I-7565-DNM USB / DeviceNet Master Module
# Quick Start Manual

1.   Introduction

This quick start manual introduces users how to implement the I-7565-DNM module to their application quickly. Therefore, it is only provided with the basic instructions. For more detailed information, please refer to the I-7565-DNM manual. Users can download the manual from the ICPDAS website:

https://www.icpdas.com/en/download/index.php?model=I-7565-DNM-G

This manual will help you quickly to familiarize yourself with the I-7565-DNM module and DeviceNet communication. Here, we use an example to show how to use the I-7565-DNM. For more the detail information, please refer to the user's manual of the I-7565-DNM.

2.   The steps of the I-7565-DNM to access I/O data

The DeviceNet Communication Protocol is based on the concept of connections method. Master should create connections to slave devices based on the commands of exchanging information and I/O data. To establish master control mechanism, there are four main steps to be followed. The figure demonstrates the basic process for the DeviceNet master communication.
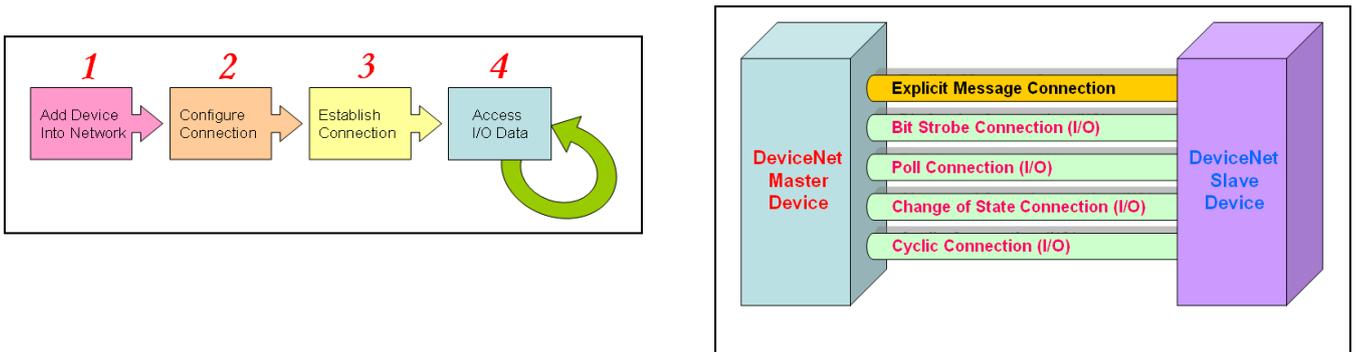

3.   Terminal resister/Pin assignment/Indicator LED

● 120Ω Terminal Resister Setting
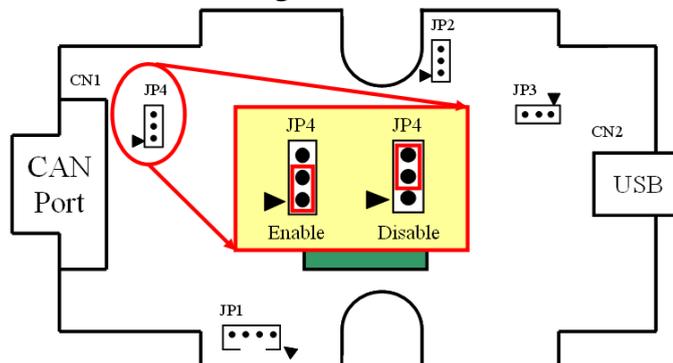
● Pin assignment
  (1) 9-pin D-sub male connector

