How to set the configuration of I-7000 modules?

Applies to:			No. L2-001
Platform	Software operating system	OS version	Classification
All LinPACs	All version	All version	Installation & Configuration

DCON protocol is a request/reply communication protocol for the I-7000/8000/87K series I/O modules. It defines a simple ASCII format protocol. User can refer to *<DCON Utility Pro User Manual>* for more detailed information:
http://www.icpdas.com/en/download/show.php?num=1041&root=&model=&kw=DCON%20Utility

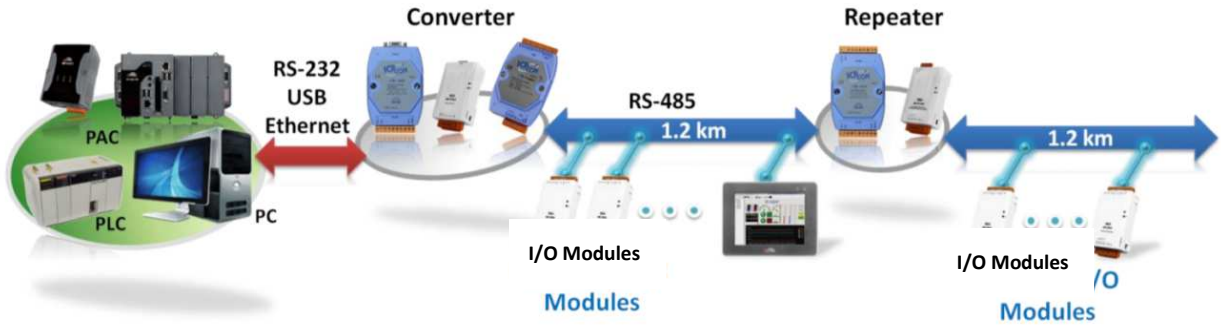
This article illustrates how to control the Digital Output function using the I-7060 modules, which is connected to the LP-8421 controller.

There are two methods of configuring the I-7000 modules. The first uses **DCON Utility** to check the configuration and the second access Linux command directly, each of which is introduced here.

I. DCON Utility

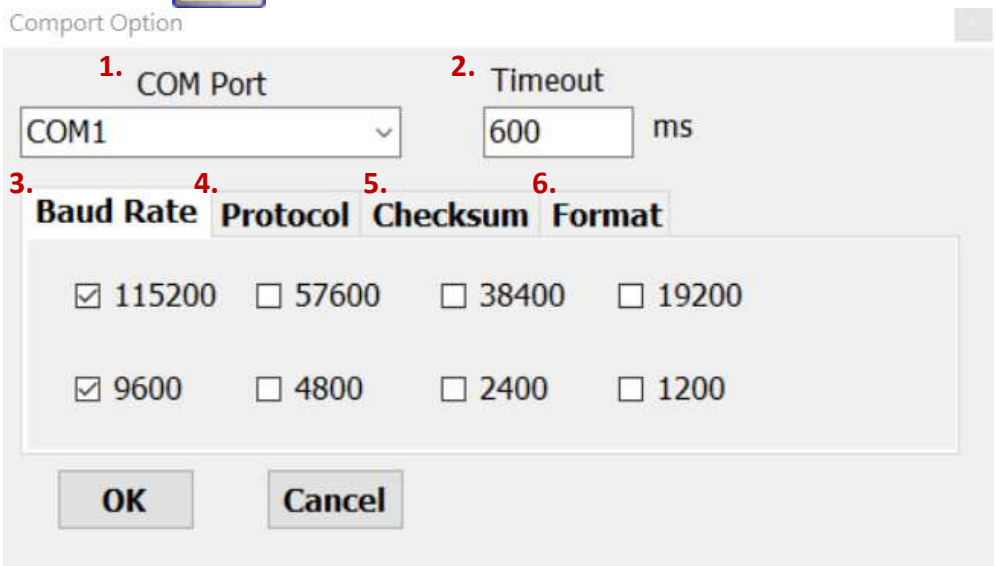
DCON Utility is a toolkit which provides user an easy way to make use of I-7000 modules, it can be downloaded from the following link:
http://www.icpdas.com/en/download/show.php?num=1046&root=&model=&kw=DCON%20Utility

Before start connecting the device, make sure the I/O modules are correctly wired, the basic wiring is illustrated below:



Searching connected device

Press the COM Port bottom  to set the communication configuration:

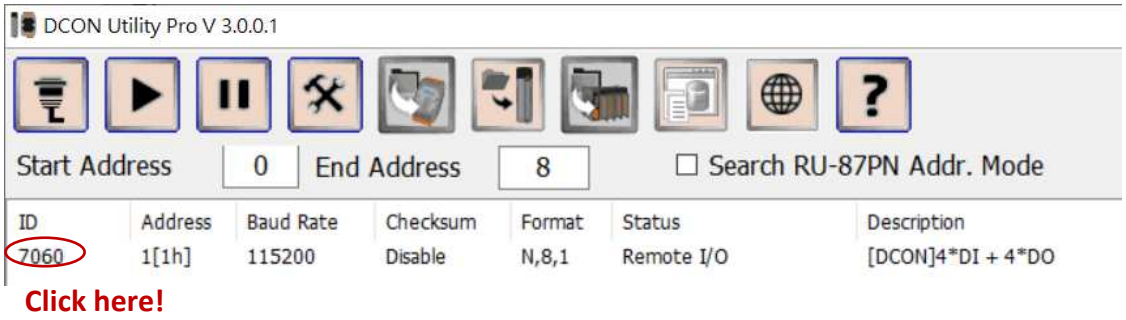


1. COM Port: the comport for I-7000 modules is COM1
2. Timeout: default timeout 600ms
3. Baud Rate: default baud rate are 9600 and 115200
4. Protocol: default option are DCON and Modbus RTU
5. Checksum: default option is “Disabled”
6. Format: default option are “N,8,1” and “E,8,1”

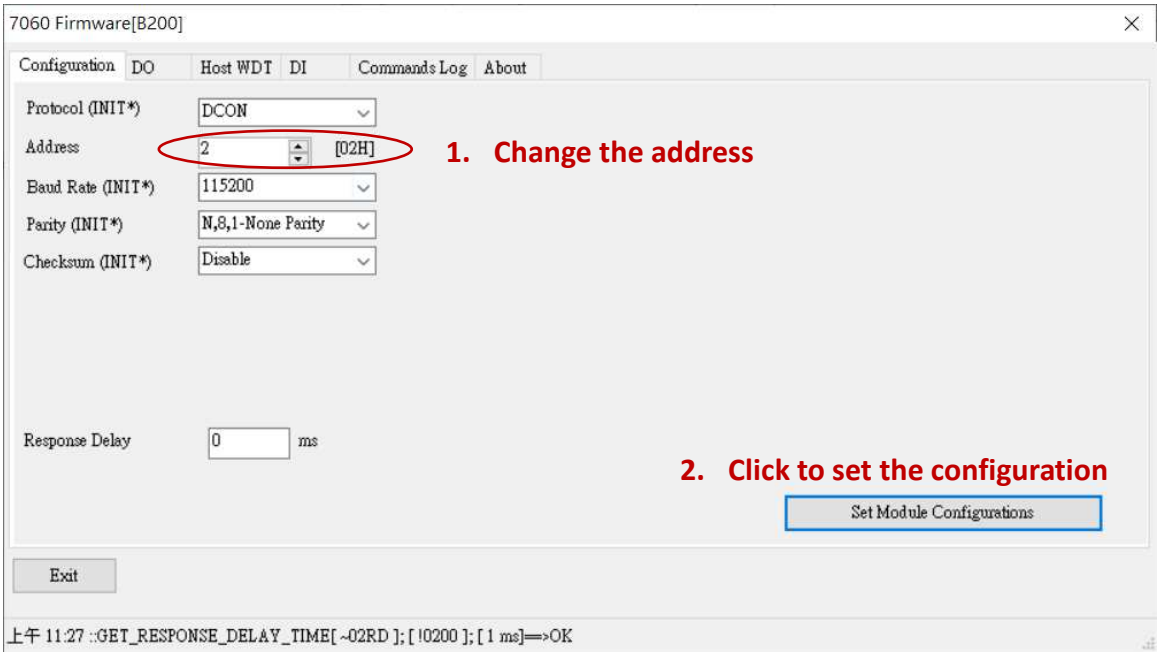
Press the Start Search bottom  to search and press the Stop Search bottom  when found all connected devices.

