I-87124 DeviceNet Master Module
Quick Start User Guide

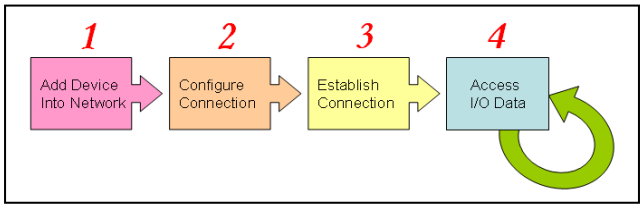
1. Introduction

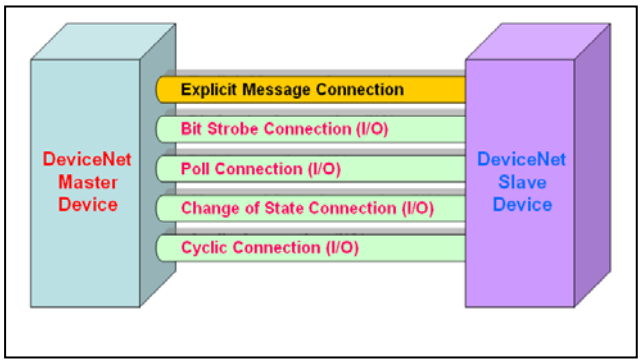
This Quick Start User Guide introduces users how to implement the I-87124 module to their application quickly. Therefore, it is only provided with the basic instructions. For more detailed information, please refer to the I-87124 manual in the ICPDAS CD-ROM. Also, users can download the manual from the ICPDAS web site:
http://www.icpdas.com/products/Remote_IO/can_bus/i-87124.htm

This manual will help you quickly to familiarize yourself with the I-87124 module and DeviceNet communication. Here, we use an example to show how to use the I-87124. For more the detail information, please refer to the user's manual of the I-87124.

2. The steps of the I-87124 to access I/O data

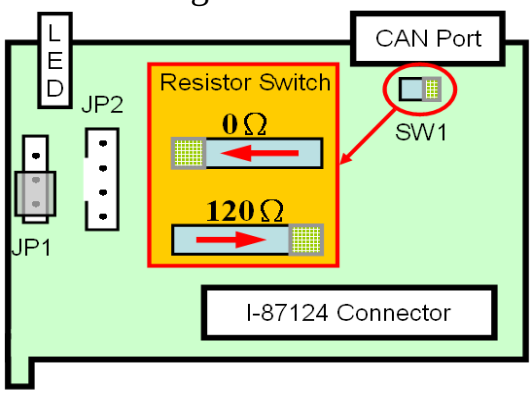
The DeviceNet Communication Protocol is based on the concept of connections method. Master should create connections to slave devices based on the commands of exchanging information and I/O data. To establish master control mechanism, there are four main steps to be followed. The figure demonstrates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





3. Terminal resister/Pin assignment/Indicator LED

- 120Ω Terminal Resister Setting



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● Pin assignment

(1) 5-pin male connector



Pin No.	Signal	Description
1	N/A	Not available
2	CAN_H	CAN_H bus line(dominant high)
3	CAN_Shield	Optional CAN Shield
4	CAN_L	CAN_L bus line(dominant low)
5	N/A	Not available

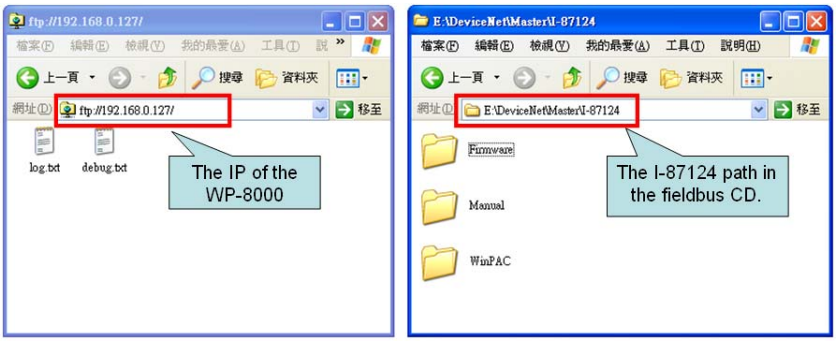
● Indicator LED

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-87124 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-87124's EEPROM. The DeviceNet firmware is waiting for configuration.
	On	This indicates that the DeviceNet firmware is running. The I-87124 module is communicating with the slave devices.
MS	Off	This shows that all of the slave devices are communicating with the I-87124 normally.
	Twinkle	This shows that at least one slave device occurs communication errors. Maybe the configuration errors or slave devices errors happened.