Male Connector

CAN_L   CAN_H   CAN_GND
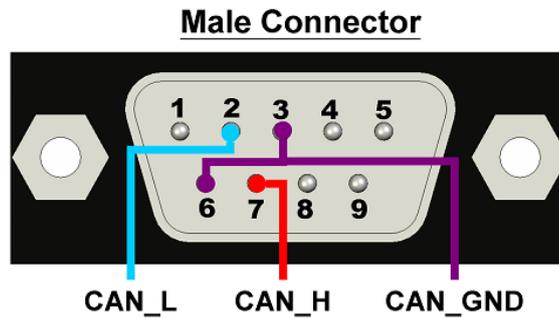
● Indicator LED

LED	Status	Description
NS	Off	This indicates that there is no error on the bus and about the MAC ID.
	Twinkle	This indicates that there are errors on the bus which maybe the situations as shown bellow: (a) The CAN connector doesn't connect to the slave devices. (b) The power of the slave devices is off. (c) The MAC ID collision between master and slave devices is occurring.
RUN	Off	This indicates that there are some errors on the bus or in the I-7565-DNM module. The DeviceNet firmware is not running.
	Twinkle	This indicates that the CAN bus works fine. But there is no any slave devices configuration in the I-7565-DNM's EEPROM. The DeviceNet firmware is waiting for configuration.
	On	This indicates that the DeviceNet firmware is running. The I-7565-DNM module is communicating with the slave devices.
MS	Off	This shows that all of the slave devices are communicating with the I-7565-DNM normally.
	Twinkle	This shows that at least one slave device occurs communication errors. Maybe the configuration errors or slave devices errors happened.

4.   Driver installation

The driver of I-7565-DNM can be used in Win7/10 Windows environments. Then the installation process will copy the related material to the indicated directory and register the driver on your computer. The driver target directory is below for the different systems.

x86 Driver –**C:\Windows\SysWOW64\DRIVERS**

x64 Driver –**C:\Windows\SYSTEM32\DRIVERS**

The other data and resource is copied to the following directory: **C:\ICPDAS\I-7565-DNM **

You can find the software in the website
https://www.icpdas.com/en/download/index.php?model=I-7565-DNM-G

After installing the software, the related software, demos and manuals are also installed in your PC.
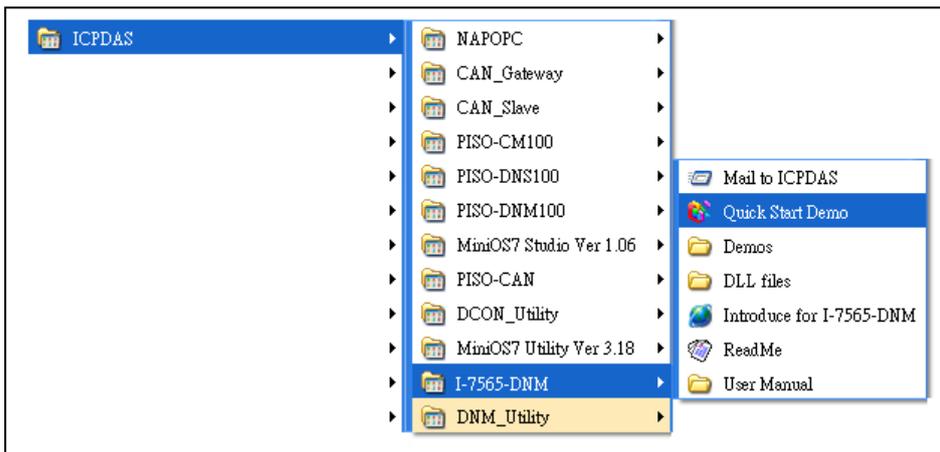

5.   DeviceNet Master Utility

You can find the software in the website
https://www.icpdas.com/en/download/show.php?num=1962&model=I-7565-DNM-G
After installing the software, the utility is installed in the path below.
   **C:\ICPDAS\DNM_Utility\DNM_Utility.exe**
Please refer to the manual of utility to know the detail. The utility features as follows.
● Supports to search all devices and specific device in the network.
● Can configure the I/O connection by searched devices or manual setting.
● Can access and monitor the I/O data of all the slave devices easily.
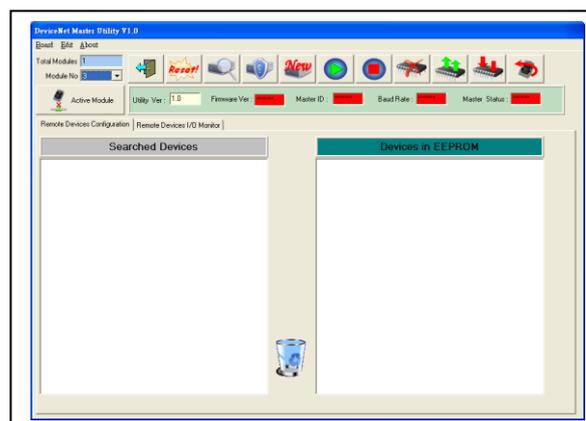
6.   Ten steps to read/write the remote devices

