the 7000 Utility.

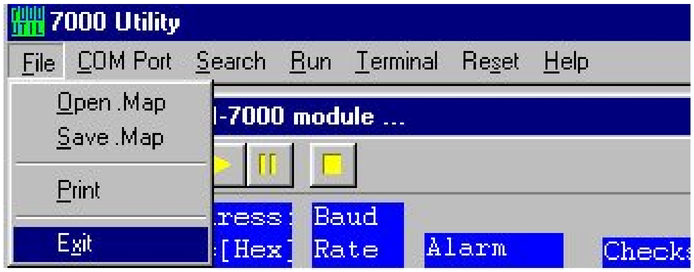
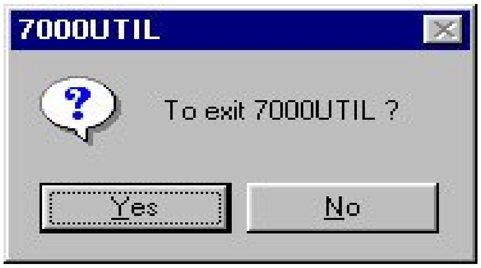


Figure 2-8-1. Exiting the 7000 Utility.

When exiting the 7000 Utility, a window prompt verifies your command as in Figure 2-7-2.



To exit 7000UTIL ?

Figure 2-7-2. Verifying your exit command.

Please click the "**Yes**" button to exit the 7000 Utility.

3 NAP7000P

The **NAP7000P** is a set of standard Win32 DLLs. It is designed for Microsoft Windows 95/98/ME/NT/2000/XP users. VC++, BC++, VB, Delphi and BC++ Builder users can also utilize it with ease. The features of the NAP7000P are as follows:

1. Provides general-purpose send/receive function for the I-7000 series modules.
2. Provides high performance application functions for the I-7000 series modules.
3. Multi-speed (baud rates) demo programs.
4. Multi-data-format demo programs.
5. Lots of demo programs with complete source code.

This chapter will lead you to write your first program with the NAP7000P by using Microsoft Visual Basic 5.0. For Delphi, BCB and VC++ users, please refer to the folder containing demo programs for Delphi, BCB and VC++, respectively.

After installing the NAP7000P, the “I7000.DLL” and “UART.DLL” files will be copied into the user’s system folder as follows :

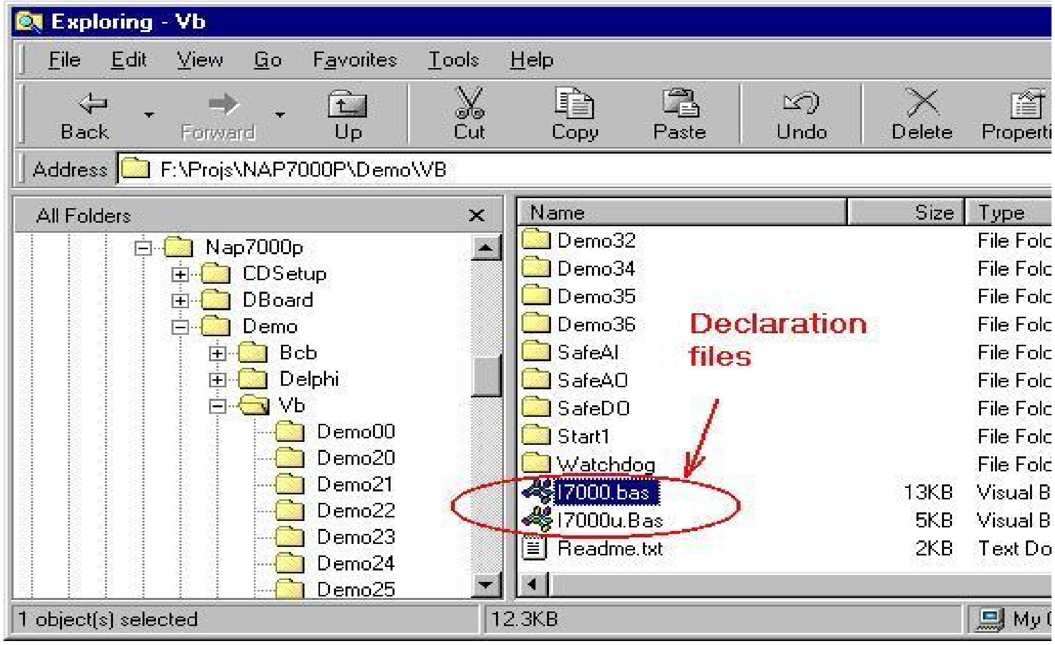
C:\Windows\system (Windows 95/98/ME)
C:\WinNT\System32 (Windows NT/2000/XP)

To use "I7000.DLL" and "UART.DLL" functions, users have to declare the prototype (interface) of these functions. The NAP7000P provides complete "I7000.DLL" and "UART.DLL" declaration files for the VC++, VB, Delphi and BCB development tools. Copy these declaration files into your project folder and include them in this project. Then use these functions as the included standard functions provided by the development tool.

3.1 Writing your first NAP7000P program

Please follow these steps to write your first program :

- **Create a new folder for user’s project files, for example: E:\Test\Start1**
- **Copy the declaration files into user’s project folder. Refer to Figure 3-1-1.**
- **Open Visual Basic 5.0, and select the “Standard EXE” option. Then click the “OK” button. Refer to Figure 3-1-2.**



Address F:\Projs\NAP7000P\Demo\VB

Name	Size	Type
Demo32		File Folc
Demo34		File Folc
Demo35		File Folc
Demo36		File Folc
SafeAI		File Folc
SafeAO		File Folc
SafeDO		File Folc
Start1		File Folc
Watchdog		File Folc
I7000.bas	13KB	Visual B
I7000u.Bas	5KB	Visual B
Readme.txt	2KB	Text Do

1 object(s) selected 12.3KB

Figure 3-1-1. Declaration files for Visual Basic.

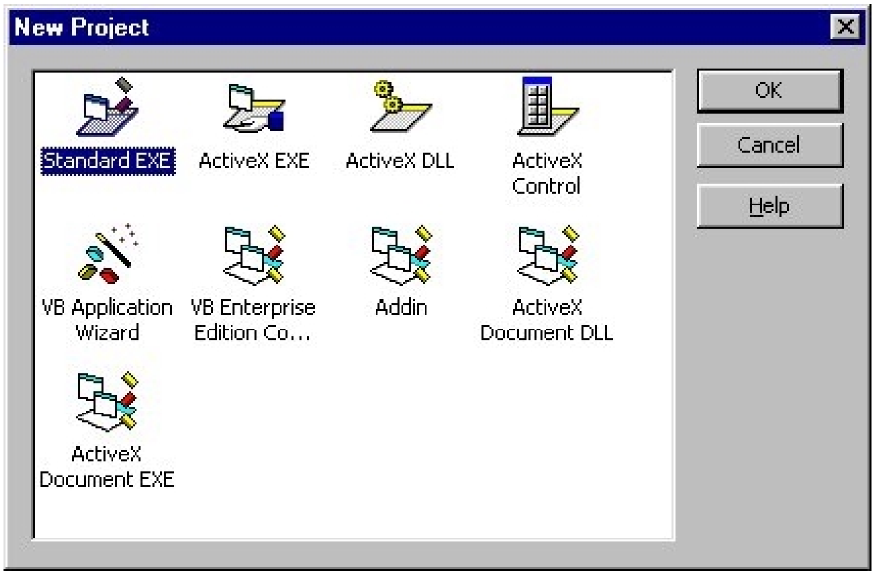


Figure 3-1-2. Select the “Standard EXE"

- Save the project into the folder that you previously created. Refer to Figure 3-1-3 to 3-1-5.

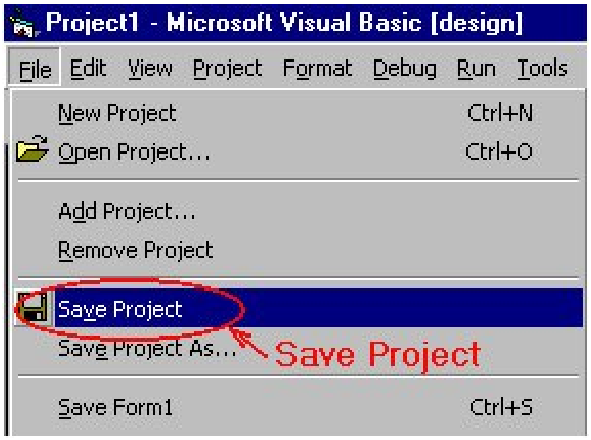
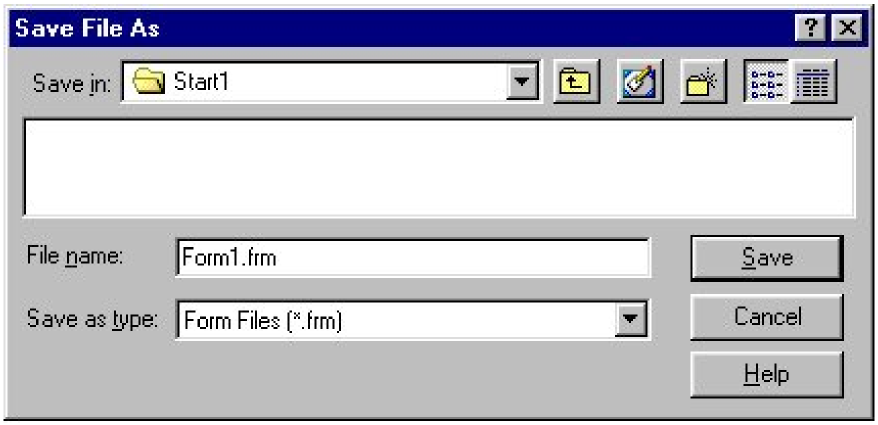


Figure 3-1-3. Saving Project

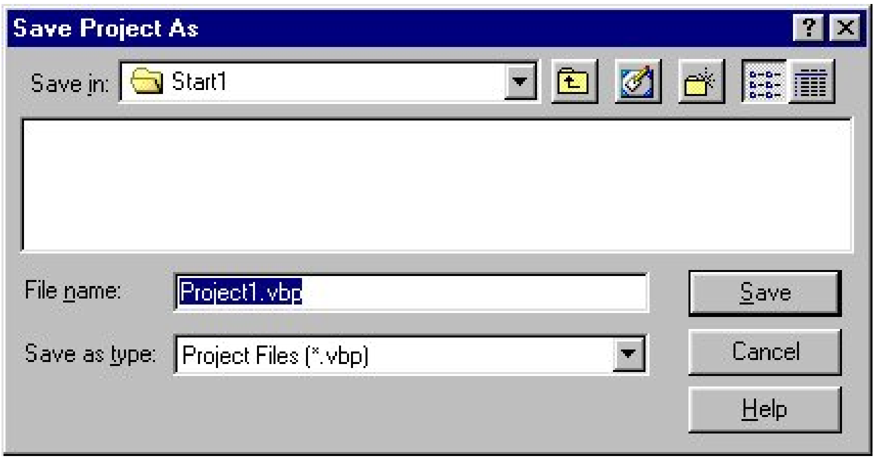


Save in: Start1

File name: Form1.frm

Save as type: Form Files (*.frm)

Figure 3-1-4. Saving "form1"



Save in: Start1

File name: Project1.vbp

Save as type: Project Files (*.vbp)

Figure 3-1-5. Saving "Project1".

