The I-7242D
DeviceNet slave / Modbus RTU master Gateway

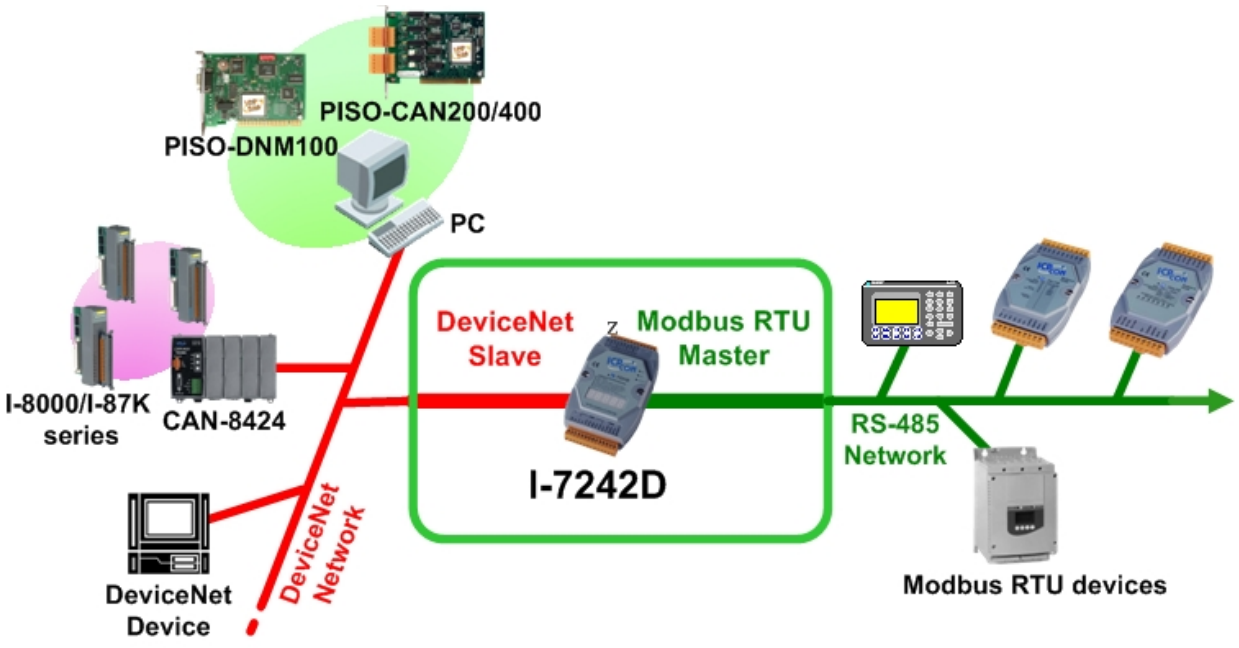
Quick Start User Guide

1. Introduction

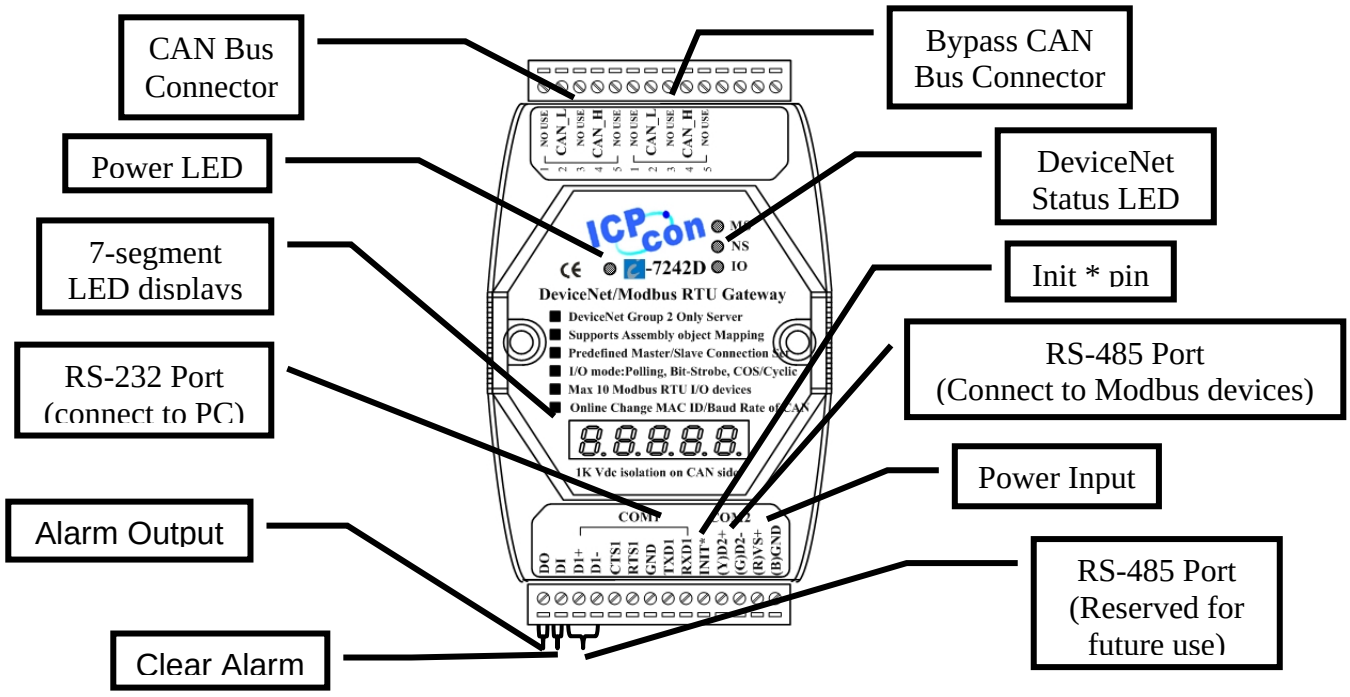
This user guide introduces the user how to implement the I-7242D module into their applications in a quick and easy way. Therefore, it only provides the basic instructions. For more detailed information, please