1. Clicking "ActiveModule" button to active the specific board which you have selected in the "Module No" field.
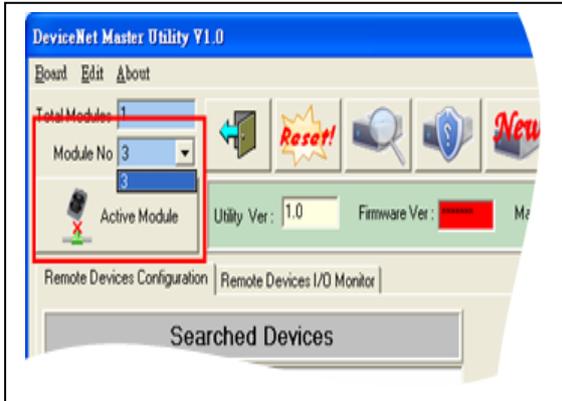

2. The utility will read all configurations from the EEPROM. And the message window would pop-up.
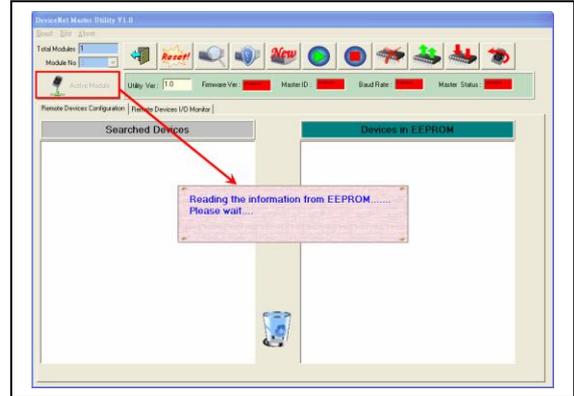
3. Pressing the "Search all Devices" to search the whole devices. It takes about 30 seconds.
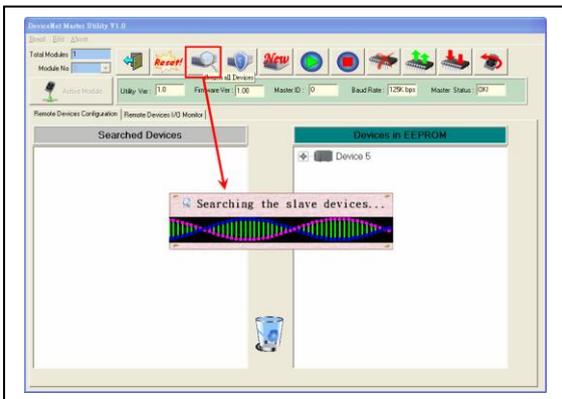
4. Expanding the device to find out more I/O connection information.
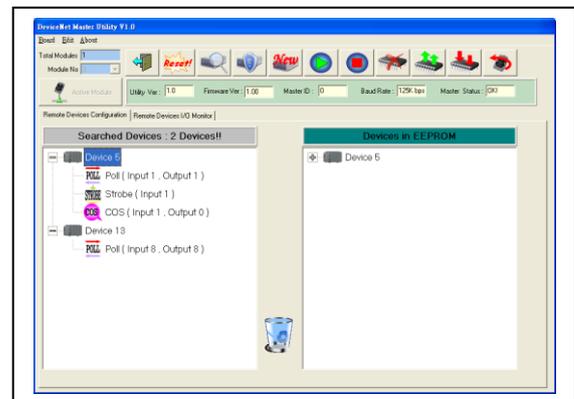


