# I-7243D
# MODBUS TCP Server/DeviceNet Master Gateway

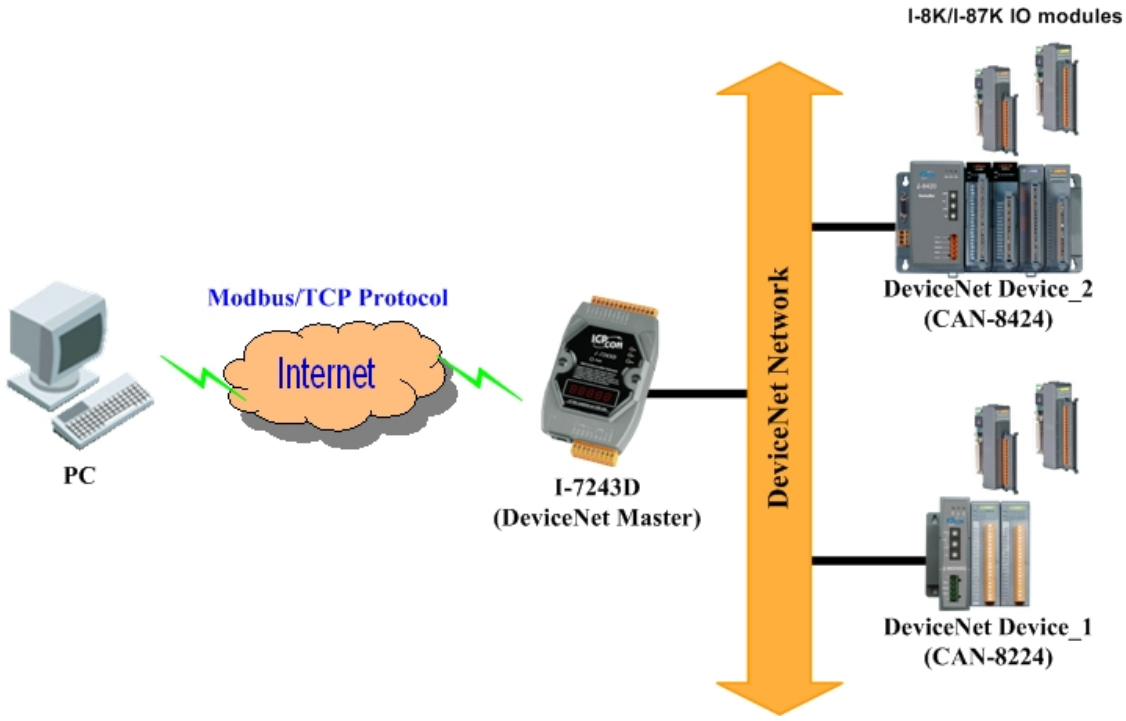
## Quick Start User Guide

### 1. Introduction

This manual introduces the user to the methods used to implement the I-7243D module into their applications in a quick and easy way. This will only provide with the basic instructions. For more detailed information, please refer to the I-7243D user manual located on the ICPDAS CD-ROM or download it from the ICPDAS web site:

CAN_CD:\DeviceNet\Gateway\I-7243D\Manual or
http://www.icpdas.com/products/Remote_IO/can_bus/i-7243d.htm

The goal of this manual is focused on helping users to quickly familiarize themselves with the I-7243D module and the CAN-Ethernet communication gateway. Here, we use one I-7243D and two DeviceNet devices as the example that will demonstrate how to use the I-7243D modules. The architecture of this example is depicted below.



After configuring and letting the I-7243D start to communicate with these two DeviceNet devices by Utility tool, users can get the data of these two devices via communicating with the I-7243D with Modbus/TCP protocol.

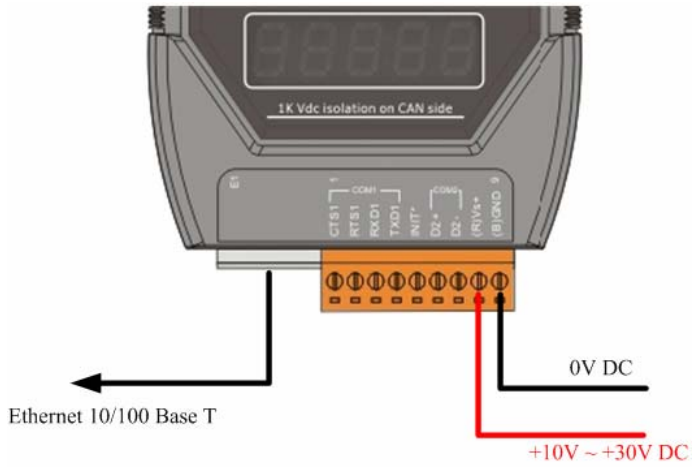
## 2. Hardware Installation

**Step1:** Here, we use two DeviceNet devices, the attributes of them are shown below. They are CAN-8424 and CAN-8224 separately.