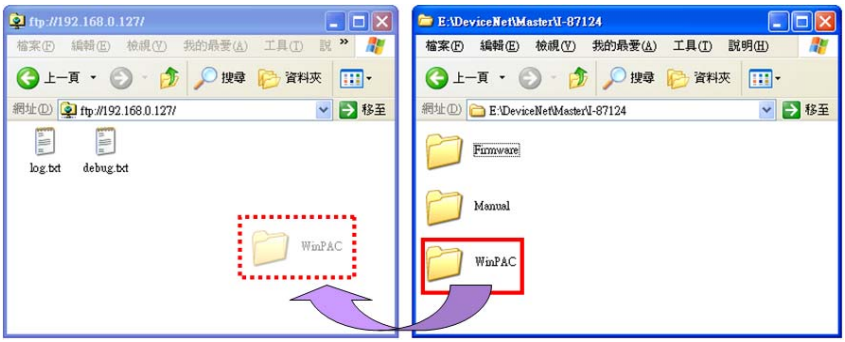
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4. Driver & Utility Installation

(1) Please find out the IP address of the WP-8000. And prepare for the Fieldbus CD.



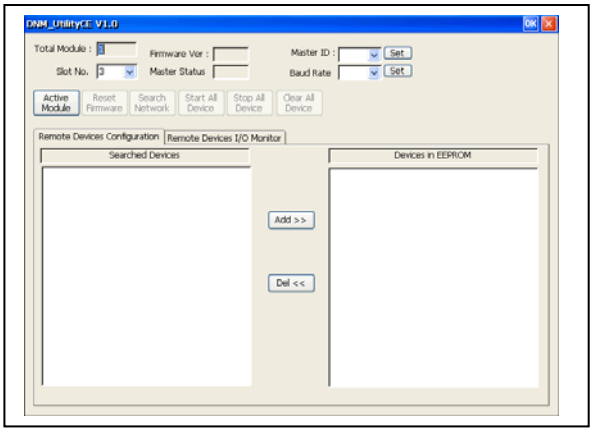
(2) Please drag the “WinPAC” icon from Fieldbus CD to the WP-8000.



5. DeviceNet Master Utility

You can find the software in the Temp\WinPAC\DNM_UtilityCE\DNM_UtilityCE.exe in the WP-8000. Please refer to the I-87124 manual 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.



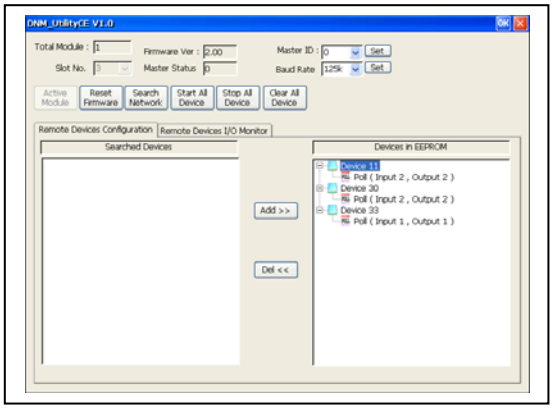
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6. Ten steps to read/write the remote devices

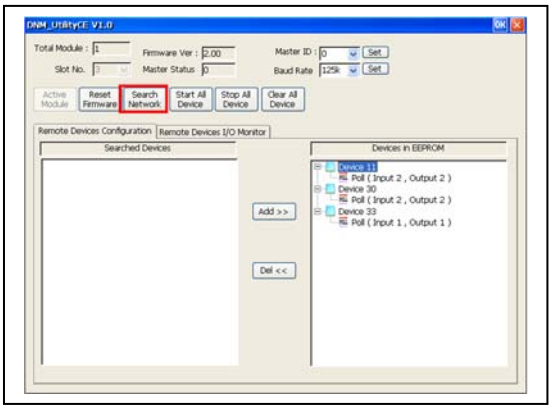
1. Clicking “Active Module” button to activate the specific module which you have selected in the “Slot No” field.