5. Selecting the I/O connection items and drags it into the right side to add the I/O information into the EEPROM.
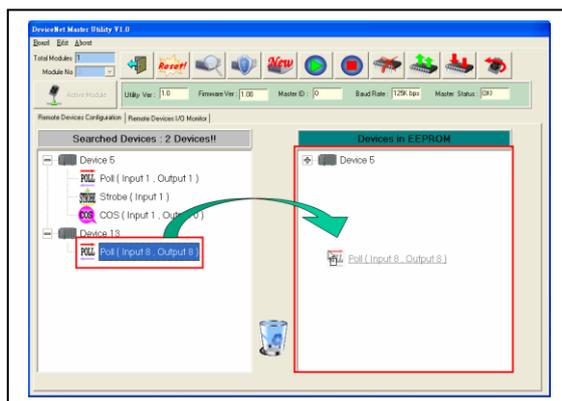

6. If the mission is successful, the users would see the successful message and the item have been added into the EEPROM field.
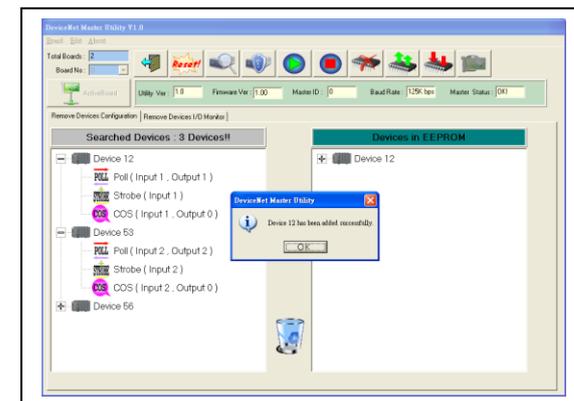
7. Pressing "Start all Device" button to communicate with all slave devices.We can ignore the warning message in this example.
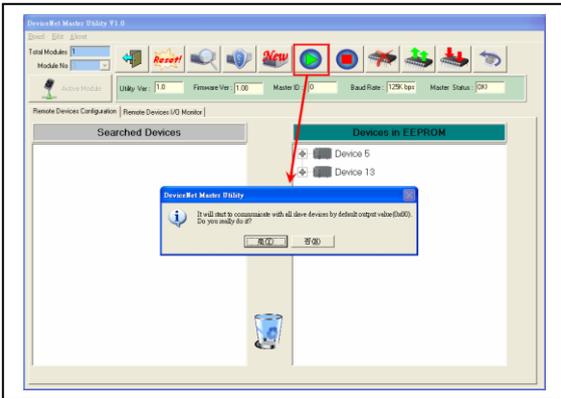
8. Clicking "Remote Device I/O Monitor" page to view the I/O data of the slave devices.
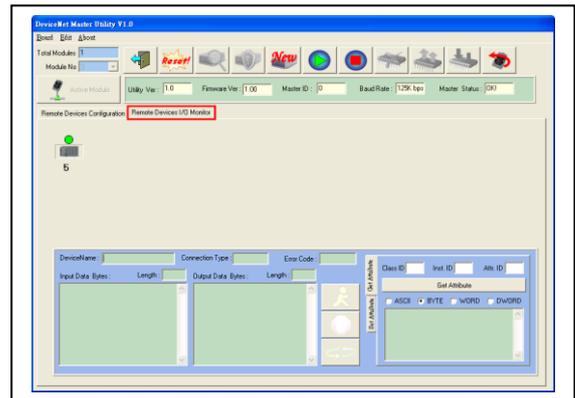
9. Pressing the icon picture to display the device information, including the device name and input data.
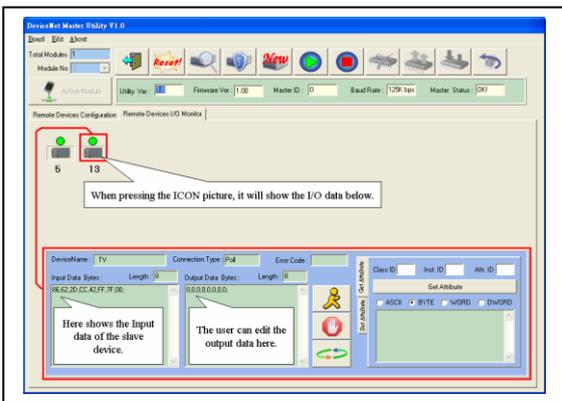
10. Pressing "Refresh output data" button to send the output data to the slave device.
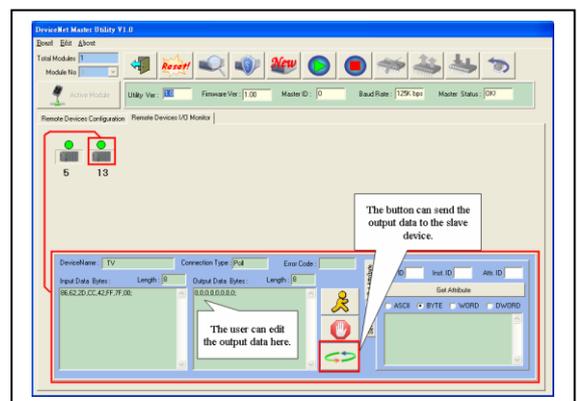
7.   Example for the Quick Start Demo application