Device 1: MACID: 0x01, support Poll IO connection, Baud-rate: 125Kbps
Produced connection size: 2 bytes
Consumed connection size: 2 bytes

Device 2: MACID: 0x02, support Poll IO connection, Baud-rate: 125Kbps
Produced connection size: 16 bytes
Consumed connection size: 8 bytes

**Step2:** Connect the (R)Vs+ and (B)GND pins of the I-7243D module to the DC power supply (10~30VDC).



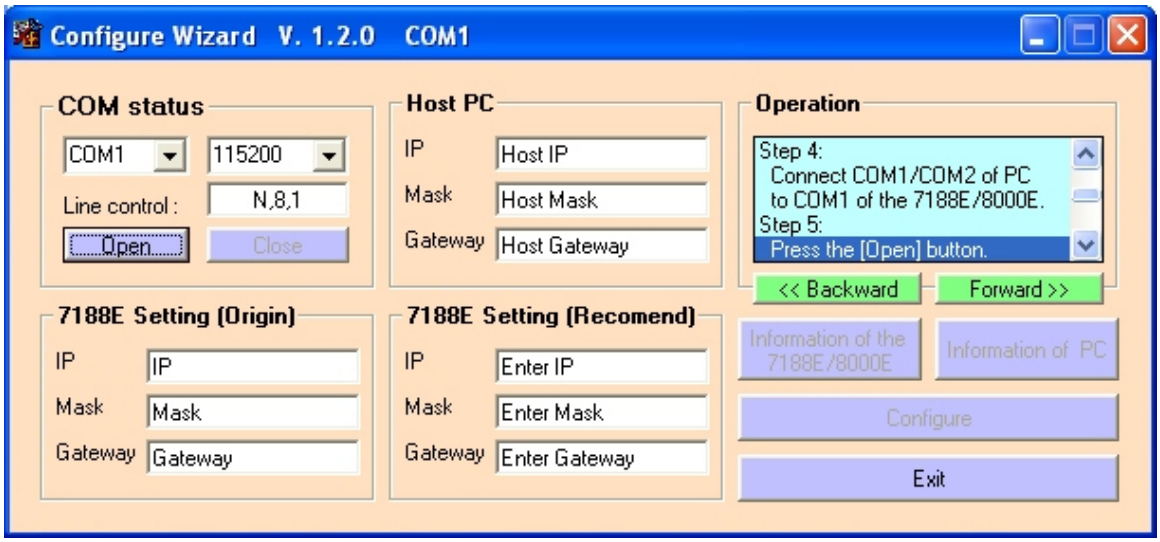

**Step3:** Connect the Ethernet ports of the I-7243D and the PC to the hub with standard network cable respectively.

**Step4:** Connect the CAN ports of the I-7243D with these two DeviceNet devices

## 3. Configure the I-7243D with these two DeviceNet devices

Before starting the I-7243D gateway tests, users need to configure the parameters of it via the “Configuration Wizard” and “I-7243D Utility” tools. The details of this procedure are shown below. For more information about setting steps, please refer to section 5 of the I-7243D’s user’s manual.

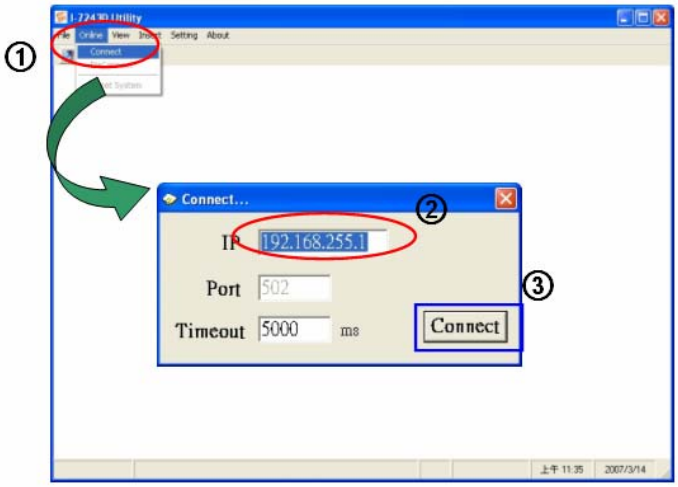
**Step1:** Configure the network parameters via “Configuration Wizard”