- Right mouse button click on the Project manager, and select "Add"/"Module". Refer to Figure 3-1-6.

- After the "Add Module" window pops up, select the tab page "Existing" and change to the folder that contains the user's project files. Then add these declaration files. Refer to Figure 3-1-7.

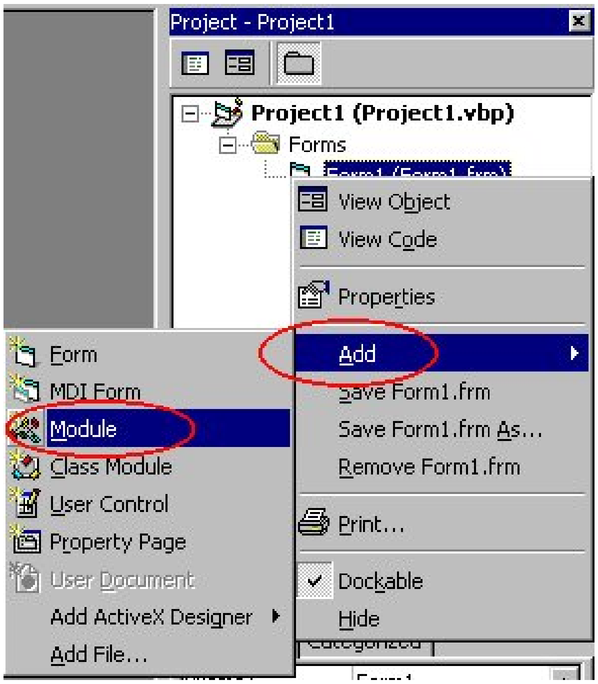
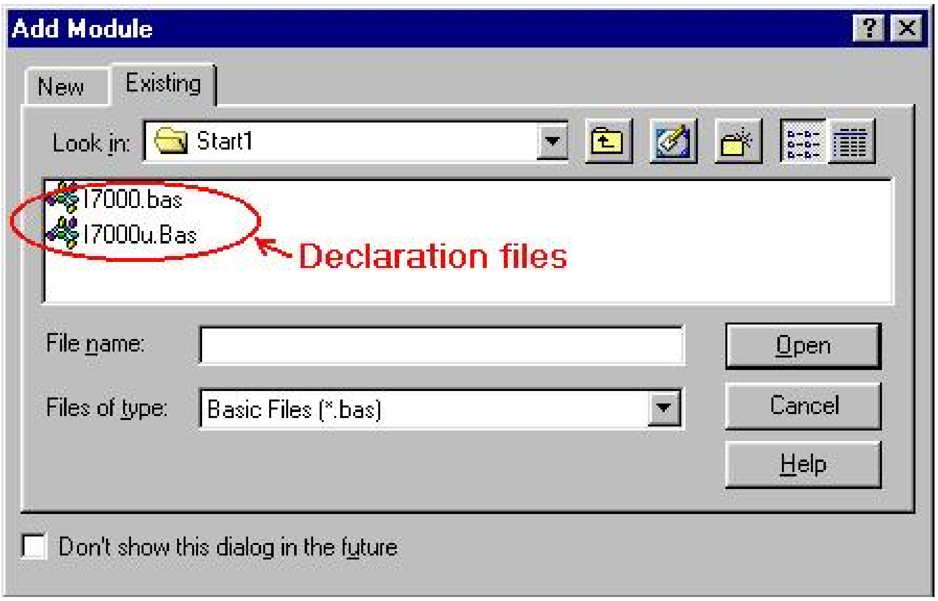


Figure 3-1-6. Adding Module



Look in: Start1

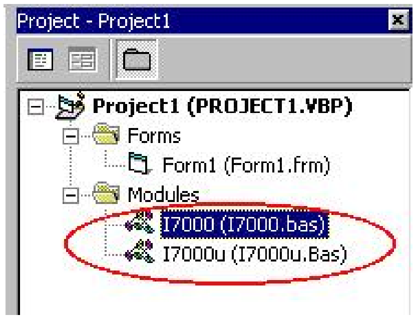
Declaration files

File name:

Files of type: Basic Files (*.bas)

□ Don't show this dialog in the future

Figure 3-1-7. Adding the declaration files



Project - Project1

Project1 (PROJECT1.VBP)
  Forms
    Form1 (Form1.frm)
  Modules
    I7000 (I7000.bas)
    I7000u (I7000u.Bas)

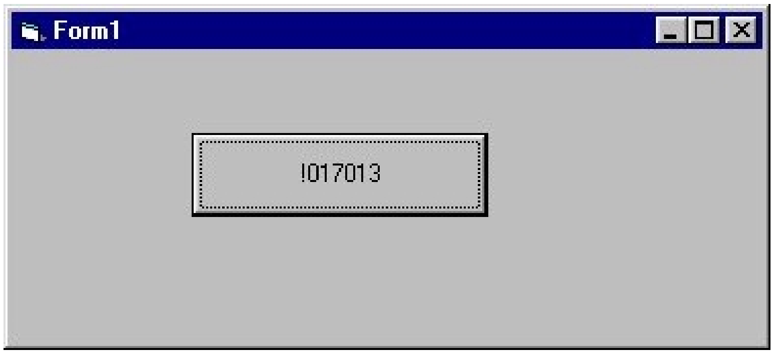
Figure 3-1-8. Declaration files have been added into this project.

- Put a "CommandButton" control on "Form1" of this program. Add the following codes in the sub routine "Command1_Click() " :

```
Private Sub Command1_Click()
        Dim wt As Integer

        Port = 2
        Open_Com Port, 9600, 8, 0, 0
        SendTo7000 = "$01M"
        ReceiveFrom7000 = Space(100)
        Send_Receive_Cmd Port, SendTo7000, ReceiveFrom7000, 100, 0, wt
        Command1.Caption = ReceiveFrom7000
        Close_Com Port
End Sub
```

- Run the program and click on the "Command1" button. The caption of the "Command1" button will be changed to "!01xxxx". The "!" is "OK". The "01" means "address at 0x01". The "xxxx" is the module-ID. Refer to Figure 3-1-9.



Form1

!017013

Figure 3-1-9. The module returns "!01xxxx".

- These codes are described as follows :

```
‘Declare a variable which has the Integer data type.
Dim wt As Integer

‘Specify the COM port number that the user is currently using
Port = 2

‘Call the function “Open_Com”
‘the parameters are COM Port number: 2, Baubrate: 9600,
‘DataBits: 8, ParityBit: 0(None parity bit), StopBits: 0(One stop bit)
Open_Com Port, 9600, 8, 0, 0

‘Use this command “$01M” to get the module name at address 0x01
SendTo7000 = "$01M"

‘Declare a space to store the string of returned value
ReceiveFrom7000 = Space(100)

‘Call the function “Send_Receive_Cmd”
‘Parameters are Command String, Returned String,
‘Timeout value: 100(0.1 second) , Checksum: 0(disabled)
‘wt: will report the time has been used for this command
Send_Receive_Cmd Port, SendTo7000, ReceiveFrom7000, 100, 0, wt

‘Use the caption of “Command1” button to show the returned value
Command1.Caption = ReceiveFrom7000

‘Close the COM port
‘Parameter is COM port number that the user opened previously.
Close_Com Port
```

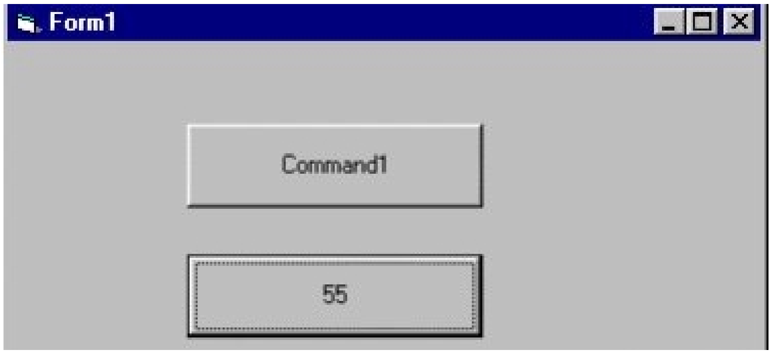


Figure 3-1-10. Use function “AnalogIn” to get the analog input value

- Put the second “CommandButton” control on the “Form1” of this program. Add following codes in the subroutine “Command2_Click()” :

```
Private Sub Command2_Click()
        Port = 2                          'Use COM2
        'Open COM Port with Baud Rate 9600, 8 DataBits,
        ‘None Paritybits , One stop bit
        Open_Com Port, 9600, 8, 0, 0
        SendTo7000 = Space(100)           'Declare the buffer
        ReceiveFrom7000 = Space(100)      'Declare the buffer
        w7000(0) = Port                   'COM port in use
        w7000(1) = 1                      'Module Address at 0x01
        w7000(2) = &H7013                 'Module ID is 0x7013
        w7000(3) = 0                      'Checksum 0:disabled
        w7000(4) = 100                    'Timeout value is 0.1 second

        'Call the function "AnalogIn" to get the value from module
        'Parameters are w7000(0), f7000(0),
        '               SendTo7000, ReceiveFrom7000
        AnalogIn w7000(0), f7000(0), SendTo7000, ReceiveFrom7000

        'Use the caption of "Command2" button to show the value
        Command2.Caption = f7000(0)
        'Close the COM port that the user open previously
        Close_Com Port
End Sub
```

- Run the program and click the “Command2” button. The caption of “Command2” button will show the analog input value from the module. Refer to Figure 3-1-10.

For the first program, it has not processed the returned value of each function. In normal applications, users have to get the returned value and process it. For detailed descriptions of every function, please refer to the NAP7000P user’s manual. The NAP7000P software package provides the user’s manual in .pdf format (or HTML format).

