

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:



- 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 connected devices.



to search and press the Stop Search bottom

when found all



Edit the configuration of the module

User can edit the configuration by clicking the module ID:

ŧ		I 🛠		1		?
Start Ad	dress	0 End	Address	8	Search I	RU-87PN Addr. Mode
ID	Address	Baud Rate	Checksum Disable	Format	Status Remote I/O	Description [DCON]4*DI + 4*DO

Example 1: change the address from "01" to "02".

7060 Firmware[B200	0]	×
Configuration DO	Host WDT DI Commands Log About	
Protocol (INIT*) Address	2 $(02H)$ 1. Change the address	
Baud Rate (INIT*)	115200	
Parity (INIT*)	N,8,1-None Parity 🗸	
Checksum (INIT*)	Disable ~	
Response Delay	0 ms	
Response Delay Exit	0 ms 2. Click to set the configuration Set Module Configurations	on _
Response Delay Exit E+ 11:27 ::GET_RESP	0 ms 2. Click to set the configuration Set Module Configurations PONSE_DELAY_TIME[~02RD]; [10200]; [1 ms]=>OK	on]
Response Delay Exit 上午 11:27 ::GET_RESP ● DCON Utility Pro	0 ms 2. Click to set the configuration Set Module Configurations PONSE_DELAY_TIME[~02RD]; [10200]; [1 ms]=>OK	n]
Response Delay Exit E+ 11:27 ::GET_RESP DCON Utility Pro	0 ms 2. Click to set the configuration Set Module Configurations PONSE_DELAY_TIME[~02RD]; [10200]; [1 ms]→OK >> V 3.0.0.1	on] ×
Response Delay Exit E47 11:27 ::GET_RESP DCON Utility Pro	0 ms 2. Click to set the configuration Set Module Configurations PONSE_DELAY_TIME[~02RD]; [10200]; [1 ms]—>OK >V 3.0.0.1 • V 3.0.0.1 • O End Address 8 □ Search RU-87PN Addr. Mode	on] ×
Response Delay Exit E+ 11:27 ::GET_RESP DCON Utility Pro DCON Utility Pro Start Address ID Address	0 ms 2. Click to set the configuration Set Module Configurations PONSE_DELAY_TIME[~02RD]; [10200]; [1 ms]=>OK >V 3.0.0.1 • V 3.0.0.1 • O End Address 8 □ Search RU-87PN Addr. Mode • S Baud Rate Checksum Format Status Description	x x



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.



Or



The INIT* pin connected to the GND pin

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

INIT* failed	×
Setting Communication Parameters Failed: Program detect the INIT* pin is opened, follow the instructions below: 1. Check the INIT Dip Switch is set to Init side or INIT* connect to GND 2. INIT Dip Switch may be poor contact, try to switch the Dip again. 3. Then configure again.	i)
確定	

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









060 Firmware[B200]	×
Configuration DO Host WDT DI Commands Log About	
Bit Status	
CH:00 CH:01 CH:02 CH:03	
DO Value 04h Set to [Power On Value] Set to [Safe Value]	
Read DO	
O Read Power ON Value	
○ Read Safe Value	
Exit	
<午 02:13 :: OUTPUT_DO[@014]; [>]; [1 ms]=>OK	



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

뤋 root@icpdas: ~	_	×
root@icpdas:~# getsendreceive 0 2 1 '\$012' 115200 !01400A01root@icpdas:~#		^

Example 2: get the module name.

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

Response: !017060

🧬 root@icpdas: ~							_	\times
root@icpdas:~# !017060root@icp	getsendreceive odas:~#	0	2	1	'\$01M'	115200		^

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

0	2	1	'%0)102400A01'	1152	00				
								_		×
eiv∈	e ()	2	1	'%0102400A	01' 1	15200				^
	0 eive	0 2	0 2 1	0 2 1 '%(0 2 1 '%0102400A01'	0 2 1 '%0102400A01' 1152 eive 0 2 1 '%0102400A01' 1	0 2 1 '%0102400A01' 115200	0 2 1 '%0102400A01' 115200	0 2 1 '%0102400A01' 115200 - eive 0 2 1 '%0102400A01' 115200	0 2 1 '%0102400A01' 115200 - □ eive 0 2 1 '%0102400A01' 115200



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

🛃 root@icpdas: ~				_	×
root@icpdas:~# getsendreceive 0 ?01root@icpdas:~# getsendreceive !01root@icpdas:~#	2 0	1 2	'%0101400601' 115200 1 '%0101400601' 115200		^

Example 5: set the DO2 value to on.

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

Response: >

🛃 root@icpdas: ~						_	×
root@icpdas:~# getsendreceive >root@icpdas:~#	0	2	1	'#01A201'	115200		^

Note: User can also use "setexdo" command to set I-7000 modules' DO value.