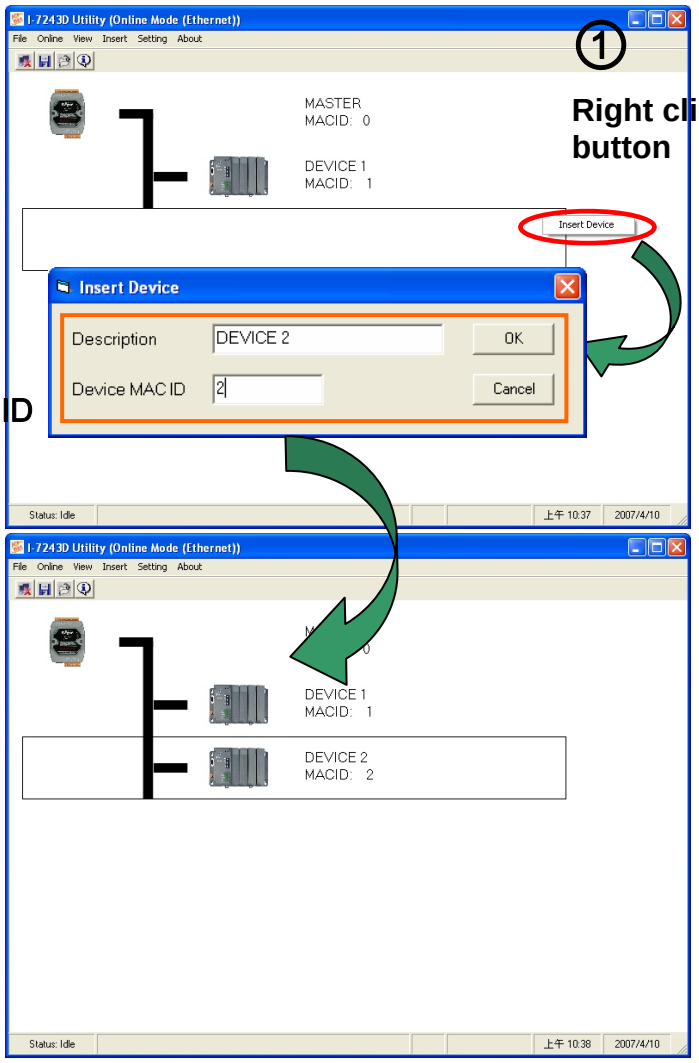

To Use the Configuration Wizard, you must first install PCDiag.
( 8000CD:\Napdos\7188e\TCP\PCDiag\Setup\Setup.exe )

**Step2:** After configuring the network setting of the I-7243D, users can use the I-7243D Utility tool to configure it with these two DeviceNet devices.

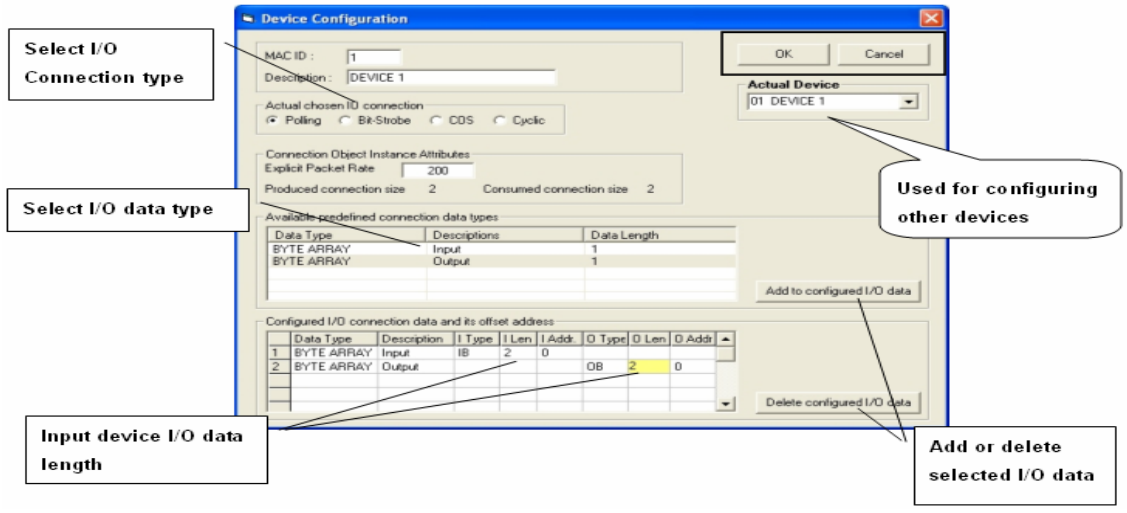
**Step3:** Click the “Connect” button to connect with the I-7243D. These steps are shown in the following figure.