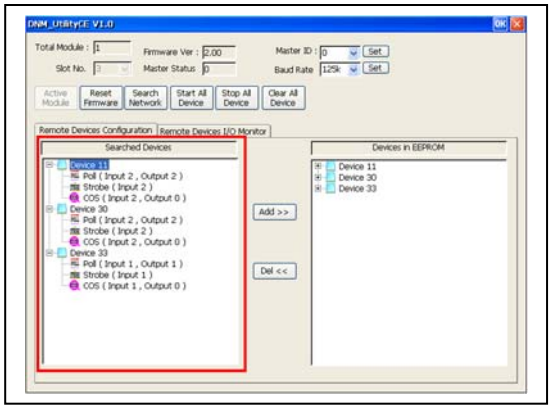
2. The utility will read all configurations from the EEPROM. And the message window would pop-up.



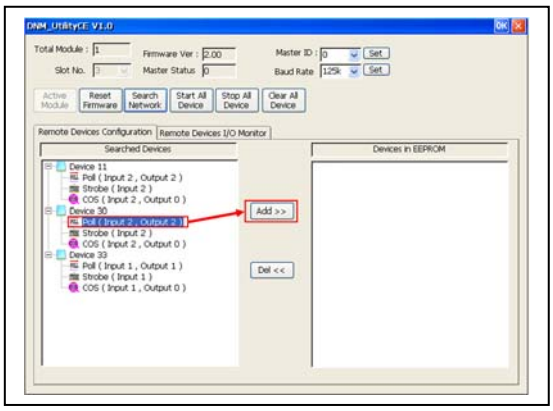
3. Pressing the “Search Network” to search the whole devices. It takes about 30 seconds.



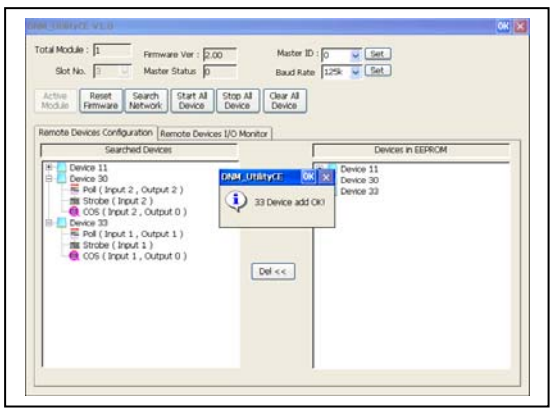
4. Expanding the device to find out more I/O connection information.



5. Select the I/O connection items and click the “Add>>” button to add the I/O information into the EEPROM.

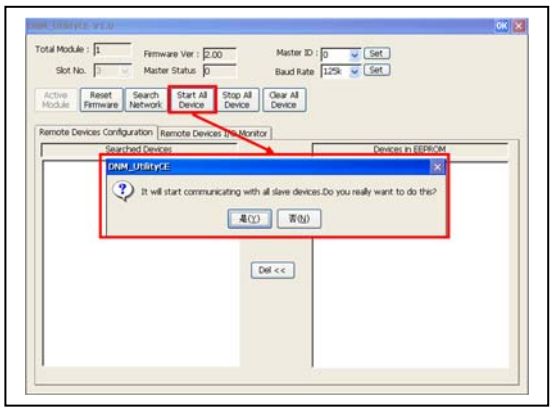


6. If the mission is successful, the users would see the successful message and the item has been added into the EEPROM field.

