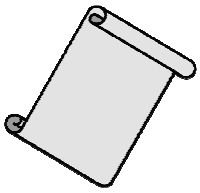
ZT-2015 Quick Start

1 What's in the Shipping Package?

The shipping package showed contain the following items:

ANT-124-05



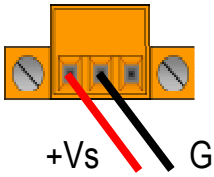
Quick Start

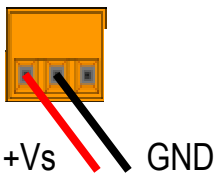
CD

If any of these items are missing or damaged, please contact your local distributor for more information. Save the shipping materials and cartons in case you need to ship the module in the future.

2 Preparing the Device

1. Refer to Section 4. for details of how to configure the DIP switches of the ZT-2000 I/O device.
2. Install the ZT Configuration Utility on your Host PC to configure the ZT-2000 coordinator. The utility can be founded on the CD in the \Napdos\ZigBee\ZT_Series\Utility folder, or downloaded from: http://ftp.icpdas.com/pub/cd/usbcd/napdos/zigbee/zt_series/utility
3. Power Supply: Connect a power supply using a voltage range of +10 ~ +30 V_{DC}





3 Setting up the ZT-2000 I/O Device

3.1 Introduction to the Configuration Parameters

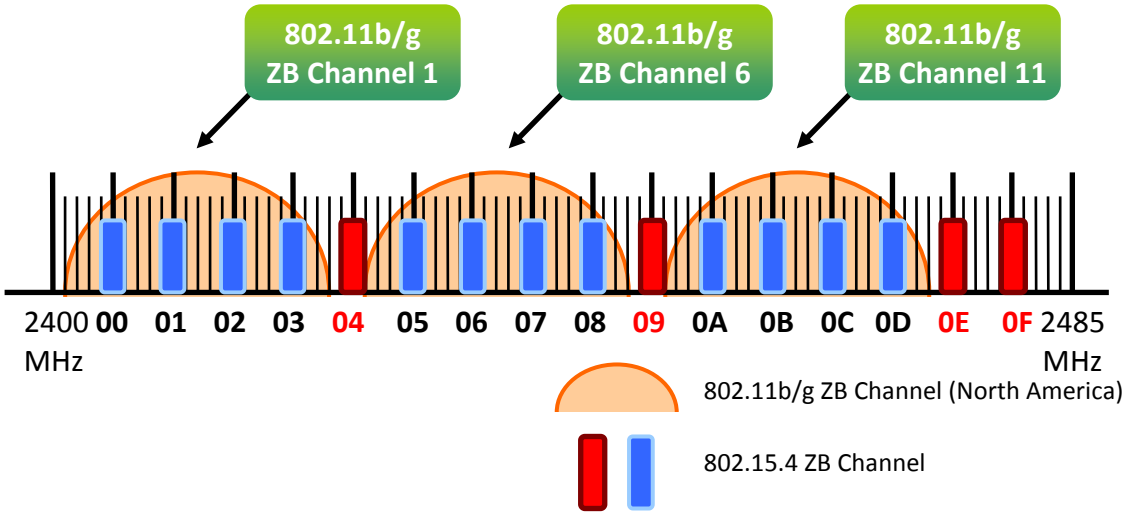
A. The **"ZB PID"** parameter is the group identity for a ZigBee network, and must be same for all devices in the same ZigBee network.

B. The **"Node ID"** parameter is the individual identity of the specific ZigBee module, and must be unique for each device connected to the same ZigBee network.

C. The **"ZB Channel"** parameter indicates the radio frequency channel, and must be set to the same value as other modules on the same ZigBee network.

ZB Channel	0x00	0x01	……	0x0F
Frequency (MHz)	2405	2410	……	2480

※ *ZB channels 0x04, 0x09, 0x0E or 0x0F are recommended because they do not overlap with Wi-Fi frequency band.*