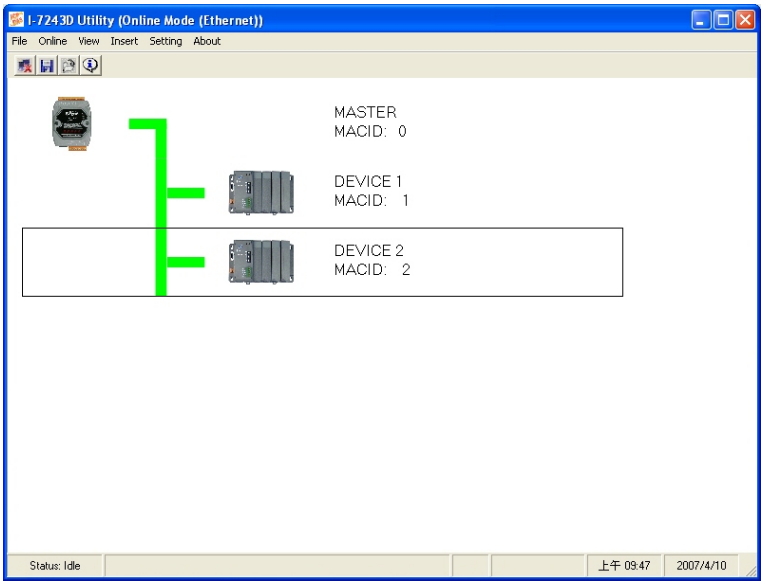
**Step4**: Click right of the mouse button to add these two devices into I-7243D's scan-list table.