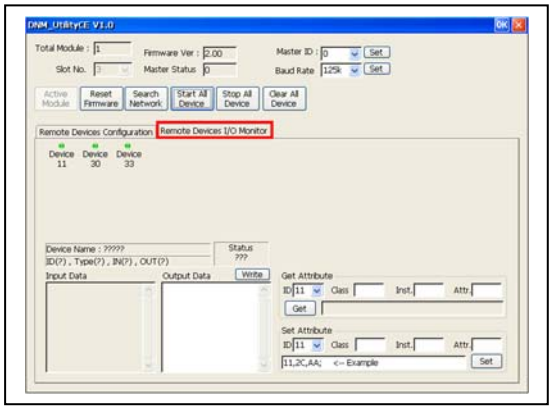


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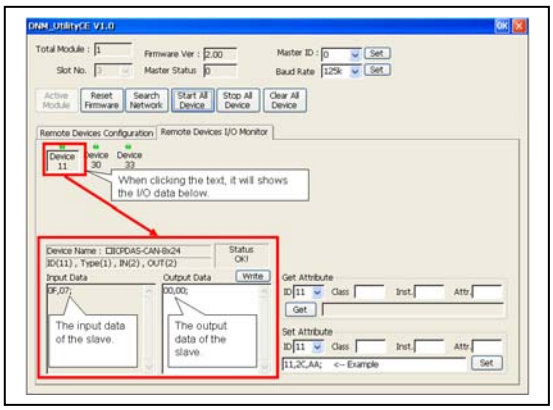
7. Press “Start all Device” button to communicate with all slave devices.



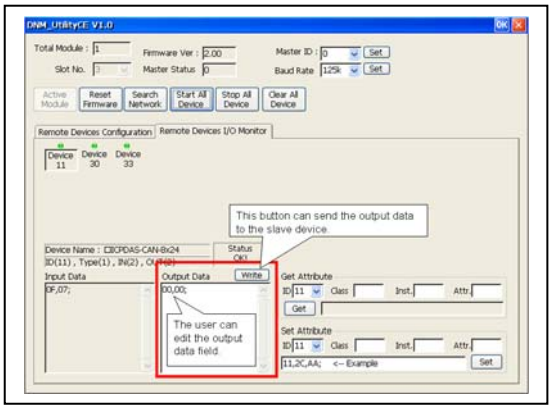
8. Click “Remote Device I/O Monitor” page to view the I/O data of the slave devices.



9. Press the device text to display the device information, including the device name and input data.



10. Press “Write” button to send the output data to the slave device.

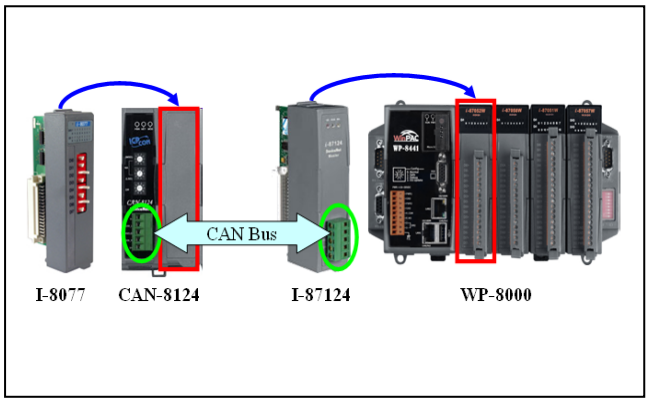


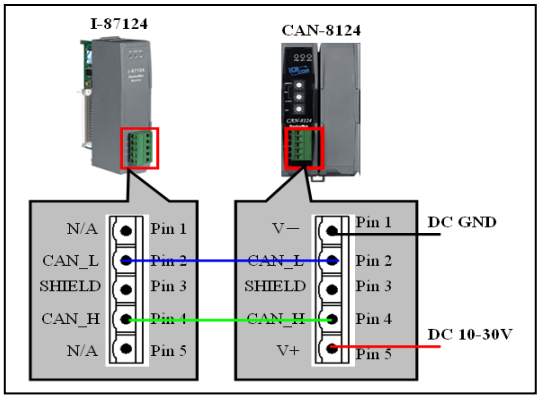
7. Example for the Quick Start Demo application

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 demos from the shipping CD or web. The quick start demo is a good reference for users to get into the DeviceNet application by I-87124. Quick Start Demo is in the path of Temp\WinPAC\Quick Start Demo\I87124_QuickStart.exe. Please follow the process step by step.