Users can development their DeviceNet application by applying the API functions. We provide the demos for users to show how to implement the system. They can get the latest demos from the website. After installing the SDK, the demos will be copy to the **C:\ICPDAS\I-7565-DNM \.** The quick start demo is a good reference for users to get into the DeviceNet application by I-7565-DNM. Please follow the process step by step.

1. Prepare for the equipments below (PC or Notebook, I-7565-DNM, CAN-8124, I-8077).
   Plug I-7565-DNM into the PC's USB port and plug I-8077 into CAN-8124's slot. I-7565-DNM 's CAN_H to CAN-8124's CAN_H and I-7565-DNM 's CAN_L to CAN-8124's CAN_L as the following figure.

DC GND — V— Pin 1
CAN_L — Pin 2
SHIELD — Pin 3
CAN_H — Pin 4
DC 10-30V — V+ Pin 5

CAN-L   Shield
CAN-H

I-8077   CAN-8124   I-7565-DNM

CAN Bus
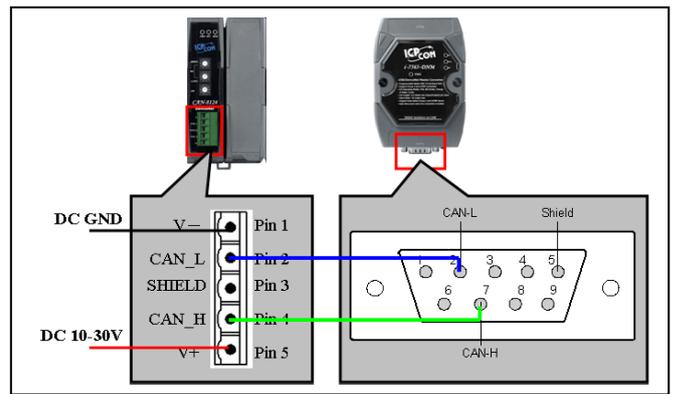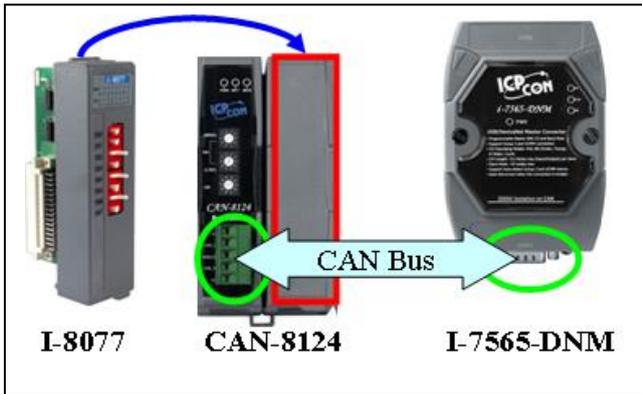
2. Configure the baud rate and MAC ID of CAN-8124. In this example, please set
   MSD = 1, LSD = 2, DR = 0 as follows. (MAC ID = 12, Rate = 125)

MSD: the most significant
digit of the node address.