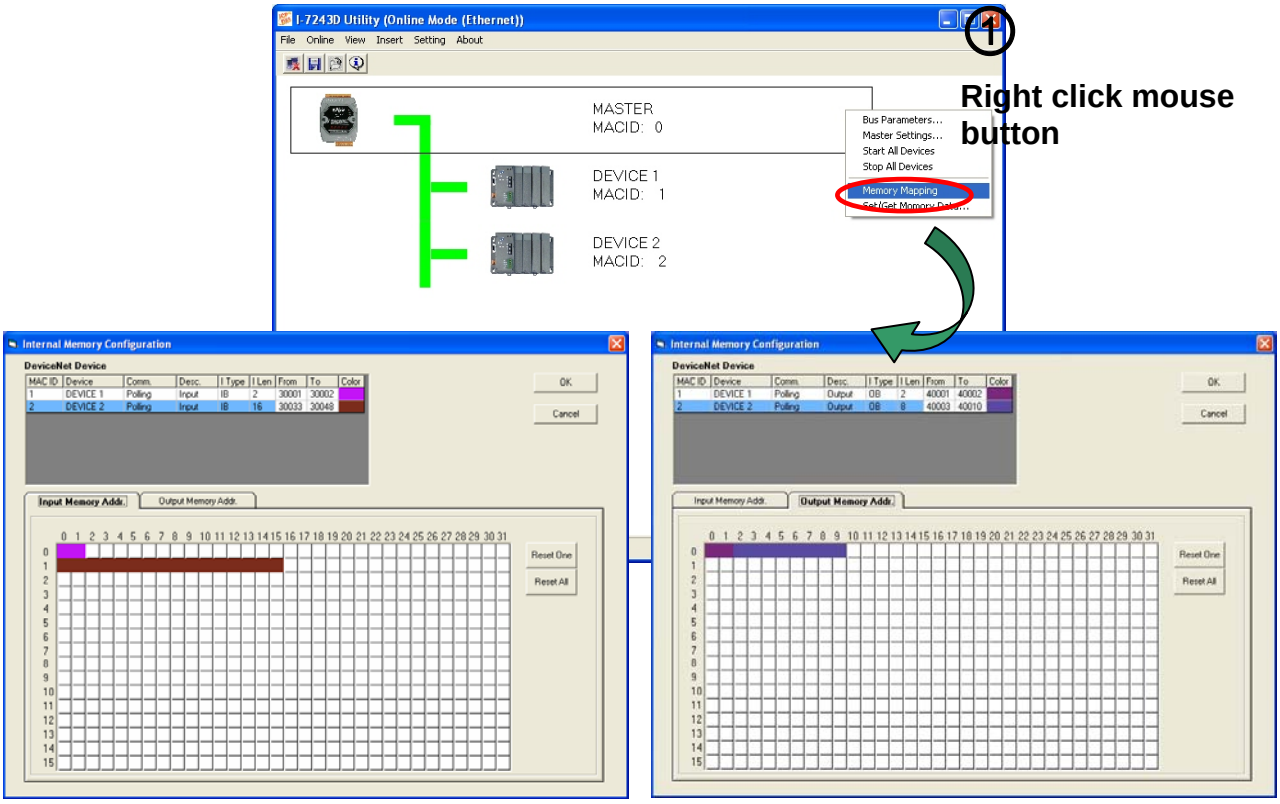

**Step5**: Now users need to configure the connection parameters between the I-7243D and these two parameters by double click the left of mouse button on the device's picture.



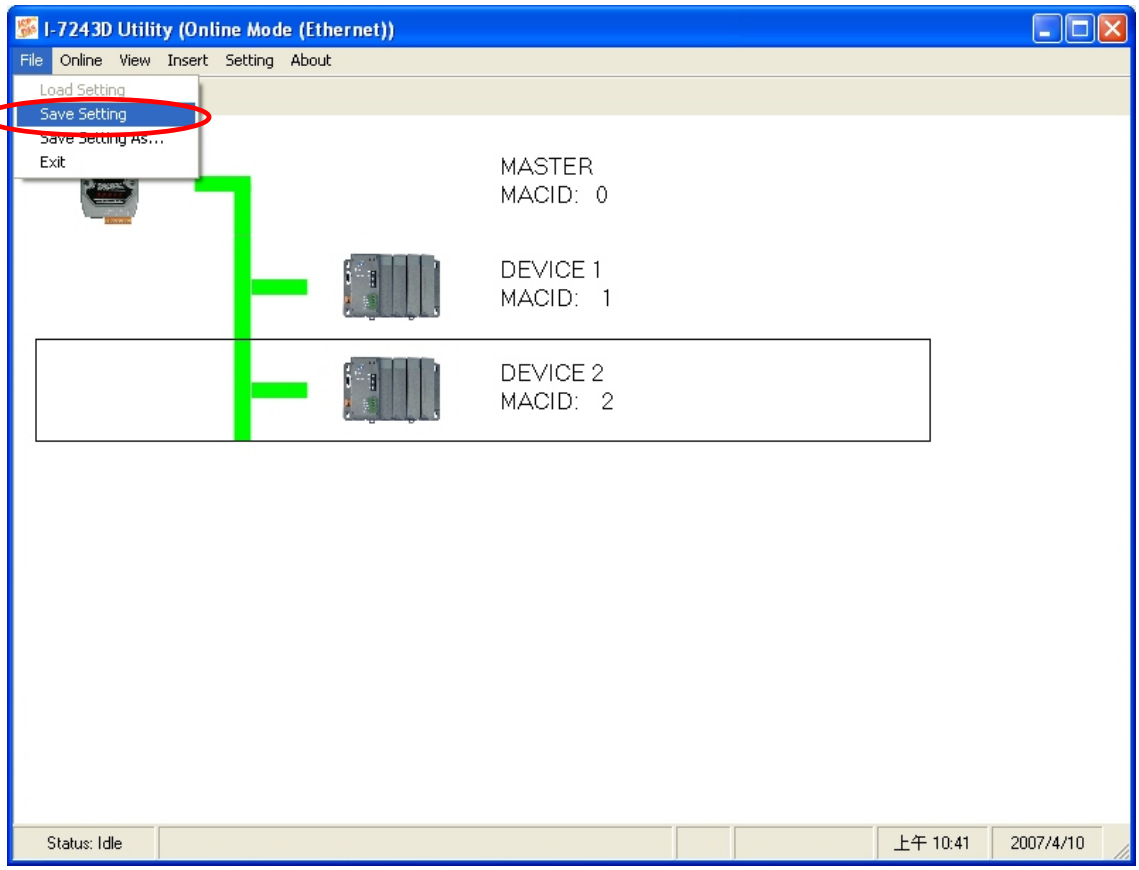
**Step6**: After configuring these two devices, the I-7243D will start to communicate with two devices. And the Utility will start to monitor the status of the I-7243D.