In the NAP7000P software package, many demo programs are provided for the VC++, VB, Delphi and BCB. It contains the complete source code for the demo programs.

4 NAP7000X

The NAP7000X is an ActiveX Control (OCX) for the I-7000 series module. It enables you to develop programs quickly and easily. Before using the NAP7000X, users must install it. Please refer to the NAP7000X user's manual.

This chapter will teach you to write your first NAP7000X program by using Microsoft Visual Basic 5.0.

After installation, the "I7000.DLL", "UART.DLL", "I7000.TLB" and "I7000.OCX" files will be copied into the user's system folder as follows :

C:\Windows\system (Windows 95/98)
C:\WinNT\System32 (Windows NT/2000/XP)

4.1 Writing your first NAP7000X program

Please follow these steps :

- Open Visual Basic 5.0. Select the "Standard EXE" option, and then click the "OK" button. Refer to Figure 4-1-1.

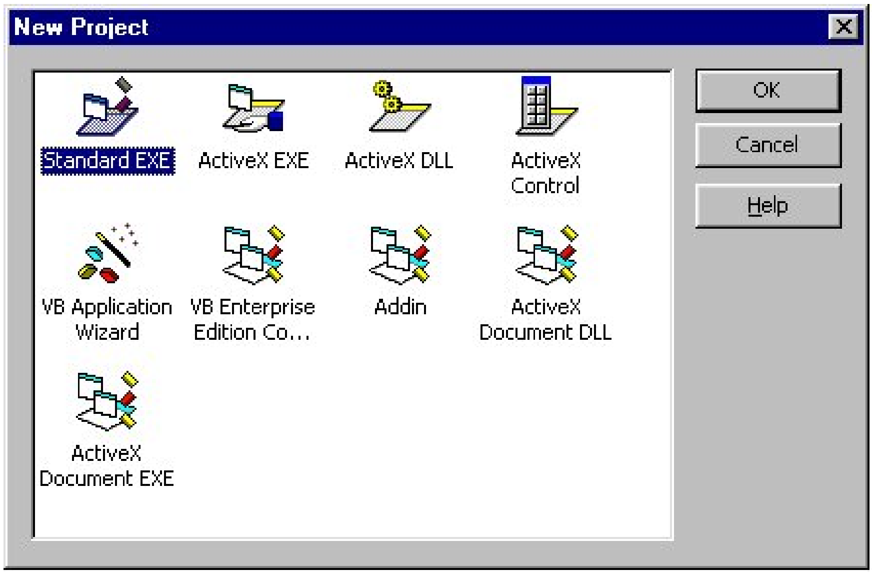


Figure 4-1-1. Select the "Standard EXE"

- Adding the "7000OCX" into user's project file. Refer to Figure 4-1-2 to 4-1-3.

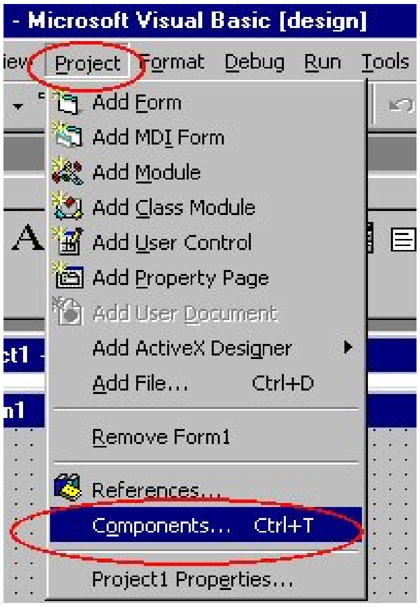
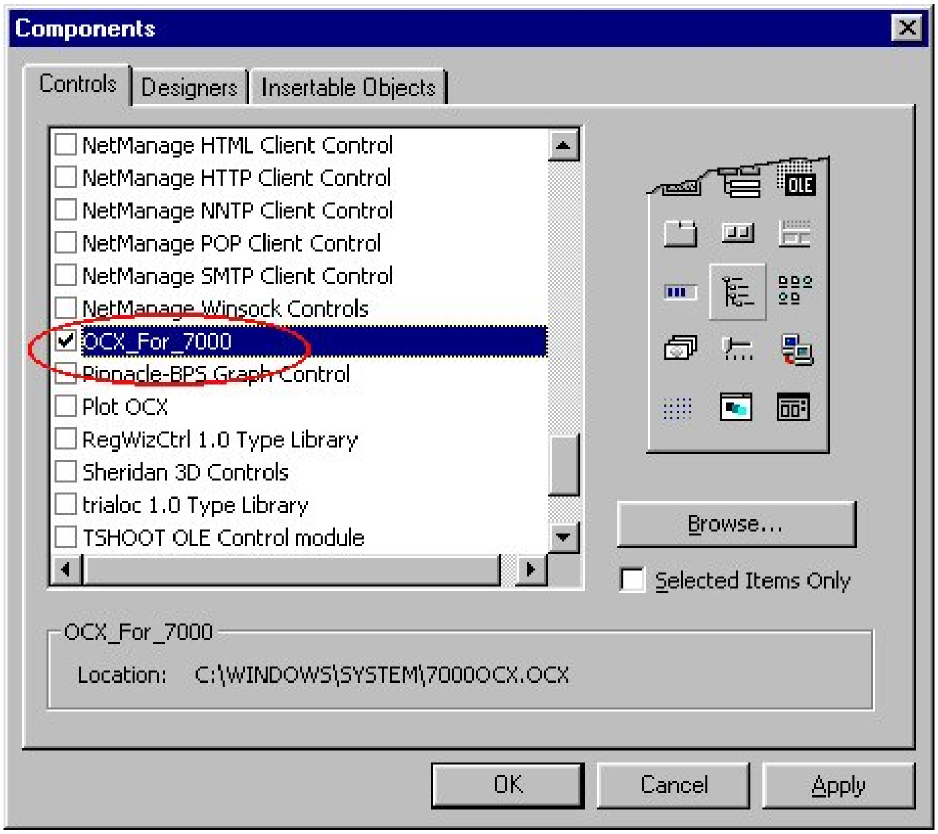


Figure 4-1-2. Select "Project" / "Components".



Components

Controls | Designers | Insertable Objects

- □ NetManage HTML Client Control
- □ NetManage HTTP Client Control
- □ NetManage NNTP Client Control
- □ NetManage POP Client Control
- □ NetManage SMTP Client Control
- □ NetManage Winsock Controls
- ☑ OCX_For_7000
- □ Pinnacle-BPS Graph Control
- □ Plot OCX
- □ RegWizCtrl 1.0 Type Library
- □ Sheridan 3D Controls
- □ trialoc 1.0 Type Library
- □ TSHOOT OLE Control module

□ Selected Items Only

OCX_For_7000

Location: C:\WINDOWS\SYSTEM\7000OCX.OCX

Figure 4-1-3. Select the "OCX_For_7000" option.

- Click on the "7000OCX" and "CommandButton" from on "Form1". Refer to Figure 4-1-4 to 4-1-5.

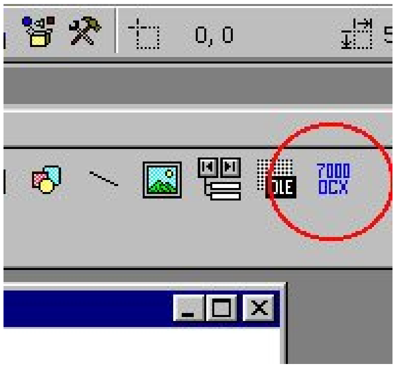


Figure 4-1-4. The "7000 OCX" icon.

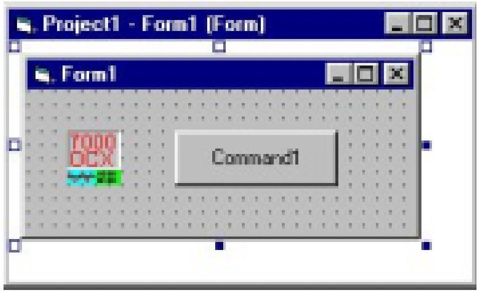


Figure 4-1-5. The “7000 OCX” and "CommandButton" on Form1.

- Add these codes in the sub routine “Command1_Click()”

```
Private Sub Command1_Click()
   NAP7000X1.ComPort = COM2           'Use COM2
   NAP7000X1.Address = 1              'module address: 1
   NAP7000X1.BaudRate = 9600          'setting the baudrate
   NAP7000X1.CheckSum = False         'checksum disable
   NAP7000X1.PortOpen = True          'Open the ComPort
   NAP7000X1.ModuleType = I_7013      'Module ID
   Command1.Caption = NAP7000X1.AI    'Get Analog input value
   NAP7000X1.PortOpen = False         'Close the ComPort
End Sub
```

- Run the program and click on the “Command1” button. The caption of the “Command1” button shows the analog input value. Refer to Figure 4-1-6.

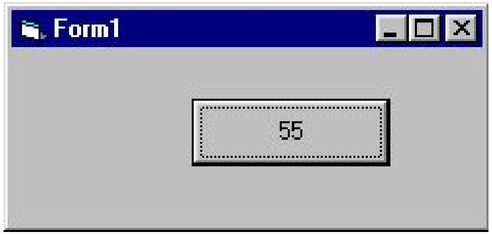


Figure 4-1-6. Shows the analog input value from the module.

The NAP7000X software package provides a user’s manual in HTML format. For detailed descriptions of each property, method and event, please refer to the NAP7000X user’s manual. It also contains demo programs for Visual Basic, Visual C++, Delphi and BCB with complete source code.

5 Dual Watchdog

5.1 Operating Principle

All I-7000 series modules equip both a hardware module watchdog and a software host watchdog. The I-7000 series modules are specially designed for industry applications, and can work under any conditions. Harsh environments may contain excessive noise or energy transient. In this case, the modules will be adversely affected. However, **the built-in hardware module watchdog resets the module if these forces affect the module** (see Figure 5-3-1) **.** Sometimes even the host-PC may be down for hardware or software reasons. **The software host watchdog monitors the status of host-PC.** If the host-PC goes down, all output of the I-7000 series modules will go to predefined safe states for safety protection. Refer to Figure 5-2-1 to 5-2-3) .

If the RS-485 network is open, host commands can not be sent to remote modules. This is very dangerous in real world applications. The I-7000 output-module (AO/DO) will force the output to go to the pre-defined safe states for safety consideration if the host watchdog is actived. This dual watchdog feature increases the reliability of the whole system.