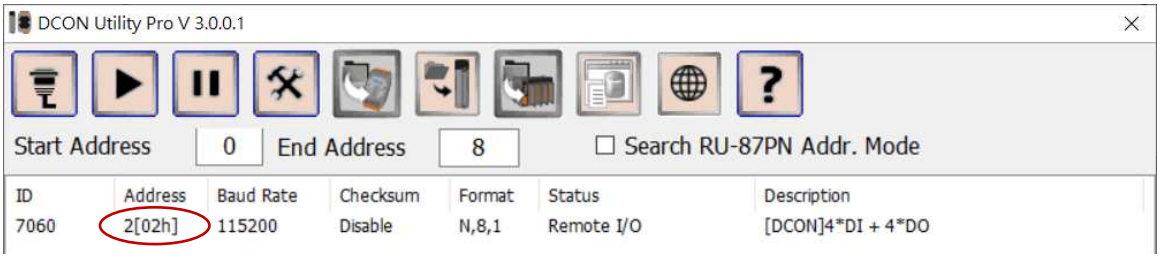
Edit the configuration of the module

User can edit the configuration by clicking the module ID:



Example 1: change the address from “01” to “02”.





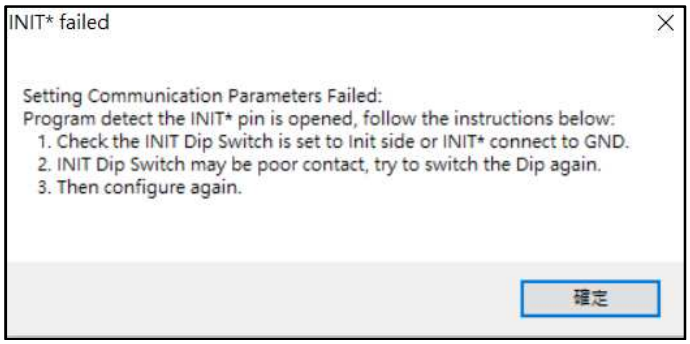
Example 2: change the baud rate from “115200” to “9600” bps, user should set the device to “**INIT Mode**” (the rear slide switch set to the INIT position as shown in the figure below for modules with frame ground, or with the **INIT*** pin connected to the **GND** pin for modules), the new communication settings will be effective after the next power-on reset.

The INIT* pin connected to the GND pin

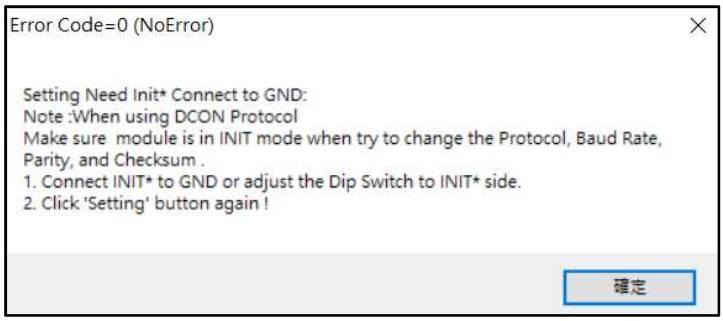
Or

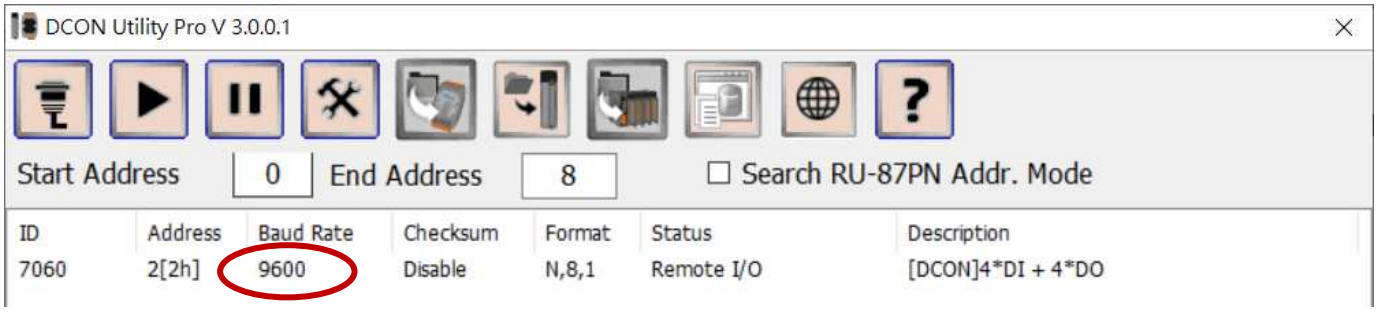
INIT Switch

If the device does not set to “INIT Mode”, the change will be failed:

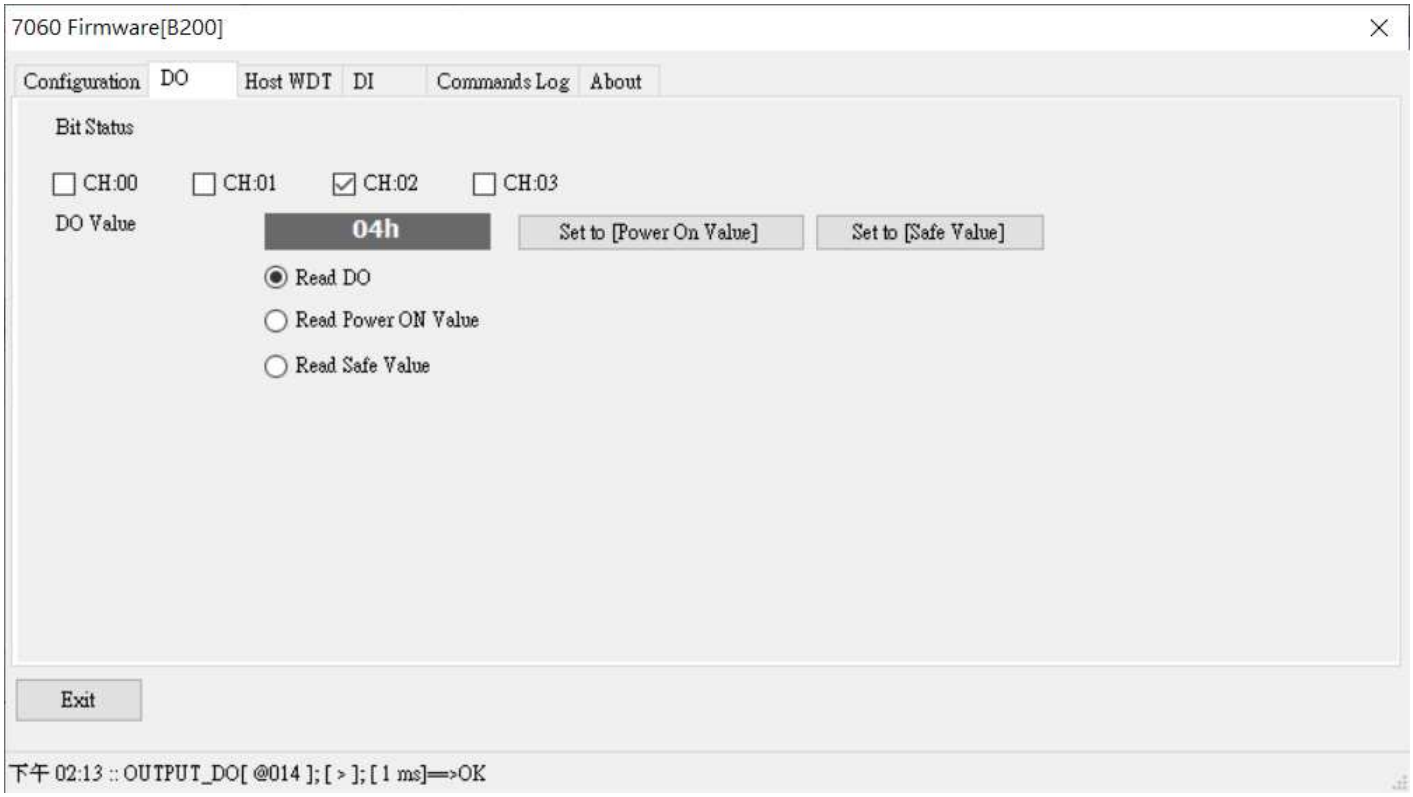


Computer will show the following screen if the modification succeed, please restart the device and use the new configuration to reconnect it:





Example 3: set the DO value of module by ticking the corresponding checkbox.



II. Sending/receiving a command via LinPAC

User can use the programs built-in LinPAC to configure the I-7000 modules, these are also included in the LinPAC SDK. We use the RS-485 Comport of LP-8421 (COM2) for example, the default address of I-7000 modules is “01”.