refer to the I-7242D user manual located on the ICPDAS CD-ROM or download it from the ICPDAS web site:

ftp://ftp.icpdas.com.tw/pub/cd/fieldbus_cd/devicenet/gateway/i-7242d/manual/

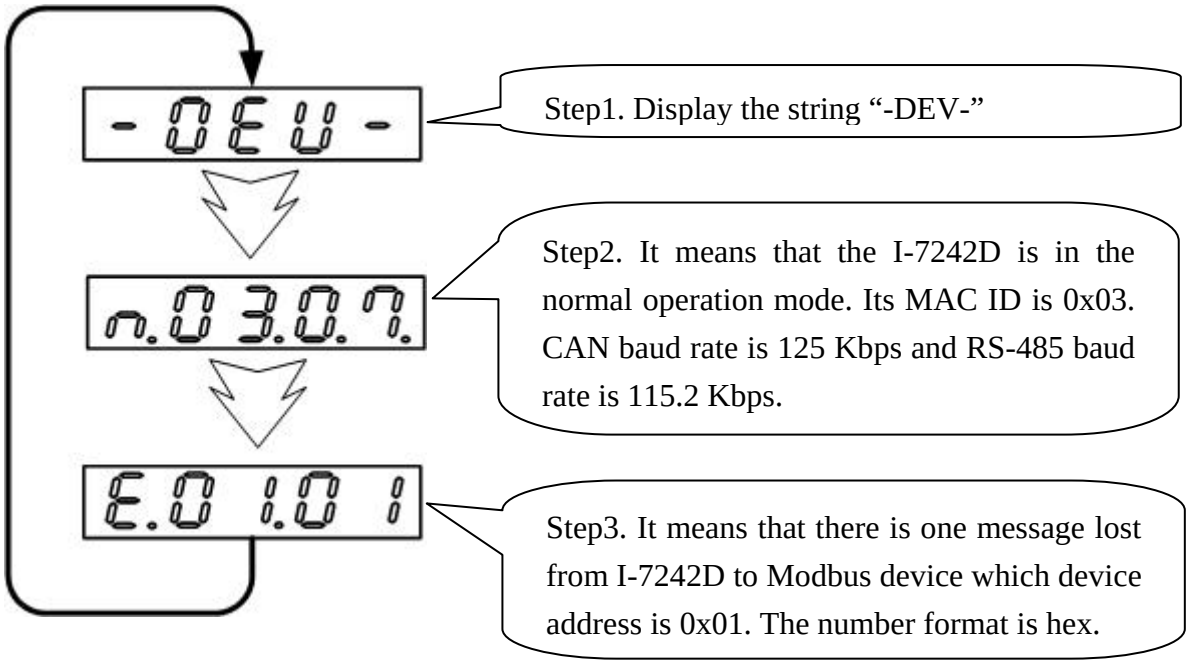
The sake of this manual is focused on helping users to quickly familiarize themselves with the I-7242D module. Users can apply the I-7242D module as follows.