**Step7**: Finally, users need to map these two devices' IO connection data path into I-7243D's Input/Output Data Area. So that users can get/set IO data from/into IO Data Area via Modbus/TCP function 16 command, force multiple registers, to get/set these two DeviceNet devices' IO data.



**Step 8:** After clicking “Save setting”, the I-7243D Utility generates one record file (default file is called MBTCPDNM.ini). You can run the I-7243D Utility to load the record file to review all settings of specific I-7243D. If you forget to store these settings, you can still obtain the information for the I-7243D via Ethernet.

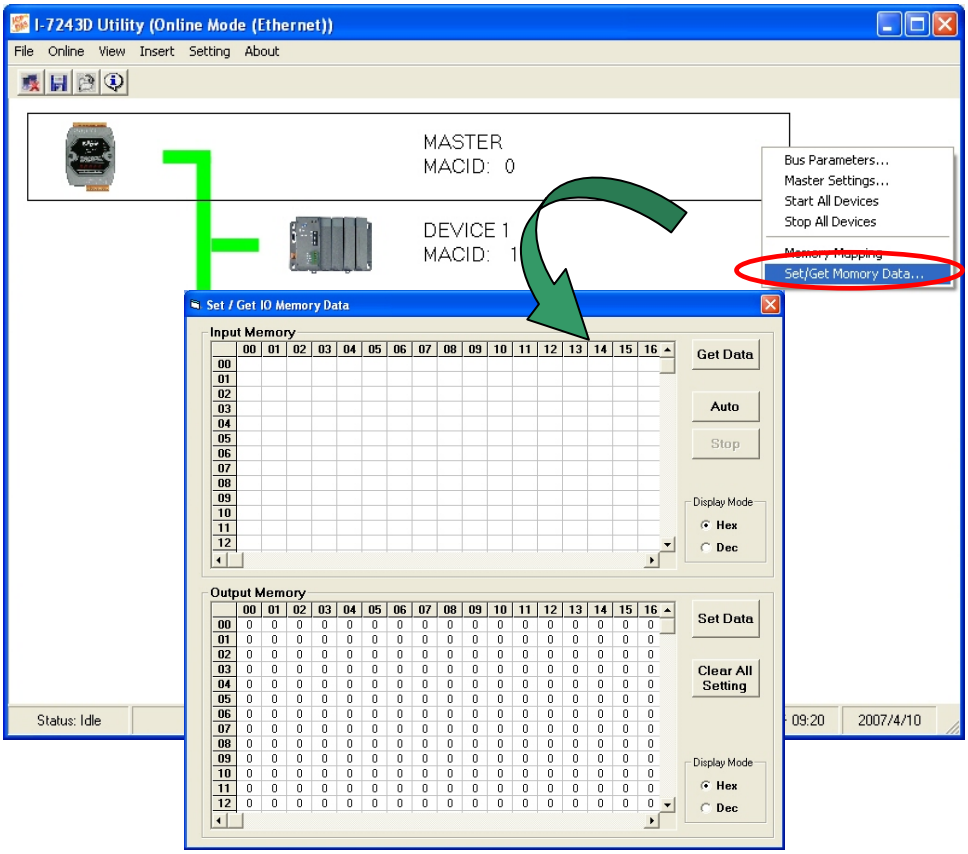


# 4. Get/Set the IO data of these two DeviceNet devices.

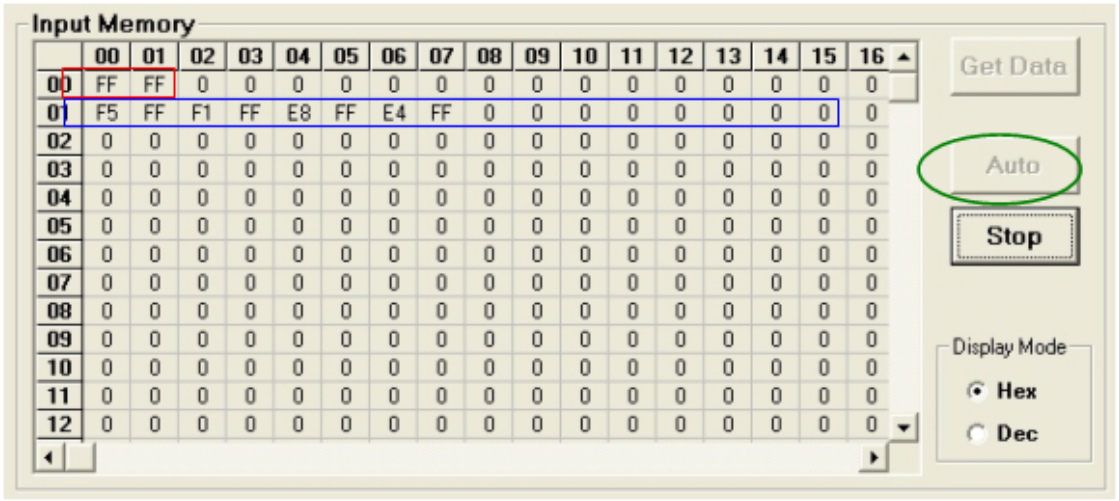