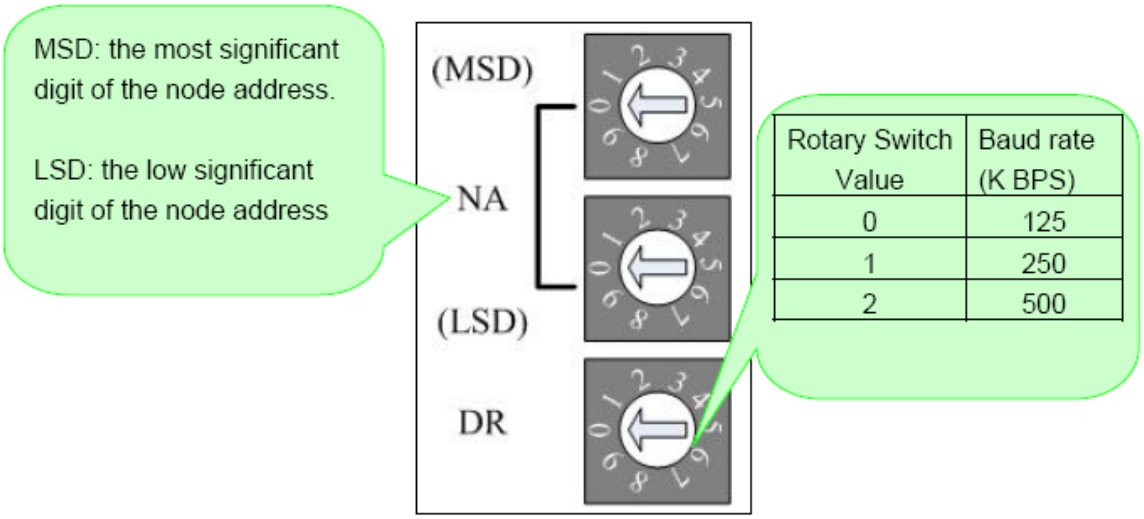
1. Prepare for the equipments below (I-87124, CAN-8124, I-8077).
   Plug I-87124 into the WP-8000 and plug I-8077 into CAN-8124's slot. Connect the I-87124's CAN_H to CAN-8124's CAN_H and I-87124's CAN_L to CAN-8124's CAN_L as the following figure.

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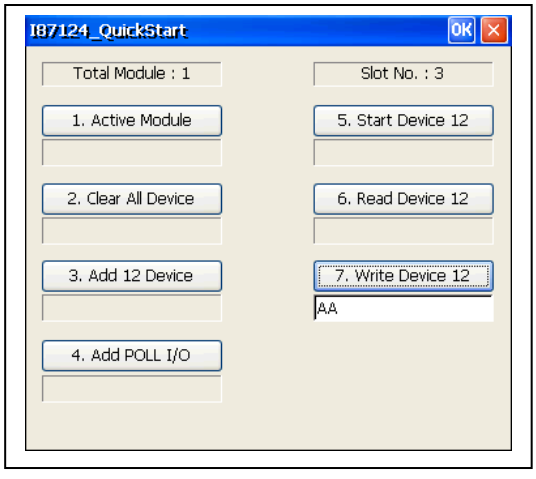




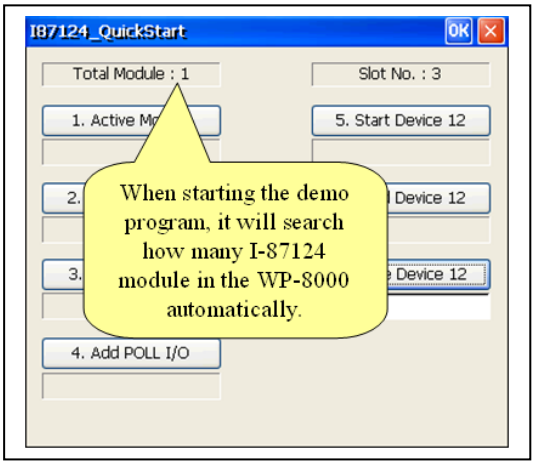
2. Configure the baud rate and MAC ID of CAN-8124. In this example, please set MSD = 1, LSD = 2, DR = 0 as follows. (MAC ID = 12, Rate = 125)