2. Hardware Structure

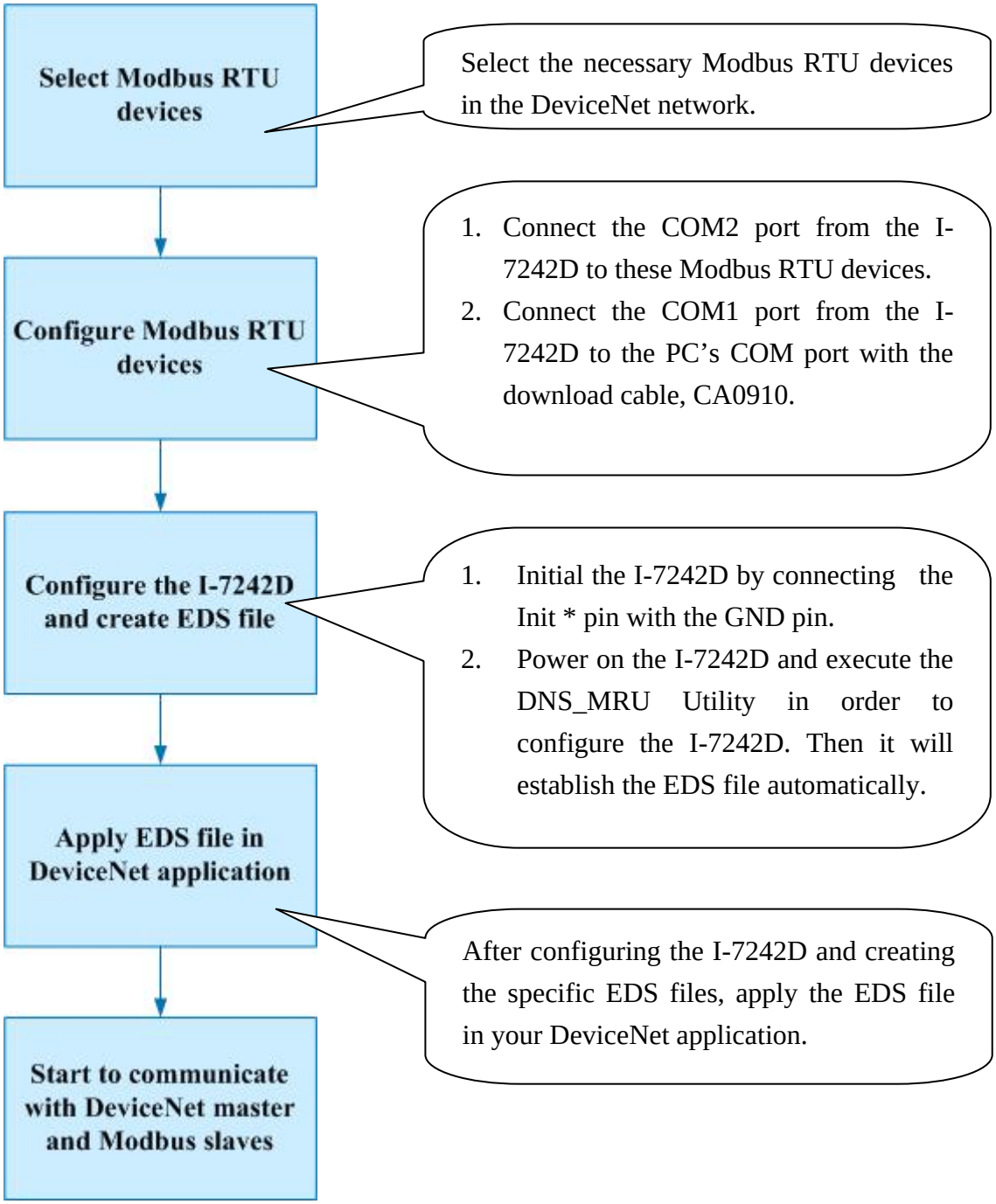


3. 5-digital 7-segment LED Displays



For more information, please refer to section 2.5 of the I-7242D User’s Manual.