LSD: the low significant
digit of the node address

(MSD)
NA
(LSD)

DR

Rotary Switch Value	Baud rate (K BPS)
0	125
1	250
2	500

3. Click that item to run "QuickStartDemo.exe". The user will see the following picture in the screen.

4. The demo will search how many I-7565-DNM modules in the PC automatically.

I-7565-DNM Quick Start Demo

Total 1 modules in the PC
01. Actived Module 3
02. Active Selected Module
03. Clear EEPROM
04. Add Device ID 12
05. ID 12 Config Poll
06. Start Device ID 12
07. Read Device ID 12
08.
09. Write Device ID 12

I-7565-DNM Quick Start Demo

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When starting the demo
program, it will search
how many I-7565-DNM
module in the PC
automatically.

5. The drop-down list will show you all the USB ports connecting with the I-7565-DNM module.

Here shows all the ID of the USB port. The users can select one of them to be active.
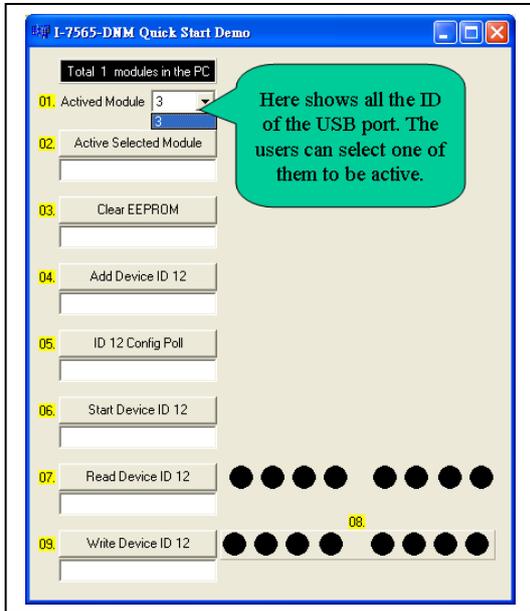
6. In this step, users can press the "Active Selected Module" button to make the I-7565-DNM to be started. The edit box below will show the result.

This function will make the I-7565-DNM module to be active.

Here shows the result of the active-module function. If the function has done successfully, it shows "OK!".
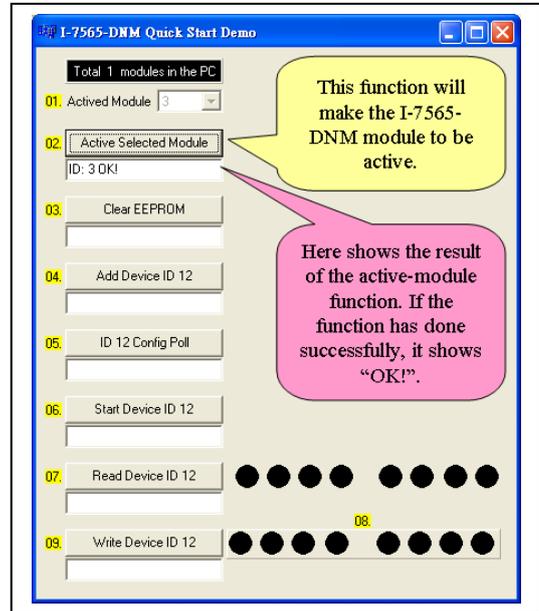
7. In this step, the user can press the "Clear EEPROM" button to clear all setting in the I-7565-DNM. The edit box below will show the result.

This function will clear all setting in the EEPROM of the I-7565-DNM.