Then users can get/set the IO data of these two devices by the Utility tool. Or users can get/set the IO data of these devices via using Modbus/TCP function code 4 and 16 commands to set/get data to/from I-7243D's IO Data Area, The details of this procedure are shown below.

## *4.1 Get/Set Data By using the I-7243D Utility tool*

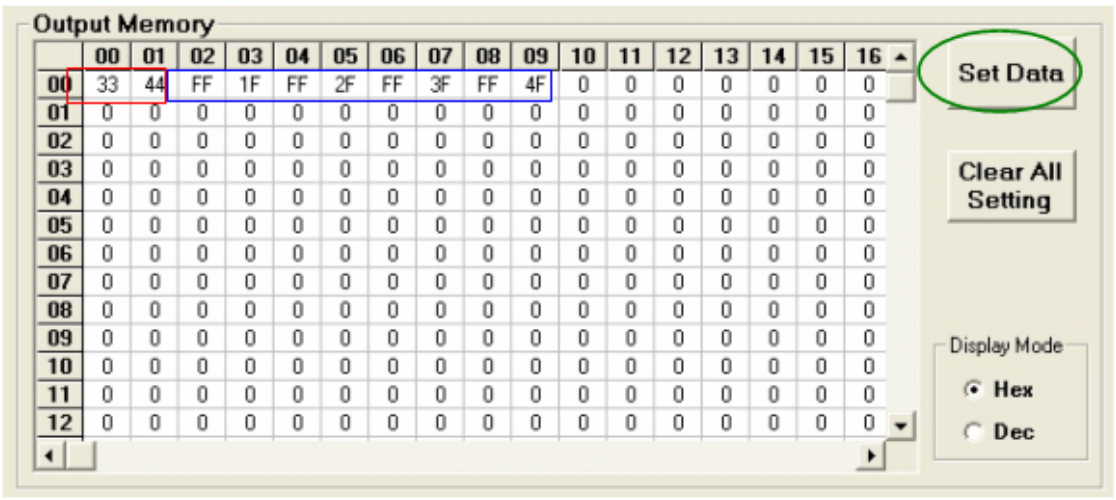
**Step1:** Open the "Set/Get IO Memory Data" window.



**Step2:** Users can get the Device1, 2 bytes polling input data, and Device2, 16 bytes polling data, on the Input Memory Table, 0000~0001 and 0100~0115 after click the “Get Data” button or “Auto button”.




**Step3:** By pressing the “Set Data” button, users also can set the data on the Output Memory Table into I-7243D’s output data area.