3. Click "I87124_QuickStart.exe". The user will see the following picture in the screen.

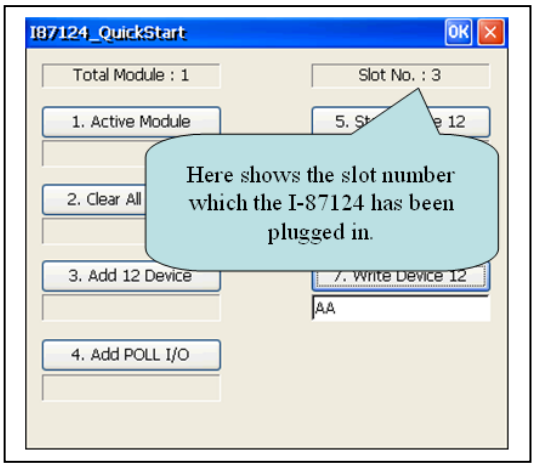


4. The demo will search how many I-87124 modules in the WP-8000 automatically.

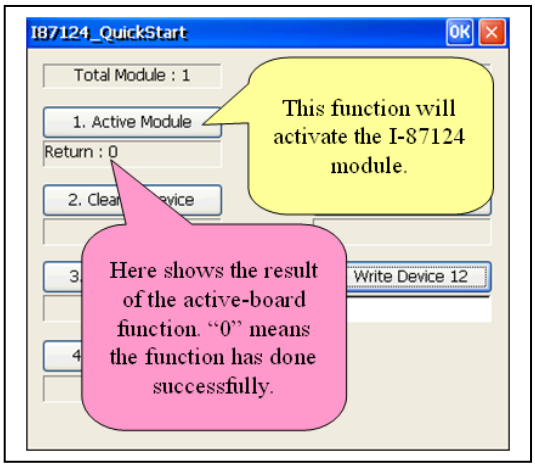


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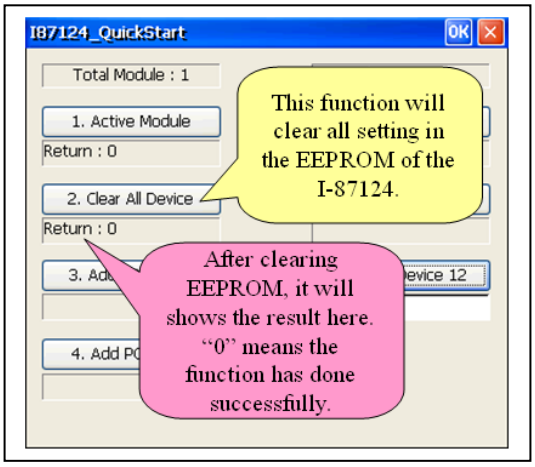
5. The message box will show you the slot number which the I-87124 module has been plugged in.



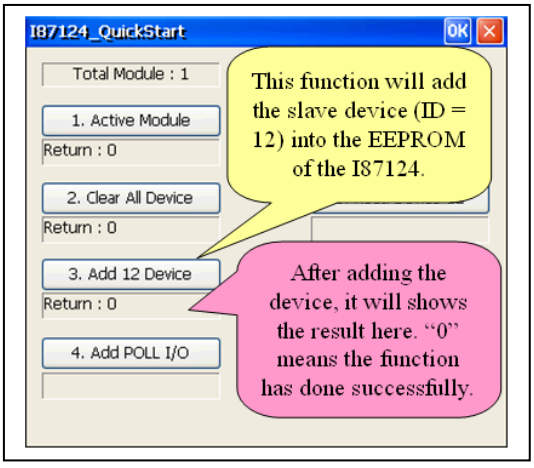
6. In this step, users can press the "Active Module" button to activate the I-87124. The edit box below will show the result.



7. In this step, the user can press the "Clear All Device" button to clear all setting in the I-87124. The edit box will show the result below.