After clearing EEPROM, it will shows the result here. If the function has done successfully, it shows "OK!".
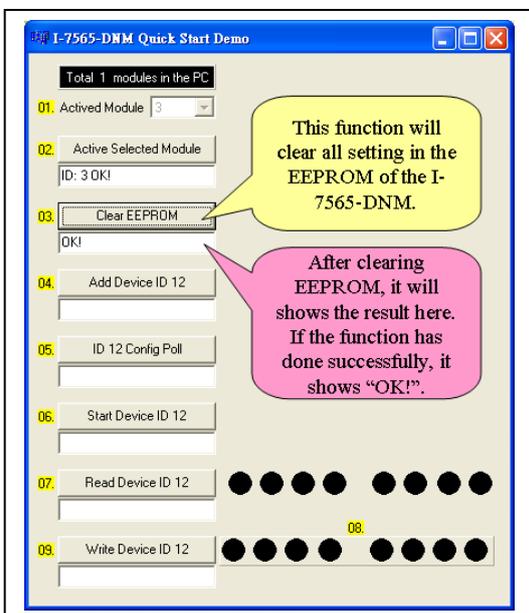
8. In this step, users can press the "Add Device ID 12" button to add the information of the slave device (ID = 12) into the EEPROM of the I-7565-DNM.

This function will add the slave device (ID = 12) into the EEPROM of the I-7565-DNM.

After adding the device, it will shows the result here. If the function has done successfully, it shows "OK!".
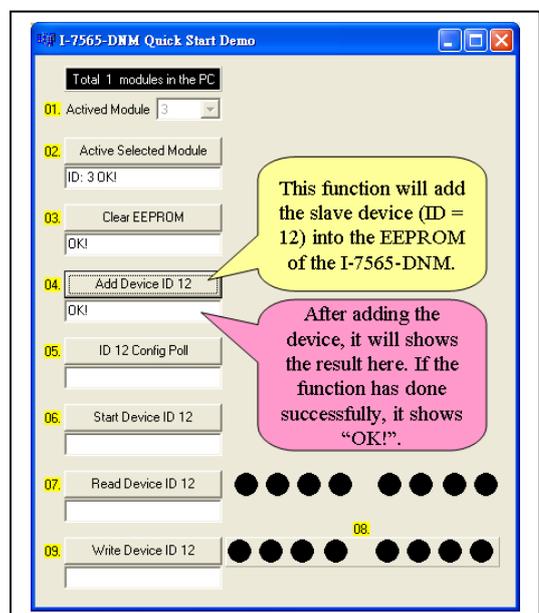
9. In this step, the user can press the "ID 12 Config Poll" button to add the Poll connection information of the slave device (ID = 12) into the EEPROM of the I-7565-DNM.

This function will add the Poll connection information of the slave device (ID = 12) into the EEPROM of the GW-7304.

After adding the configuration, it will shows the result here. If the function has done successfully, it shows "OK!".

10. In this step, the user can press the "Start Device ID 12" button to start communicating with the slave device (ID = 12) by the previous configuration.

This function will start to communicate with the slave device (ID = 12) by the previous configuration.

After starting communicating, it will shows the result here. If the function has done successfully, it shows "OK!".
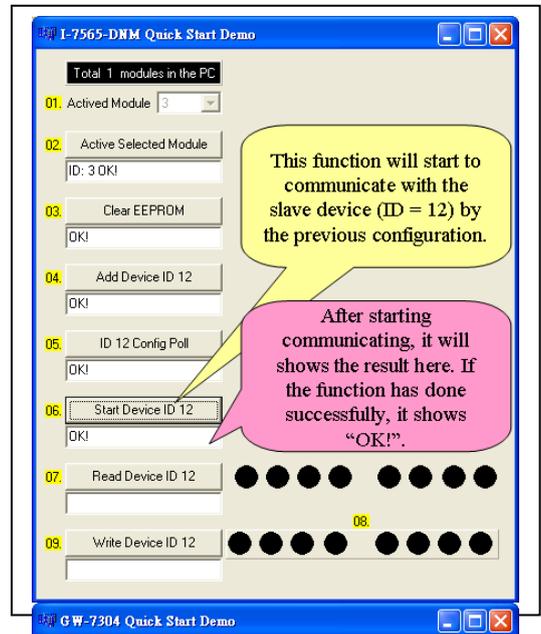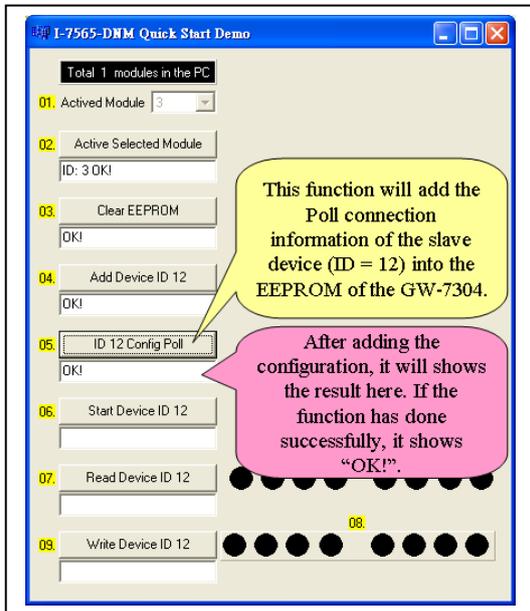
11. In this step, users can press the "Read Device ID 12" button to read the input data of the slave device (ID = 12). The input data is from the I-8077's 8 dip-switches. After changing the dip-switches, users can press the button again to refresh the LED status.