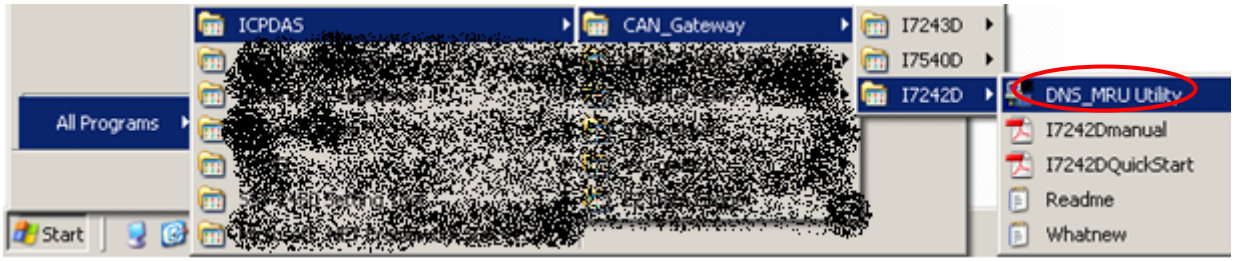
4. Configuration Flowchart



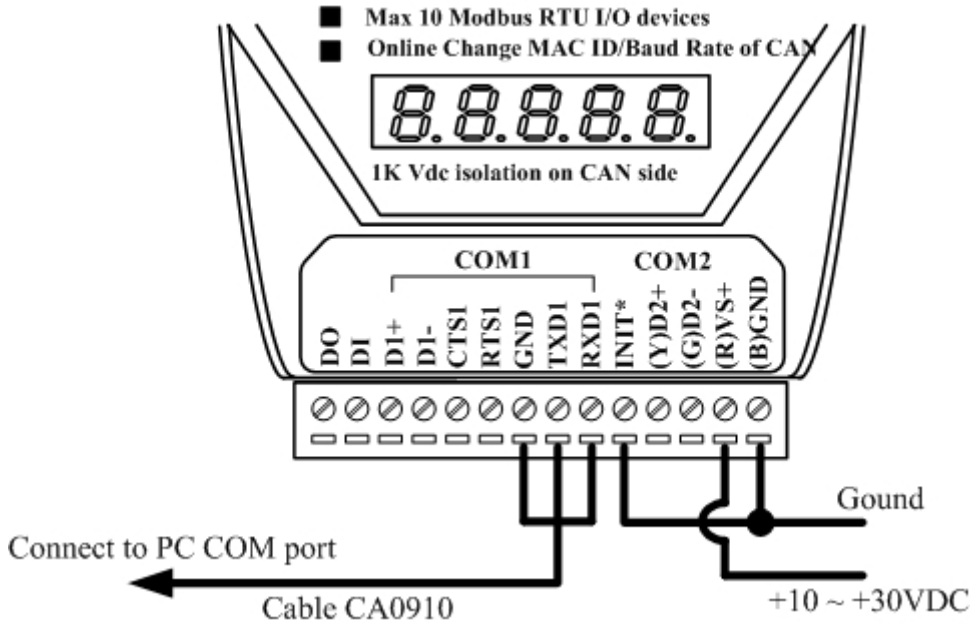
5. Software Installation

Before users use the I-7242D, they must configure the I-7242D by the DNS_MRU Utility. Please do following steps to configure the I-7242D.