Dual watchdog = module watchdog + host watchdog

Host watchdog: (software/firmware)
if the host is down →
all output goes to safe state (Safe value).
(refer to Figure 5-2-1 ~ 5-2-4).

Module watchdog: (hardware)
if the module is down →
reset this module and the module’s output reverts to PowerOn values.
(refer to Figure 5-3-1 ~ 5-3-2).

5.2 Host Watchdog

The host may be down for the following reasons:

1. excessive noise → host hardware goes into error
2. software problem → host changes to dead lock mode
3. hardware problem → host hardware is damaged
4. the RS485 network is open → cannot send out commands to modules

The host-watchdog (software) is designed to monitor the host computer. **If the host computer is down, the output of the I-7000 modules will automatically go into their safe states to avoid unpredictable damage.**

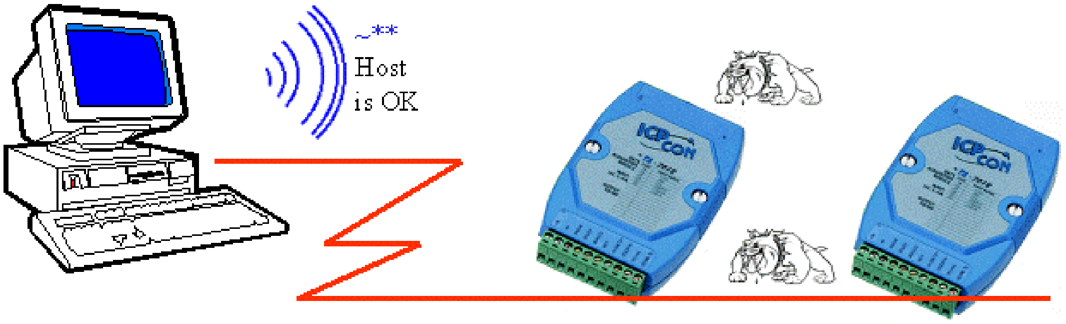


Figure 5-2-1. Host PC sends the "~**" command to every module.
The Host PC is OK.

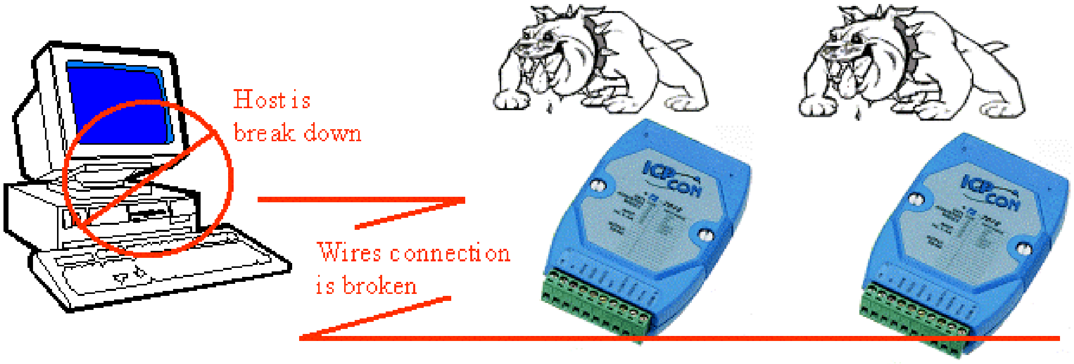


Figure 5-2-2. Host PC cannot send command to any module.
Every Host-Watchdog sets its module to go into safe state.

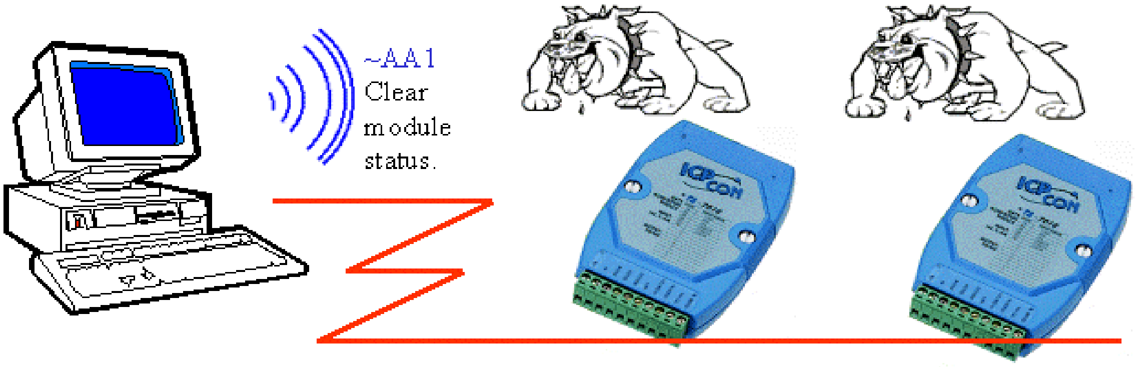


Figure 5-2-3. After Host-Watchdog sets module to safe state, all output commands will be ignored.
To clear, the host PC must send the "~AA0" command to read the module status, and the "~AA1" command to clear the module status.

Note the flow chart for the host computer in Figure 5-2-4.

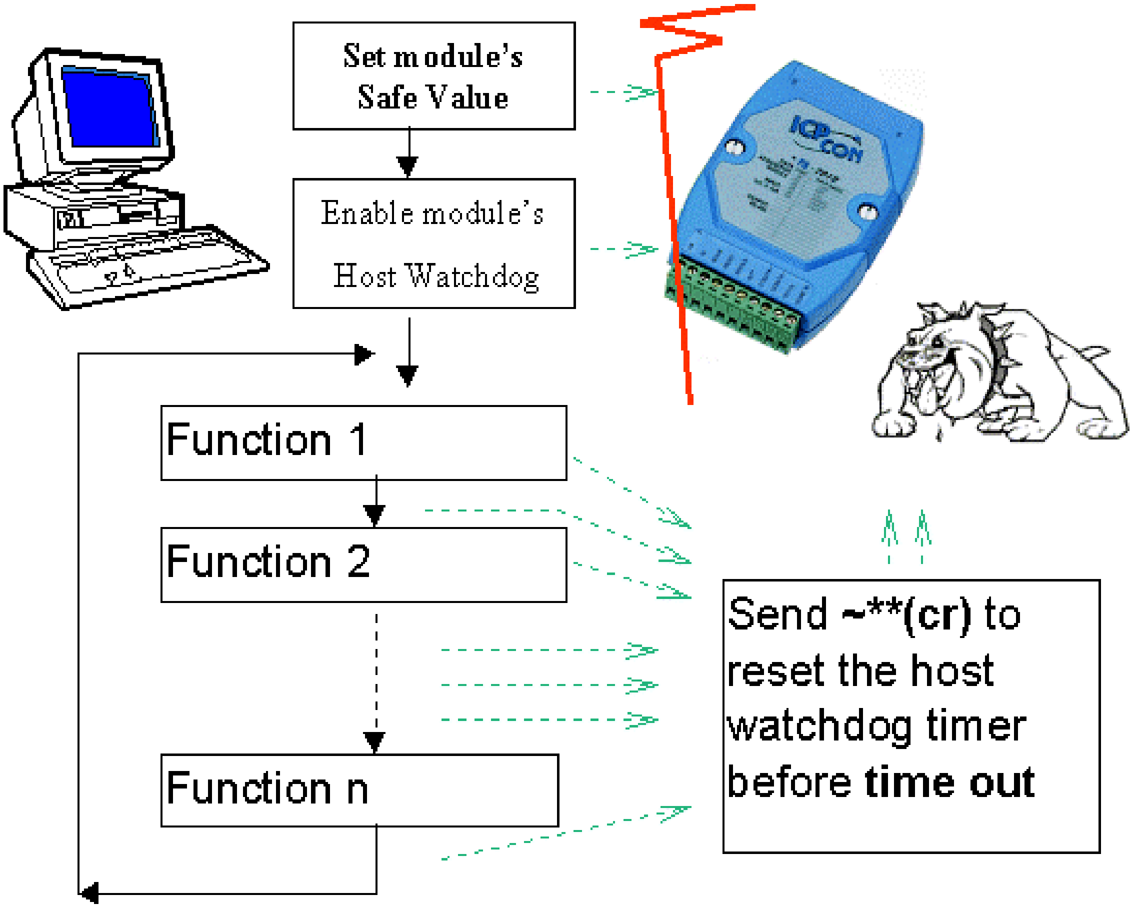


Figure 5-2-4. Flow chart of Host-Watchdog.

Demo: The host-watchdog and safe values for the I-7060 module. Please refer to hardware manual for more detailed information.

01. Power on and run **test.exe**
02. Press **2**
03. Press **$012** [Enter] → Receive=!01400601
04. Press **2**
05. Press **#01000F** [Enter] → Receive =>
06. Press **2**
07. Press **$016** [Enter] → Receive=!0F0F00
08. Press **2**
09. Press ~**014S** [Enter]→ Receive=!0F0F00
10. Press **2**
11. Press **~01311E** [Enter]→ Receive=!01
12. Wait 3 seconds. The led of 7060 should flash and all relay outputs should be OFF. This action simulates host computer failure. The host watchdog is now activated. All relay outputs revert to their safe states.
13. Press **2**
14. Press **$016** [Enter] → Receive=!01000F00
15. Press **2**
16. Press **~011** [Enter] → Receive = !01

Step 03: This is an I-7000 DIO module. Baud rate=9600.
Step 05: Sets all relay outputs to ON State.
Step 07: Reads back the state of all DI/DO: all relays ON, all input HIGH
Step 09: Sets current D/O states as the safe-value
Step 11: Enables the host watchdog and timer, 1EH*0.1s = 3 sec.
Step 14: Reads back the DI/DO state: all relays OFF, all input HIGH.
Step 16: Clear the module status to 00

Note: The program “test.exe” is contained in the NAP7000S, a software utility (DOS version) for all I-7000 modules.

5.3 Module Watchdog

The I-7000 series modules are designed for industry applications. They can be used under any conditions. Sometimes industry environments will contain excessive noise or energy transient. **The module might be affected if these noises are excessive.** If the working environment is not noisy, the well-designed firmware will enable the I-7000 modules to run for years.

The "$AA5" command is designed to detect module-watchdog failures. **If the module is down, the module-watchdog (hardware circuit) will reset this module.** After reset, the output state of the module will revert to pre-defined Power-On values. The Power-On values may be different from the output-values previously used. **Therefore, after the module-watchdog resets, send the output command again to the module to restore the previous Output State values.**

Figure 5-3-1. Module-Watchdog will reset the module when the module fails.