The follow command is used to configure the COM port of LinPAC, user should set the baud rate of LinPAC be the same as it of using modules. For example, modify the baud rate of **/dev/ttyS0** (COM2) to 115200 bps:

Command: # stty -F /dev/ttyS0 ispeed 115200 ospeed 115200

Edit the configuration of the module

Use “getsendreceive” to send/receive DCON protocol command:

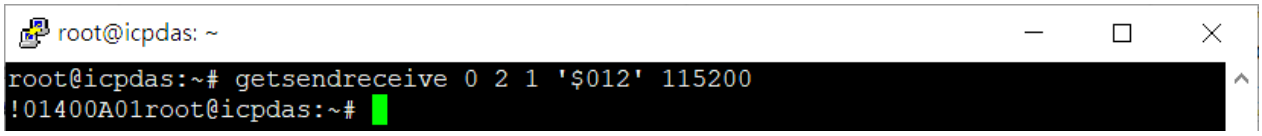
Command: # getsendreceive slot 1 timeout command
 # getsendreceive slot comport timeout command baudrate

User can find supported command from the following manual, in Chapter 2 ***<DCON Protocol>***:
http://www.icpdas.com/web/product/download/io_and_unit/rs-485/document/manual/7000/I-7000_M-7000_DIO_en.pdf

Example 1: read the module configuration.

Command: # getsendreceive 0 2 1 '$012' 115200

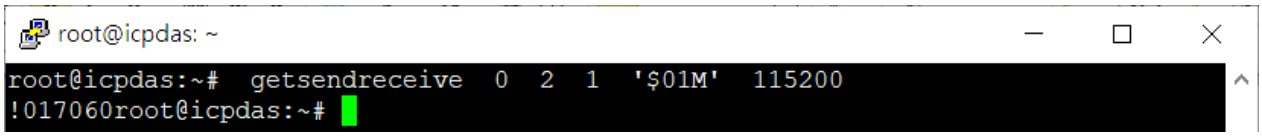
Response: !01400A01



Example 2: get the module name.

Command: # getsendreceive 0 2 1 '$01M' 115200

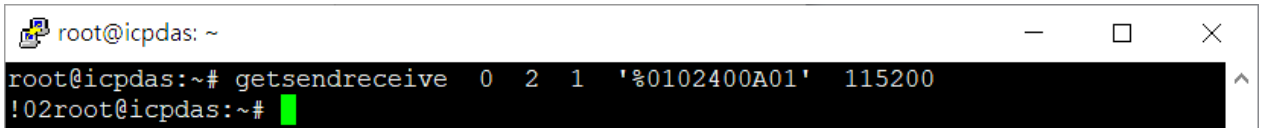
Response: !017060



Example 3: set the address of module from “01” to “02”.

Command: # getsendreceive 0 2 1 '%0102400A01' 115200

Response: !02

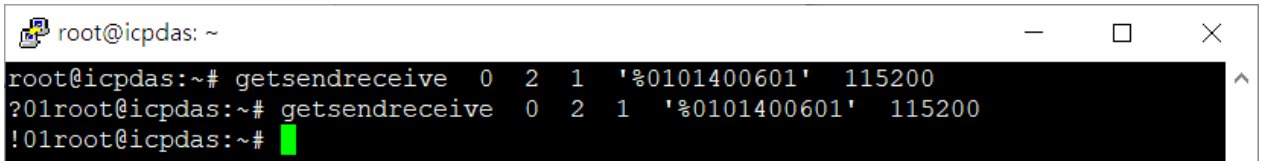


Example 4: change the baud rate from “115200” to “9600” bps, please set the device to “**INIT mode**” and restart the device after sending the command.

Command: # getsendreceive 0 2 1 '%0101400601' 115200

Response: !01

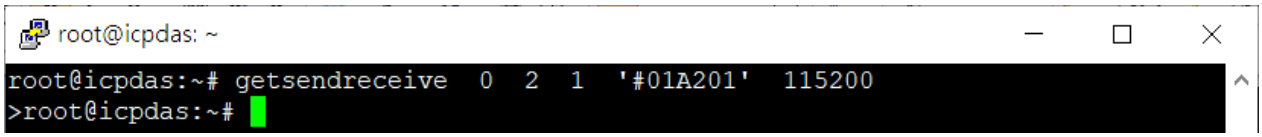
Response when report error: ?01



Example 5: set the DO2 value to on.

Command: # getsendreceive 0 2 1 '#01A201' 115200

Response: >



Note: User can also use “setexdo” command to set I-7000 modules’ DO value.

Command: # setexdo slot 1 data

 # setexdo slot comport data baudrate address

Set the DO value as “04” (equal to “set DO2 to on”):

Command: # setexdo 0 2 4 115200 1