Step 1: Please install the DNS_MRU Utility. You can find this configuration tool from our web site: ftp://ftp.icpdas.com.tw/pub/cd/fieldbus_cd/devicenet/gateway/i-7242d/manual/ or the CD-ROM disk following the path of /CAN-CD/ DeviceNet/ Gateway/ I-7242D/ Utility/**.**

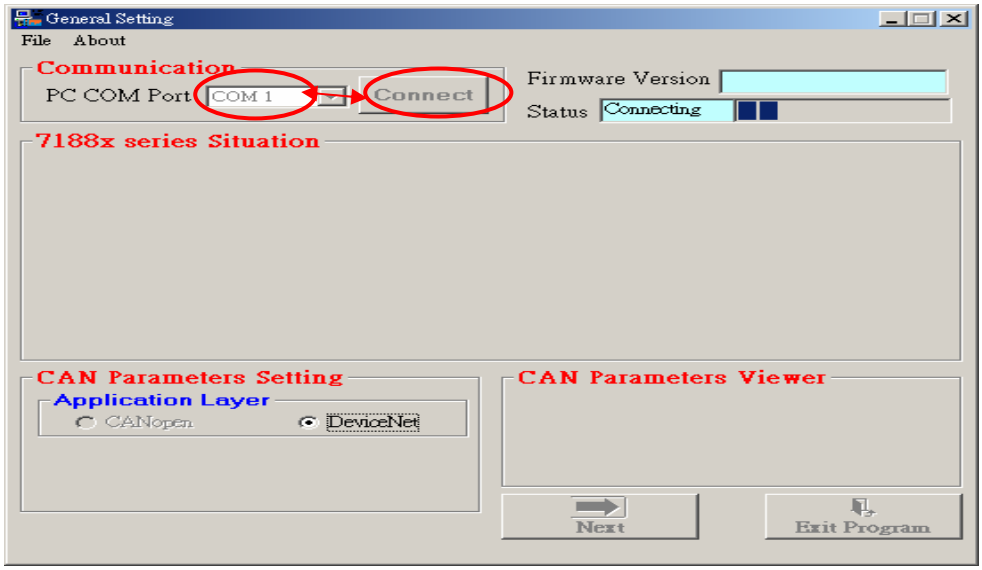


Step 2: Before you use the software, connect the I-7242D with your computer correctly. Then turn off the I-7242D and connect the INIT* pin with the GND pin of the I-7242D.

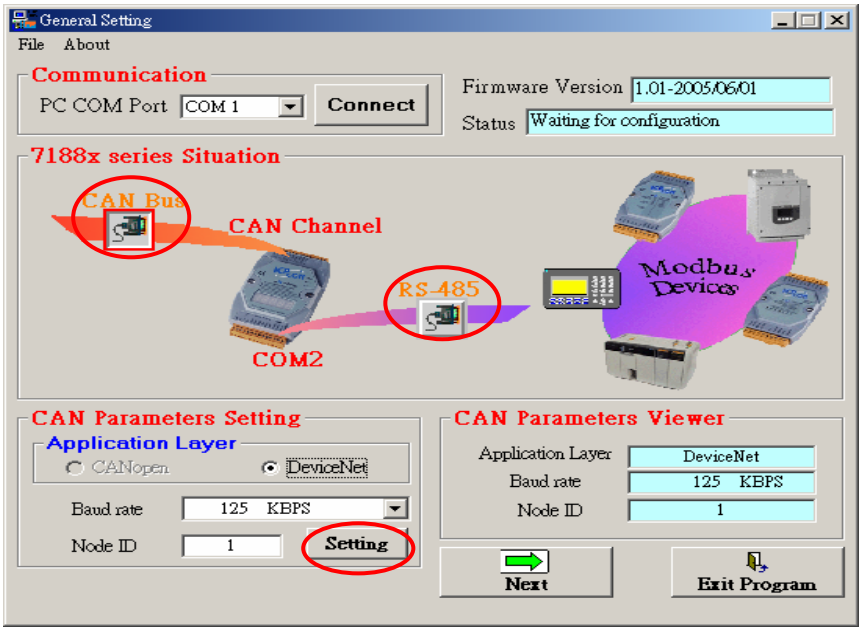


Step 3: Turn on the I-7242D. And execute the DNS_MRU Utlility file. Thus the startup figure would be displayed.