The flow chart for module-watchdog (hardware) failure detection is given in Figure 5-3-2.

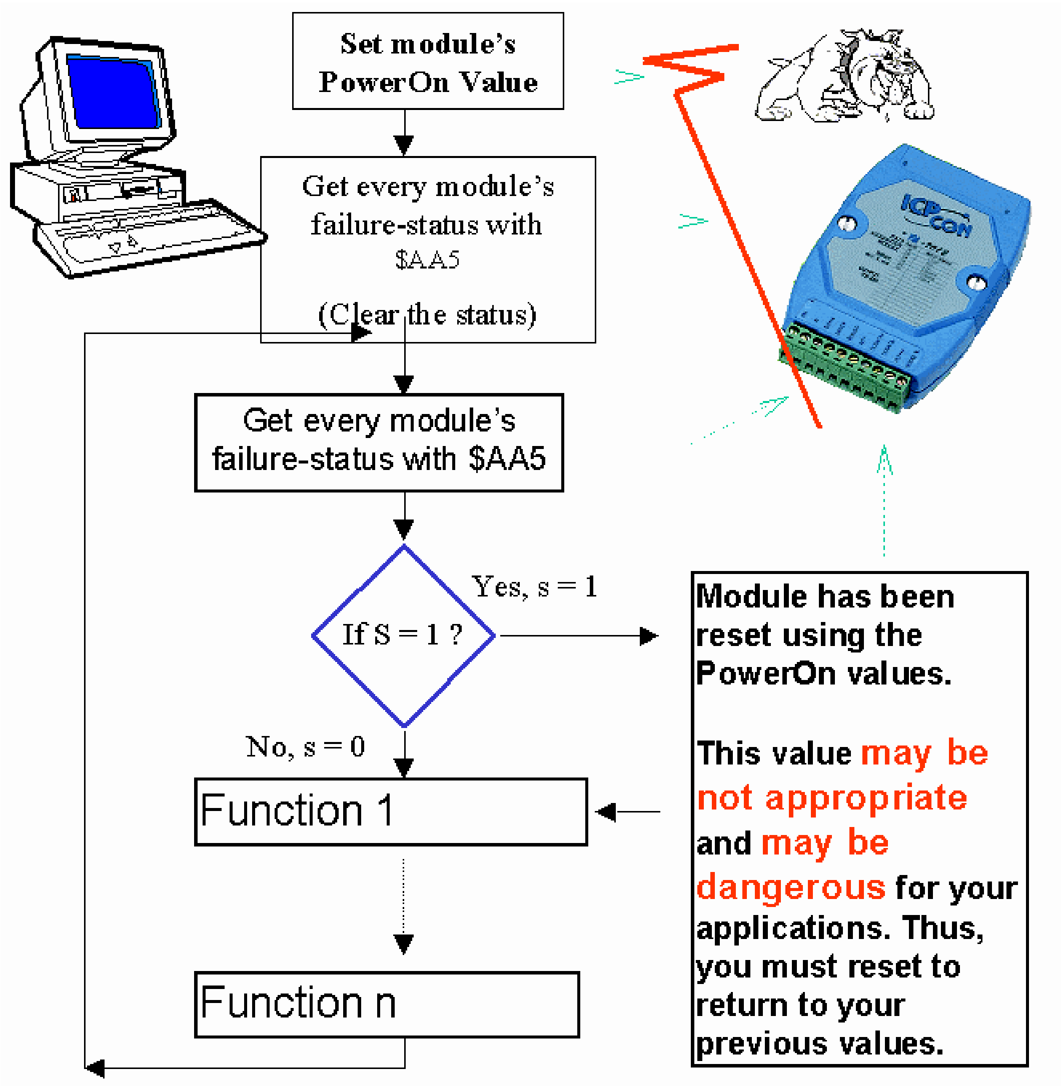

Set module's PowerOn Value
Get every module's failure-status with $AA5
(Clear the status)
Get every module's failure-status with $AA5
If S = 1 ?
Yes, s = 1
No, s = 0
Function 1
Function n
Module has been reset using the PowerOn values.
This value may be not appropriate and may be dangerous for your applications. Thus, you must reset to return to your previous values.

Figure 5-3-2. Flow chart of Module Watchdog.

Frequently checking module status if the module is working in harsh environments is highly recommended.

5.3.1 Does the module reset very frequently?

If the module resets frequently, it may occur due to the following reasons.

- ***Excessive noise***

  The I-7000 series modules are designed for industry applications and difficult environments. Often, these environments contain excessive noise or energy transient which can disable your module.

  Reducing your environment's excess noise level improves both the stability and reliability of your application.

- ***Module(hardware) is going to break down.***

  When a module cannot read data or produces bad output, it may because the module is going to break down. The user should *replace this module ASAP.*

It is important to check if your module has been reset, because the module’s output will revert to Power-On values after the module has been reset. The Power-On value may be not appropriate, or may be dangerous, for your job. Resetting the module to your desired values ensures your module will work correctly.

5.4 Comparison of Host Watchdog and Module Watchdog

	Host Watchdog	**Module Watchdog**
Software or Hardware	● Software Watchdog ● Built-in firmware	● Hardware Watchdog ● Circuits in module
Purpose	● To monitor the Host PC ● For use in all output modules	● To monitor the Module ● For use in all modules
When activation occurs	● Host is down ● Communication line is broken	● Module fails ● Excessive work environment noise
What to do	● Module goes to safe state ● Module status S = 0x04 ● Module's output goes to safe values ● All output commands will be ignored.	● Module resets ● Module Reset status S = 1 ● Module's output goes to PowerOn values
CLEAR module-status	● ~AA1 ● S is set to 0	
READ module-status	● ~AA0 ● S = 4 → Host is down S = 0 → Host is OK	
READ and RESET module-reset – status		● $AA5 ● S = 1 → Module Reset S = 0 → Not reset
Setup steps	● Setup safe values ● Setup the timer interval value of Host Watchdog and enable the Host Watchdog	● Setup Power-On values
Send "Host is OK"	● ~** Send the "~**" command to modules before timeout of Host Watchdog's timer.	

5.5 Functions and Demo Programs

There are several functions designed for the Watchdog. For detailed information about these functions, please refer to the NAP7000P user's manual. These functions are listed as follows:

HostIsOK : Tells all modules "Host is OK" by sending the "~**" command.
ReadModuleResetStatus : Reads the module reset status.
ToSetupHostWatchdog : Sets up the module's Host Watchdog.
ToReadHostWatchdog :
Reads the module's Host Watchdog setup values.
ReadModuleHostWatchdogStatus :
Reads the module's Host Watchdog status.
ResetModuleHostWatchdogStatus :
Resets the module's Host Watchdog status.
SetSafeValueForDo : Sets up the safe values for DO modules.
SetPowerOnValueForDo : Sets up the power on values for DO modules.
SetSafeValueForAo : Sets up the safe values for AO modules.
SetPowerOnValueForAo : Sets up the power on values for AO modules.
SetPowerOnSafeValue :
Sets up the power on and safe values for modules.

There are some sample programs for the Watchdog. They are written in VB, Delphi and BCB computer languages, and placed into their respective demo folders. These demo programs are listed as follows:

SafeAI	**:** Host Watchdog and Safe value demo for analog input modules.
SafeAO	**:** Host Watchdog and Safe value demo for analog output modules.
SafeDO	**:** Host Watchdog and Safe value demo for digital output modules.
Watchdog	**:** Host Watchdog and Module Watchdog demo.

Users can find these functions and demo programs in the **NAP7000P version 3.3**.

5.5.1 Descriptions of Watchdog Demo

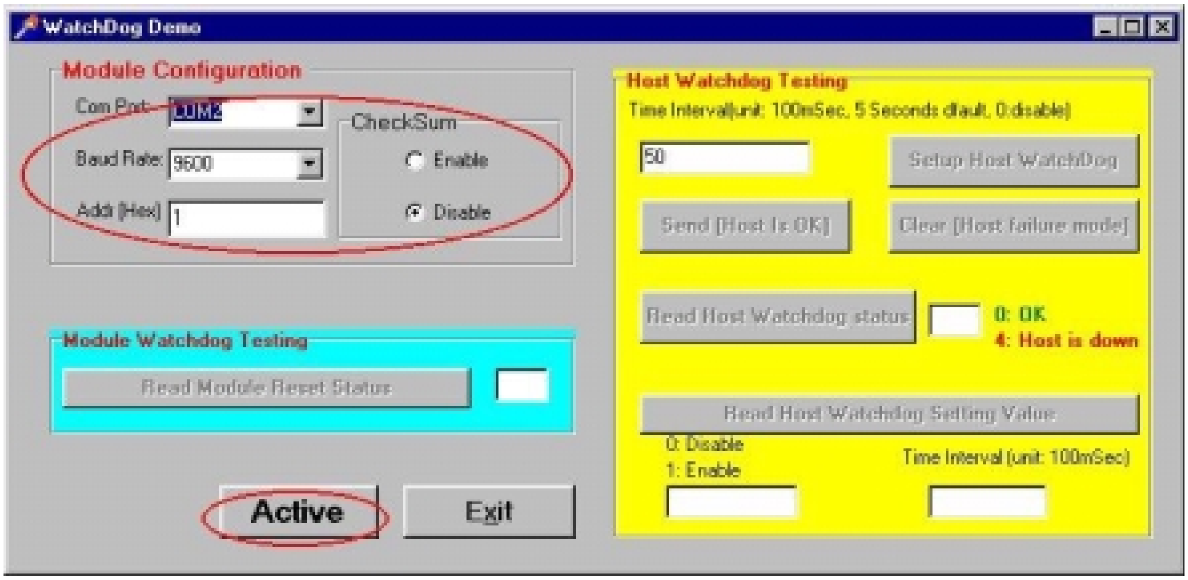
Platform : Windows 95/98/NT
Software : NAP7000P v3.30 (or above)
Demo Program : NAP7000P\Demo\Delphi\Watchdog\Project1.dpr
NAP7000P\Demo\BCB\Watchdog\Project1.bpr
NAP7000P\Demo\VB\Watchdog\Project1.vbp

Modules : 7520 x 1 (RS-232 / RS-485)
70xx x 1 (recommend for use with an output module)
Module Configuration :
Baud rate : 9600
Checksum : disable
Address : 0x01

This program demonstrates the following features:

1. Host Watchdog.
2. Broken communication line detection.
3. Module Watchdog.

Please run the demo program, and follow those steps to test the dual watchdog. The main window is shown as Figure 5-5-1.