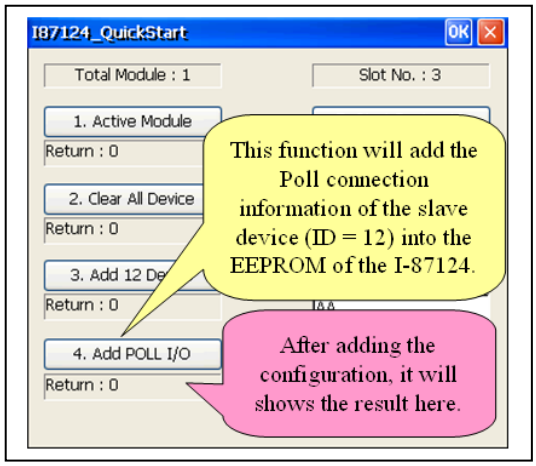


8. In this step, users can press the "Add 12 Device" button to add the information of the slave device (ID = 12) into the EEPROM of the I-87124.

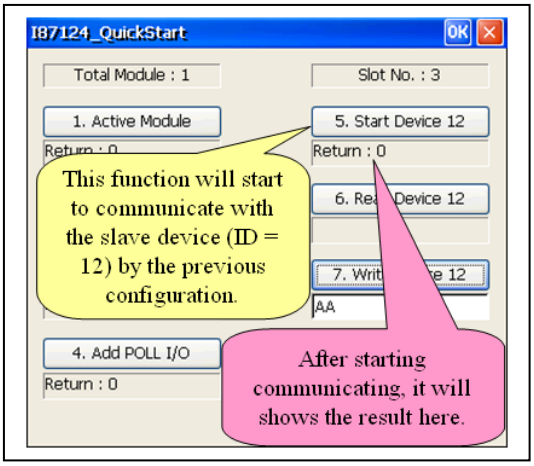


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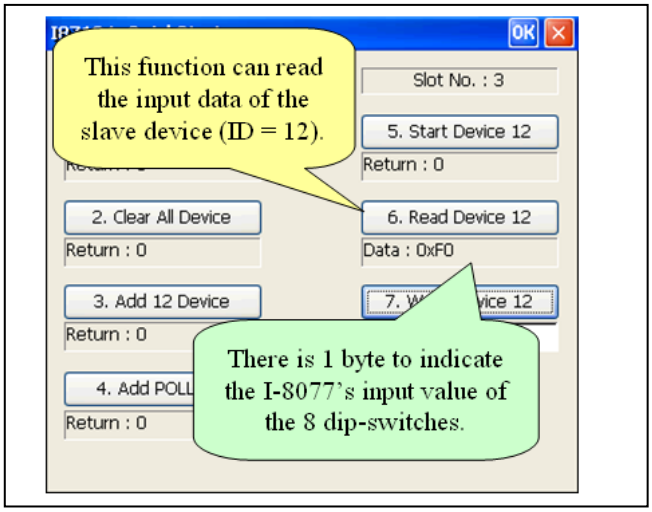
9. In this step, the user can press the “Add POLL I/O” button to add the Poll connection information of the slave device (ID = 12) into the EEPROM of the I-87124.



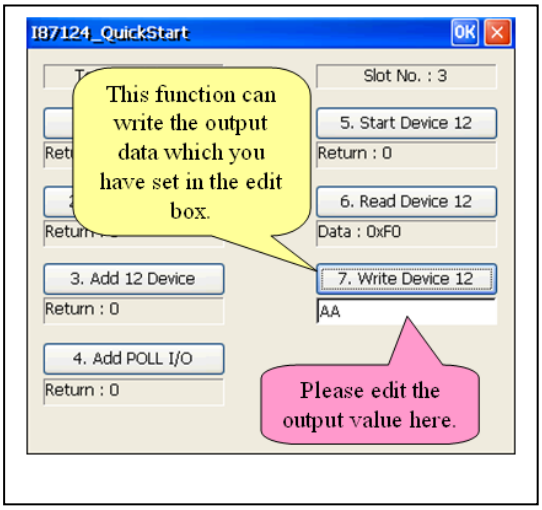
10. In this step, the user can press the “Start Device 12” button to start communicating with the slave device (ID = 12) by the previous configuration.



11. In this step, users can press the “Read Device 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.



12. In this step, users can edit the output data. And send the data to the output channel of the slave device (ID = 12) by pressing “Write Device 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.



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-87124 user manual.

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