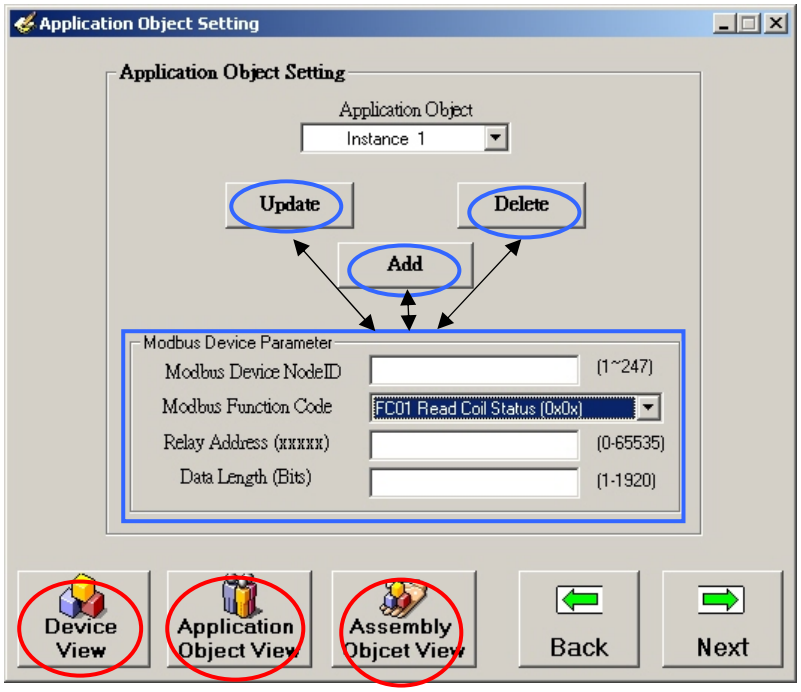
Step 4: Select PC's COM port correctly. Then press the "Connect" button to connect with the I-7242D. Then it would take few seconds to read the communication parameters stored in the I-7242D's EEPROM.



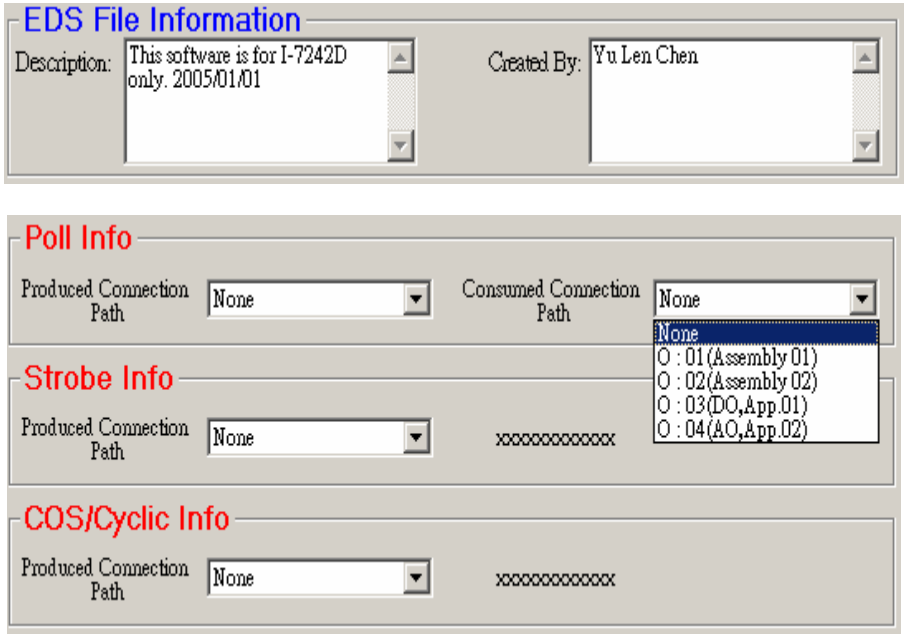
Step 5: After reading parameters from EEPROM, a related information dialog box will be displayed. Then you can set the CAN and COM port parameters to what you need.



Step 6: After setting the CAN and COM port parameter, press the “Next” button to start to set their Modbus devices parameters. Users can use the add button, erase button, update button or delete button to modify their Modbus devices parameters. And users can view the information of devices, application object and assembly object by clicking these “View” buttons.