WatchDog Demo

Module Configuration

Com Port: COM2
Baud Rate: 9600
Addr (Hex): 1

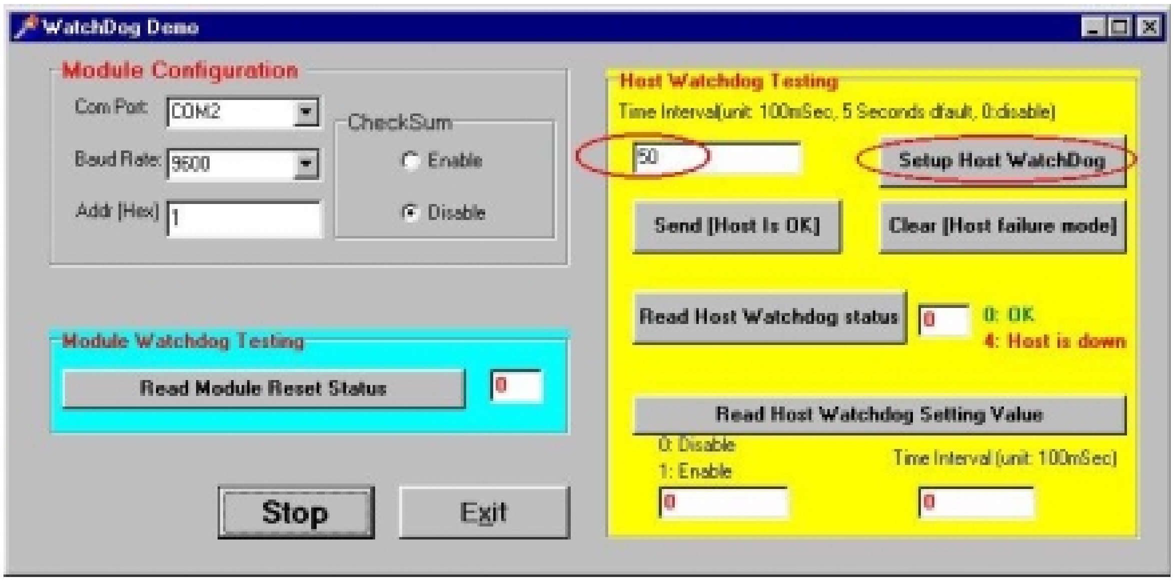
CheckSum
○ Enable
● Disable

Host Watchdog Testing

Time Interval(unit: 100mSec, 5 Seconds dault, 0:disable): 50

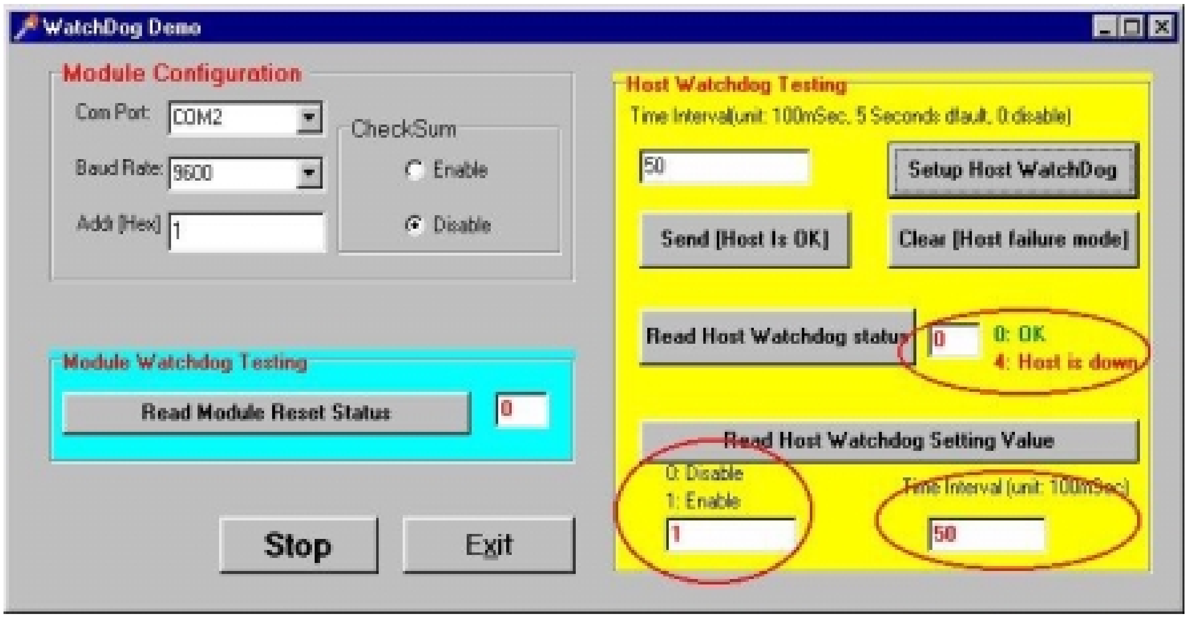
Figure 5-5-1. Choose your configuration
and click the “Active” button to start this demo program.

5.5.1.1 Host Watchdog



Com Port: COM2
Baud Rate: 9600
Addr (Hex): 1
CheckSum: ○ Enable ● Disable
Read Module Reset Status: 0
Time Interval(unit: 100mSec, 5 Seconds dfault, 0:disable): 50
Read Host Watchdog status: 0 (0: OK, 4: Host is down)
0: Disable 1: Enable: 0
Time Interval (unit: 100mSec): 0

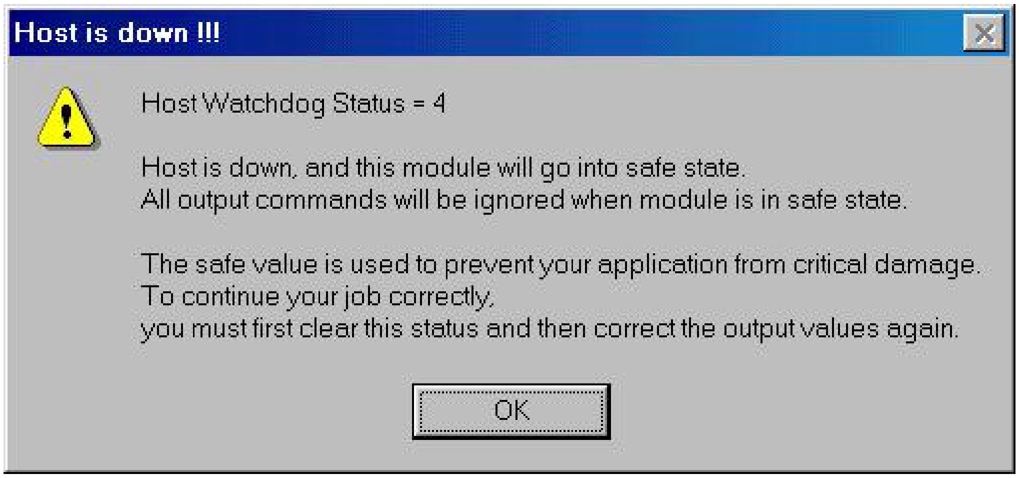
Figure 5-5-2. Type in time-interval value
and click on the "Setup Host Watchdog" button.



Com Port: COM2
Baud Rate: 9600
Addr (Hex): 1
CheckSum: ○ Enable ● Disable
Read Module Reset Status: 0
Time Interval(unit: 100mSec, 5 Seconds dfault, 0:disable): 50
Read Host Watchdog status: 0 (0: OK, 4: Host is down)
0: Disable 1: Enable: 1
Time Interval (unit: 100mSec): 50

Figure 5-5-3. After setting up the Host-Watchdog, read the status and all pre-set values. In example 5-5-3, the user has these values:

- 0:Host is OK.
- 1:Host Watchdog is enabled.
- Host Watchdog time interval is 5 seconds.



Host is down !!!

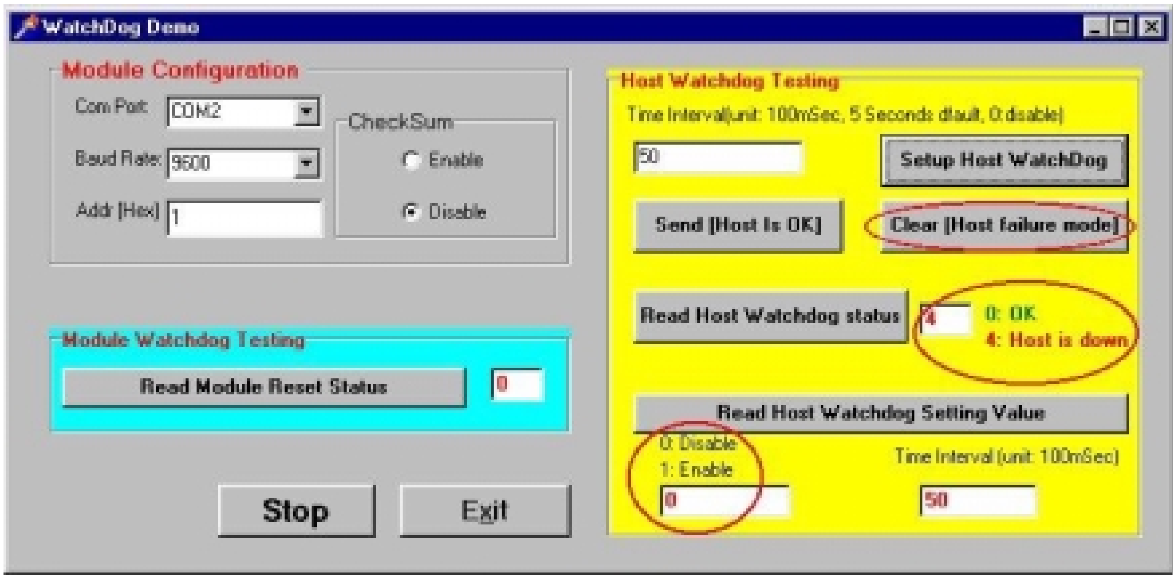
Host Watchdog Status = 4

Host is down, and this module will go into safe state.
All output commands will be ignored when module is in safe state.

The safe value is used to prevent your application from critical damage.
To continue your job correctly,
you must first clear this status and then correct the output values again.

Figure 5-5-4. Host-Watchdog Demo.
After 5 seconds, the "host is down" message pops up.
Click on the "OK" button to close this message box.