This function can read the input data of the slave device (ID = 12). After changing the input data, the user can press the button to refresh the LED at the right side of the button.

There are 8 LED to indicate the I-8077's input value of the 8 dip-switches.

After reading the input data, it will shows the result here. If the function has done successfully, it shows "OK!".

12. In this step, users can press these 8 LED button to edit the output data. And send the data to the output channel of the slave device (ID = 12) by pressing "Write Device ID 12" button to send the output data to the output channel of the slave device (ID = 12). At the same time, the D/O LED on I-8077 will show the same value.

This function can write the output data which you have set in the step 08 to the output channel on the slave device (ID = 12).

After writing the output data, it will shows the result here. If the function has done successfully, it shows "OK!". At the same time, the output channel of the I-8077 will show the same value.
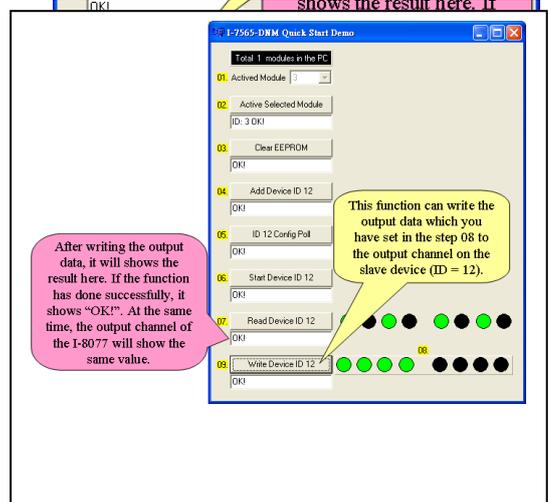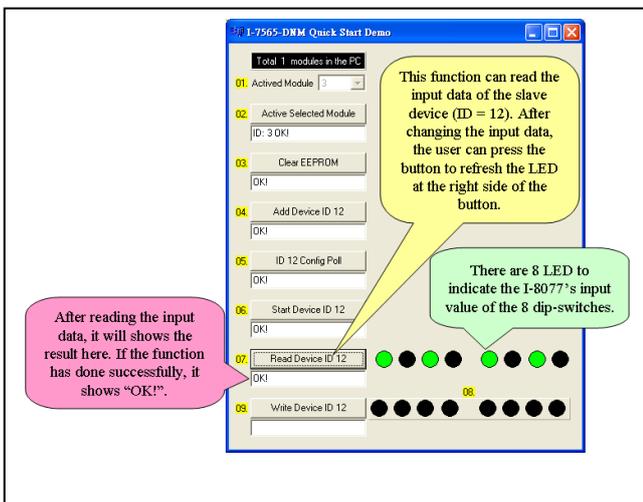
Note :
    We provide the source code of the quick start demo program. Therefore, users can

use this demo program to start developing your DeviceNet application. About the API detailed information, please refer to the I-7565-DNM user manual.