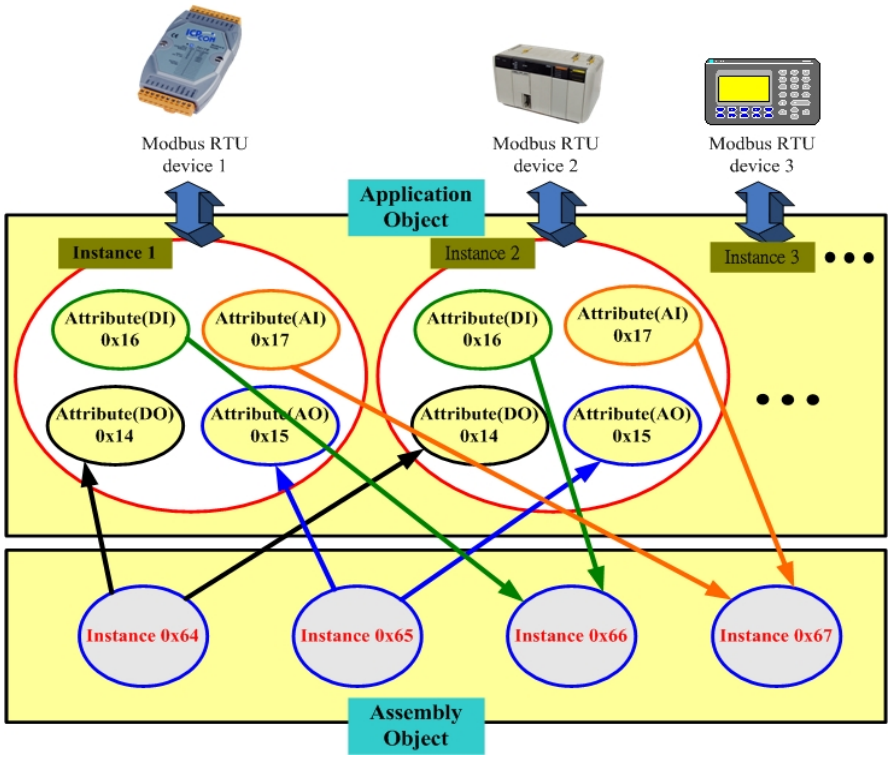
Step 7: After the configuration of Modbus devices parameters, press the “Next” button and start to build the specific EDS file for the I-7242D. Set the EDS file information and give it a description in the description box. Then set the poll, strobe-bit and COS/Cyclic I/O connection path for the I-7242D.



Step 8: The last step is to press the “Finish” button to create the EDS file and store these setting in the I-7242D. You can find the EDS file “MBDNS_x.eds” in the path of DNS_MRU.exe.

6. The relation of application and assembly objects

The components of Assembly Objects



Example : (one DO device、one DI device、one AO device、one AI device)

In this example, apply four Modbus devices in the system.

Application object instances in the I-7242D

Application Instance ID	Device Address	Device I/O Type	Relay/Register Start Address	Relay/Register Data Length
0x01	1	Digital Output	0	16
0x02	3	Digital Input	0	7
0x03	5	Analog Output	0	3
0x04	7	Analog Input	0	4

The components of assembly objects in I-7242D

Assembly Object Instance ID	Data Length (Byte)	Component devices (ID, Address)
0x64	DO: 2	1(00015~00000)
0x65	AO: 6	2(00000~00002)
0x66	DI: 1	3(00006~00000)
0x67	AI: 8	4(00000~00003)

“User-defined Modbus Device Object” (0x64) attributes:

Attribute ID	Description	Data Type	Method	Value
0x01	Device ID	CHAR	Get	0
0x02	Device I/O Type	CHAR	Get	0
0x03	Device Start Address	WORD	Get	0
0x04	Device Length	WORD	Get	0
0x05	Data Lose Counter	WORD	Get/Set	0
0x06	Modbus command. status	CHAR	Get	0
0x14	DO Data	Defined by device num.	Get/Set	0
0x15	AO Data	Defined by device num.	Get/Set	0
0x16	DI Data	Defined by device num.	Get	0
0x17	AI Data	Defined by device num.	Get	0

7. Steps to implement the DeviceNet applications by using the command set

1. **Request the use of the Predefined Master/Slave Connection Set.**
2. **Apply the Master’s Explicit Request Messages to set the expected_packet_rate attribute of the I/O connection and make the I/O Connection Object State established.**
3. **There are two ways to access I/O devices. One method is by the way of the I/O connection object. Another is by using an explicit message to set/get the I/O attribute of application object.**
4. **Release the use of the Predefined Master/Slave Connection Set.**