Since the Host-Watchdog is enabled, if the Host PC does not send the command "~**" to the module, the module supposes that the Host PC may break down**. All output commands will be ignored when the module is in safe state.**



WatchDog Demo

Module Configuration

Com Port: COM2

Baud Rate: 9600

Addr (Hex): 1

CheckSum: ○ Enable ● Disable

Module Watchdog Testing

Read Module Reset Status: 0

Host Watchdog Testing

Time Interval(unit: 100mSec, 5 Seconds: dfault, 0:disable): 50

Read Host Watchdog status: 4

0: OK
4: Host is down

0: Disable
1: Enable

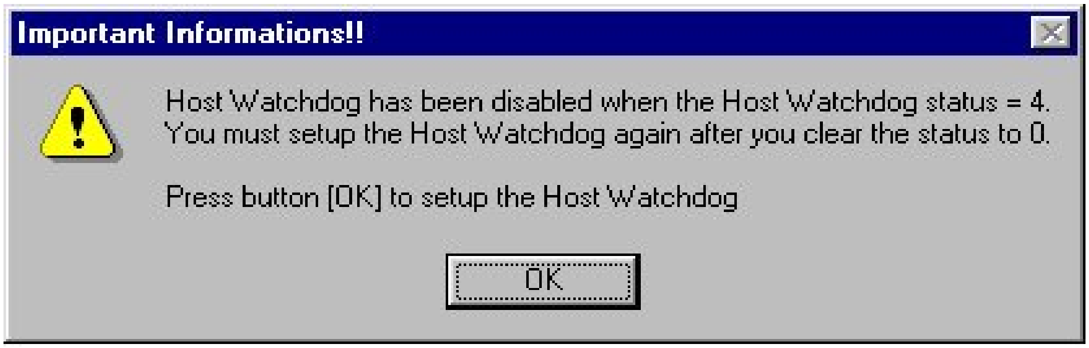
0

Time Interval (unit: 100mSec): 50

Setup Host WatchDog
Send (Host Is OK)
Clear (Host failure mode)
Read Host Watchdog status
Read Host Watchdog Setting Value
Read Module Reset Status
Stop
Exit

Figure 5-5-5. Host is down. Module goes into safe state.

After the module goes into safe state, the module's Host-Watchdog will be disabled automatically. Click on the "Clear [Host failure mode]" button to clear this status (refer to Figure 5-5-5). The module's status will go back to "0:Host is OK!" (Refer to Figure 5-5-3).

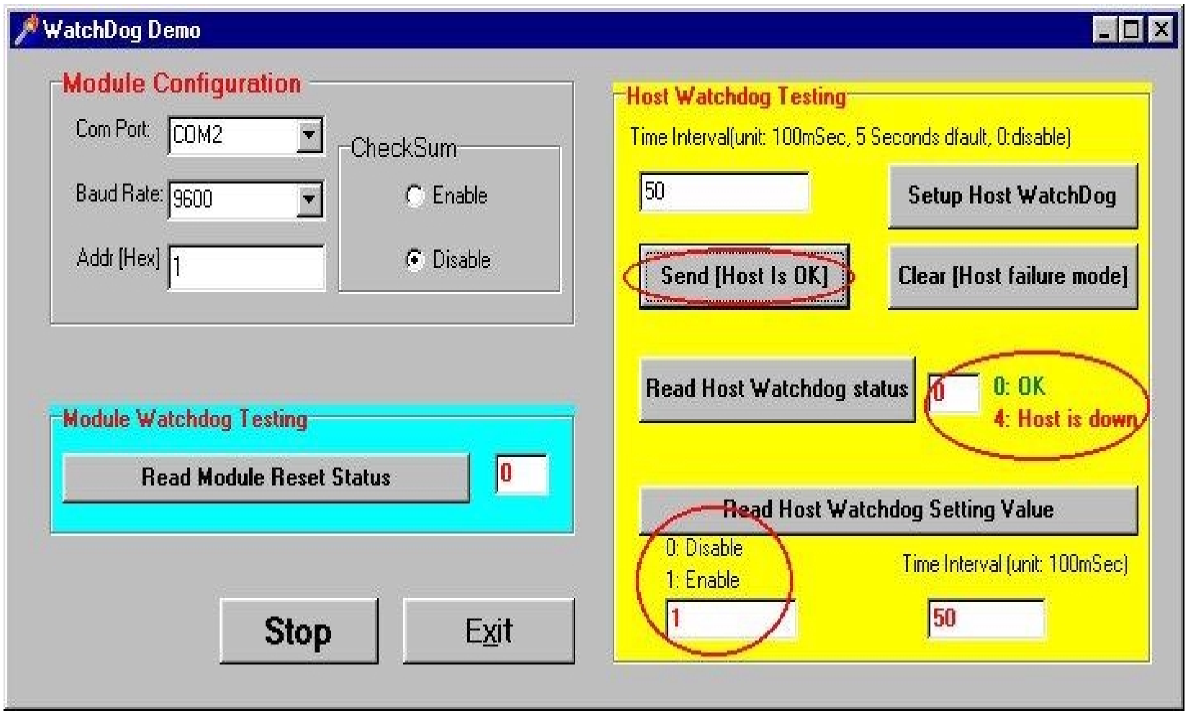


Important Informations!!

Host Watchdog has been disabled when the Host Watchdog status = 4.
You must setup the Host Watchdog again after you clear the status to 0.

Press button [OK] to setup the Host Watchdog

Figure 5-5-6. Host Watchdog has been disabled after module reverts to safe state. Thus, users have to reset the Host Watchdog. The module's status will go back to "0:Host is OK!"(Refer to Figure 5-5-3).



WatchDog Demo

Module Configuration

Com Port: COM2

Baud Rate: 9600

Addr [Hex] 1

CheckSum

○ Enable

● Disable

Module Watchdog Testing

Read Module Reset Status 0

Host Watchdog Testing

Time Interval(unit: 100mSec, 5 Seconds dfault, 0:disable)

50

Read Host Watchdog status 0

0: OK
4: Host is down

Read Host Watchdog Setting Value

0: Disable
1: Enable

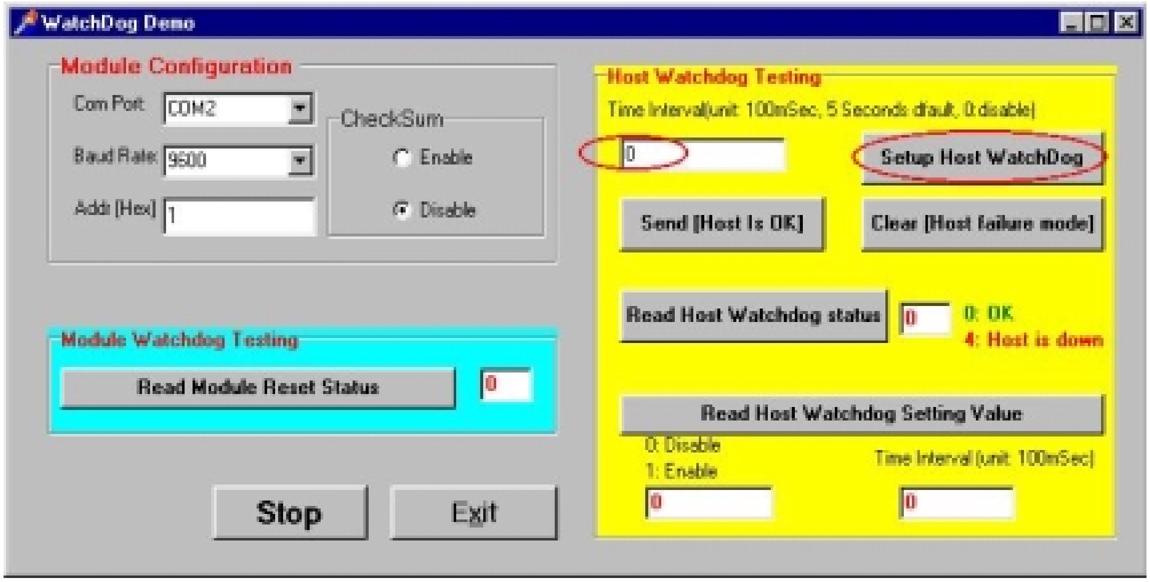
1

Time Interval (unit: 100mSec)

50

Figure 5-5-7. Send the "[Host is OK]" command to the module every second.

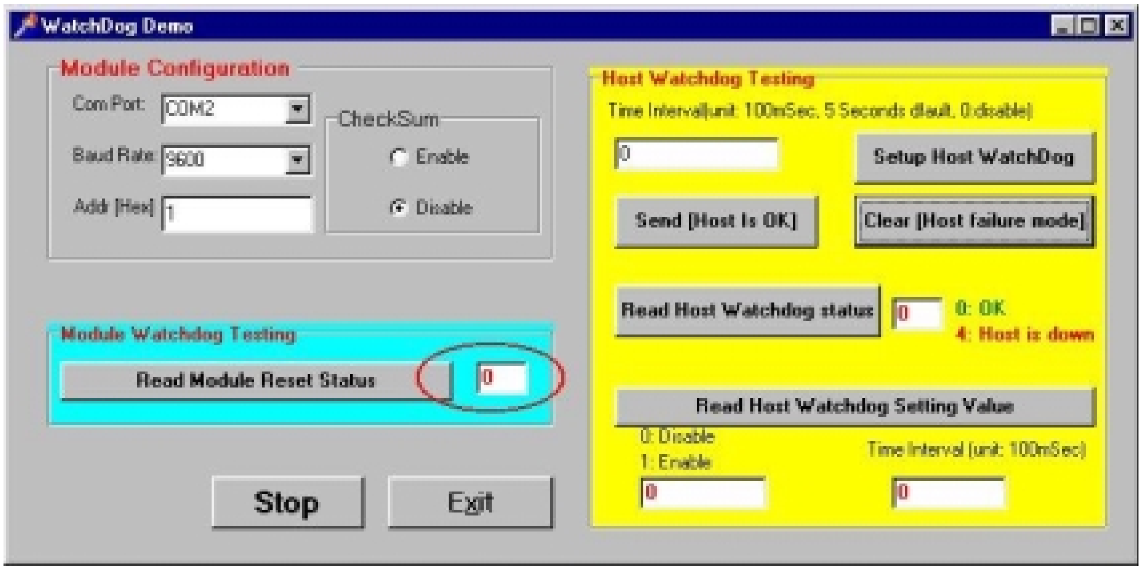
When the module's status is "0:OK", the Host Watchdog is enabled. Click on the "Send [Host is OK]" button every second. After 5 seconds, the message box "Host is down" won't pop up. Because the user sent the "~**" command to this module, the module knew that the connection with the Host was active.