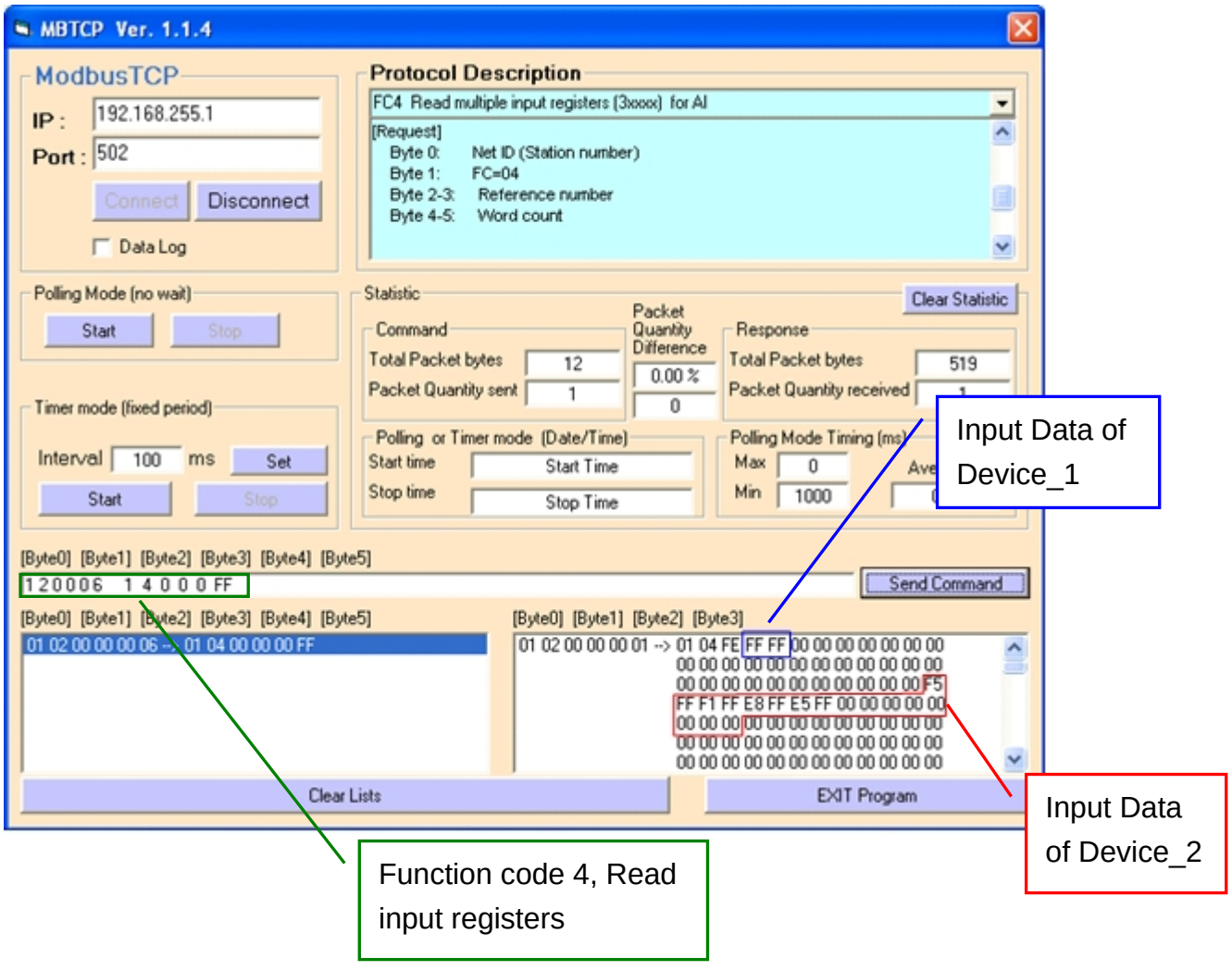
## *4.2 Get/Set Data By using the MBTCP tool*

The address of the Input/Output Data Area is form 0x00 to 0xFF, 256 words. Users can get /set these two devices data by using Modbus/TCP function code 4 and 16 commands to set/get data to/from I-7243D's IO Data Area. The following tables are the setting of the address mapping on the section 3, step7.

| Device | Connection Type | Data Type | Data Length | Mapping Address of IO Data Area |
|---|---|---|---|---|
| Device_1 | Poll | Input | 2 Bytes | Input Area: 0x00~0x01 |
| | | Output | 2Bytes | Output Area: 0x00~0x01 |
| Device_2 | Poll | Input | 16 Bytes | Input Area: 0x20~0x2F |
| | | Output | 8 Bytes | Output Area: 0x02~0x09 |

**Note: Here the setting of the I-7243D's Net ID is 0x01.**

**Step1**: Using Modbus/TCP function code 4, read input registers, to read devices' input data from I-7243D's Input Data Area.



**Step2**: Using Modbus/TCP function code 16, force multiple registers, to write output data into I-7243D's Output Data Area.