Com Port: COM2
Baud Rate: 9600
Addr (Hex): 1
CheckSum: ○ Enable ● Disable
Module Reset Status: 0
Time Interval: 0
Host Watchdog status: 0
0: Disable 1: Enable: 0
Time Interval (unit: 100mSec): 0

Figure 5-5-8. Type 0 in the Host-Watchdog's time interval edit box. Click the "Setup Host Watchdog" button to disable it.

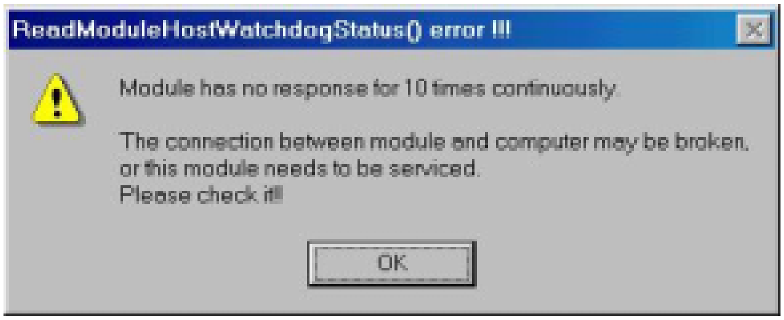
5.5.1.2 Broken communication line detection



Com Port: COM2
Baud Rate: 9600
Addr (Hex): 1
CheckSum: ○ Enable ● Disable
Module Reset Status: 0
Time Interval: 0
Host Watchdog status: 0
0: Disable 1: Enable: 0
Time Interval (unit: 100mSec): 0

Figure 5-5-9. Normally, the Module Reset Status is 0.

Now, please disconnect the RS-232 cable from the I-7520 module. This is used to simulate a broken communication line. After x seconds (determined by the sample program), a message box pops up to tell the user that the communication line is broken between the computer and the module (refer to Figure 5-5-10).



ReadModuleHostWatchdogStatus() error !!!

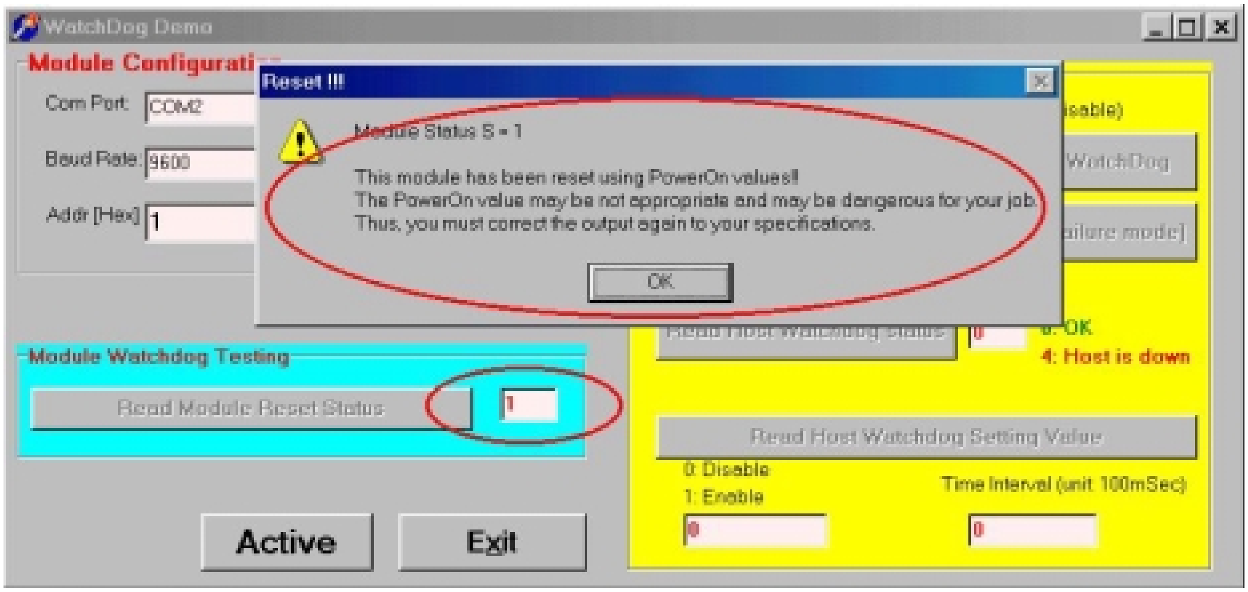
Module has no response for 10 times continuously.

The connection between module and computer may be broken,
or this module needs to be serviced.
Please check it!!

Figure 5-5-10. Communication line is broken.
Click on the "OK" button to close it.
(This feature doesn't involve the Dual Watchdog.)

5.5.1.3 Module Watchdog

Please connect the RS-232 cable to the I-7520 module again. Unplug the user's I-70xx module, then plug it in again. The "Reset" message box will pop up as in Figure 5-5-11.



WatchDog Demo

Module Configurati

Com Port: COM2

Baud Rate: 9600

Addr [Hex]: 1

Reset !!!

Module Status S = 1

This module has been reset using PowerOn values!!
The PowerOn value may be not appropriate and may be dangerous for your job.
Thus, you must correct the output again to your specifications.

Module Watchdog Testing

Read Module Reset Status: 1

isable)

ailure mode]

Read Host Watchdog Status: 0

0: OK
4: Host is down

Read Host Watchdog Setting Value

0: Disable
1: Enable

Time Interval (unit: 100mSec)

0

0

Figure 5-5-11. Module-Watchdog Demo.
Module has been reset. Output goes to Power-On values.
Click on the "OK" button to close it.

The Power-On value may be not appropriate and may be dangerous for your job. Thus, correct the output values again to fit your specifications.

6 FAQ

6.1 7000 FAQ

Q: How to compute the checksum?

A:

The steps to compute the checksum are given as follows:

Step 1: Checksum=0;

Step 2: Sums all "Command byte" with index conduct this loop:

Checksum = Checksum + Command byte [index]

Step 3: Checksum = Checksum & 0xff

Step 4: Convert Checksum to ASCII high byte and ASCII low byte

For example,

Command = $012[Enter]

Checksum = '$'+'0'+'1'+'2' = 0x24+0x30+0x31+0x32 = 0xB7

Checksum & 0xff = 0xB7

Checksum high byte = 'B'

Checksum low byte = '7'

Command with checksum = $012B7[Enter]

Q: When to use a repeater in the RS-485 network?

A:

Users should use a repeater if the network has more than 256 modules, or if it is being sent farther than 1.2 km.

●***Q:*** What is the maximum scan-rate in the RS-485 network?

A:

The scan-rate depends on the baud rate of the RS-232 COM port, checksum status, module numbers, channels, commands to send, result string received and system performance.

To test, use those conditions:

I-7012 module: x 1
Channel: x 1
Baud Rate: 115200 bps
Command: #AA (cr)(null) ==> 5 Chars
Result: >SDDDDDD (cr) ==> 9 Chars

1 Char: 1 Start bit + 8 Data bits + 1 Stop bit = 10 bits
Every communication: Command string + Result string
= 14 Chars = 140 bits
140 (bits/communication) / 115200 (bits/sec)
= 0.00122 (sec/communication)
Hardware delay (every communication): 1 mSec
Scan rate: 1/ (0.00122 + 0.001) = 450 (communication/sec)

Estimated scan rate:

450 times/sec maximum.

Tested value of scan rate:

440 times/sec maximum without system message processing.
360 times/sec maximum with system message processing.

Note: System message processing lets the OS process other tasks. This may reduce the program performance.

6.2 MISC *FAQ*

Q: Why doesn't the ComboBox's CHANGE event work with VB?

A:

In Delphi and Borland C++ Builder, the "CHANGE" event works correctly when users choose the item from "ComboBox". But, Visual Basic, this event only occurs when users code in the “CLICK” event to do the same work. This “CLICK” event also works correctly in Delphi and Borland C++ Builder.

Q: How do you prevent TIMER events from reoccurring?

A:

If the “TIMER” object is used, please ensure the set Interval values of the “TIMER” object are appropriate for your program, system and hardware.

Suppose the “TIMER” object triggers an event to do something, and then re-triggers the event to do the same work before the prior job has ended. This may cause two jobs run concurrently. Over time, this might crash the user’s system. If many jobs are running at the same time; the system could overload.

To prevent a system crash with the “TIMER” object, note the following "TIMER" event situation. Please do not give the TIMER object simultaneous jobs, per the example below.

```
bool bProcessing ; // declare a flag

void __fastcall TForm1::FormCreate(TObject *Sender)

{  bProcessing = false;  }

void __fastcall TForm1::Timer1Timer(TObject *Sender)

{   if (bProcessing == true)

        return ; // avoid reenter

    else
```

```
        bProcessing = true;

    ........................
    ........................

    // if (something wrong ) {

        //bProcessing = false; // enable next timer event to enter

        //return;

    //}

    ........................
    ........................

    bProcessing = false; // enable next timer event to enter

}
```

● *Q: What if I receive the "Unable to create process" error message with Borland C++ Builder and Delphi?*

A:

This error message could have occurred if a .DLL file could not be found in your system. Please create a .exe file for this program and then run the execution file. Different error messages may appear as follows; here are explanations for each.

Error Title: Error Starting Program

Error Message: A required .DLL file, XXXX.DLL, was not found.

Note what .DLL files are missed. Copying the specific .DLL files into the system folder of Windows will solve this problem. In general, the system folder is:

C:\Windows\system (for Windows 95/98/ME)

Or C:\WinNT\System32 (for Windows NT/2000/XP)

If needed, check the Windows settings to find the system folder.

7 Reporting Problems

Technical support is available at no charge. The best way to report problems is sending e-mail to

Service@icpdas.com

on the Internet.

When reporting problems, please include the following information:

1) Is the problem reproducible? If so, how?
2) What operation system is being used? For example, DOS, Windows 3.1, Windows 95/98/ME, Windows NT 4.0 and Windows 2000/XP, etc.
3) Which ICPDAS product are you using? Please see the product manual for the product number. For example: I-7012, I-7017, I-7060, I-8410 and I-87056, etc.
4) If a dialog box with an error message was displayed, please include the full text of the dialog box, including the text in the title bar.
5) If the problem involves other programs or hardware devices, what devices and/or version of the other program are you using?
6) Other comments related to this problem or any suggestions will be welcomed.

After we have received your comments, our engineers will take about two business days to test for your problem, and will reply on the results as soon as possible. Please verify that you have received our comments… and please keep in touch with us.

E-mail: **Service@icpdas.com**