D. Protocol/Application Mode:

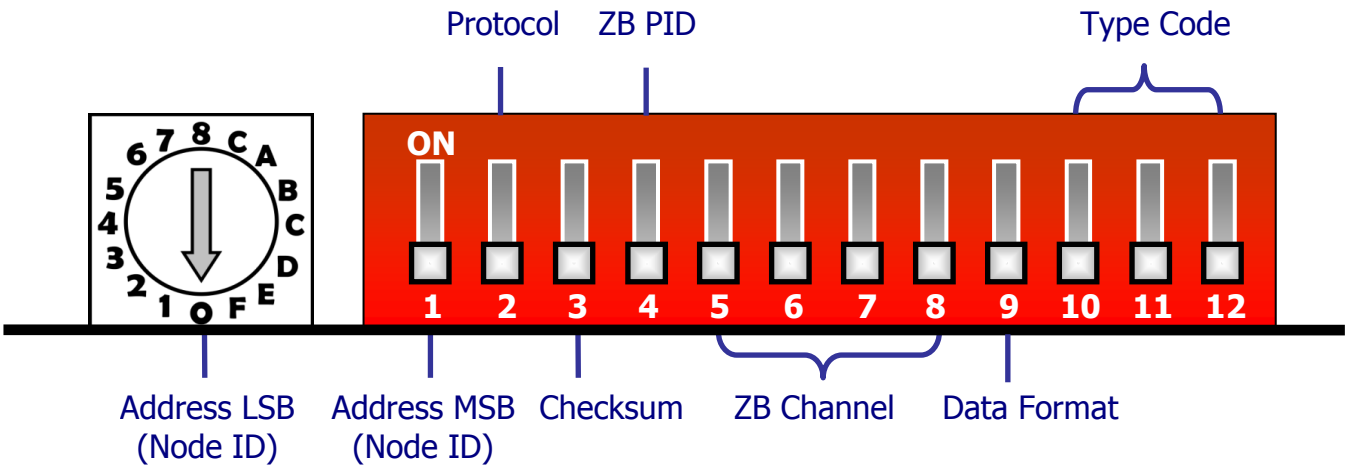
When implementing custom programs based on different protocols, the following application mode(s) are recommended in order to ensure optimal performance.

User Program Protocol	ZT-2000 I/O	ZT-2550	ZT-2570
DCON	DCON	Transparent	Transparent
Modbus RTU	Modbus RTU	Transparent Modbus Gateway	Transparent Modbus Gateway
Modbus TCP	Modbus RTU	------	Modbus Gateway

4 The Rotary Switch and DIP Switches

The configuration of the ZT-2015 can be adjusted using a combination of the external rotary switch and the DIP switches. The ZT-2000 device should only be rebooted once the configuration is completed.

➢ ZT-2015



➢ Rotary Switch

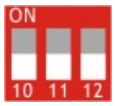
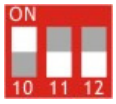
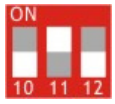
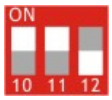
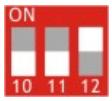
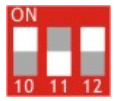
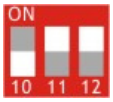
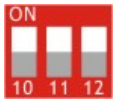
	0 (Software Config.)	1	2	3	……	F	Note
Address	*Note 1	01	02	03	……	0F	MSB = 0
Node ID	*Note 1	0x0001	0x0002	0x003	……	0x000F	
	0	1	2	3	……	F	
Address	10	11	12	13	……	1F	MSB = 1
Node ID	0x0010	0x0011	0x0012	0x013	……	0x001F	

***Note 1：The "Address" and "Node ID" are defined via the %AANNTTCCFF command. In software configuration mode, the DIP switches for "Address", "Data Format" and "Type Code" are ignored and can also be set via the %AANNTTCCFF and $AA7CiRrr commands.**

➢ DIP Switch

Number	Item	Status	Description
1	Address MSB	OFF	Valid Address (Node ID) from 0x01 to 0x0F
		ON	Valid Address (Node ID) from 0x10 to 0x1F
2	Protocol	OFF	DCON Protocol
		ON	Modbus RTU Protocol
3	Checksum	OFF	Disabled (DCON Protocol)
		ON	Enabled (DCON Protocol)
4	ZB PID	OFF	ZigBee Pan ID = 0x0000
		ON	ZigBee Pan ID = 0x0001
5	ZB Channel	OFF	------
		ON	0x08
6		OFF	------
		ON	0x04
7		OFF	------
		ON	0x02
8		OFF	------
		ON	0x01
9	Data Format	OFF	Engineering Units Format
		ON	Hexadecimed Format

ZT-2015

Switch Position	Type Code	Switch Position	Type Code	Switch Position	Type Code
	0x20		0x23		0x24
	0x27		0x28		0x2A
	0x80		0x81		

5 Starting the ZT-2000 I/O Device

As the ZigBee network is controlled by the ZigBee Coordinator, the ZT-2550/ZT-2570 (ZigBee Coordinator) must be configured first. Refers to the documents shown below for full details of how to configure these devices.
Once configuration of the ZigBee Coordinator has been completed, set the "Pan ID" and "RF Channel" values for the ZT-2000 I/O device to the same values as the network and then reboot the device.The module will automatically start to function on the ZigBee network using the default protocol.

※ **Documents**

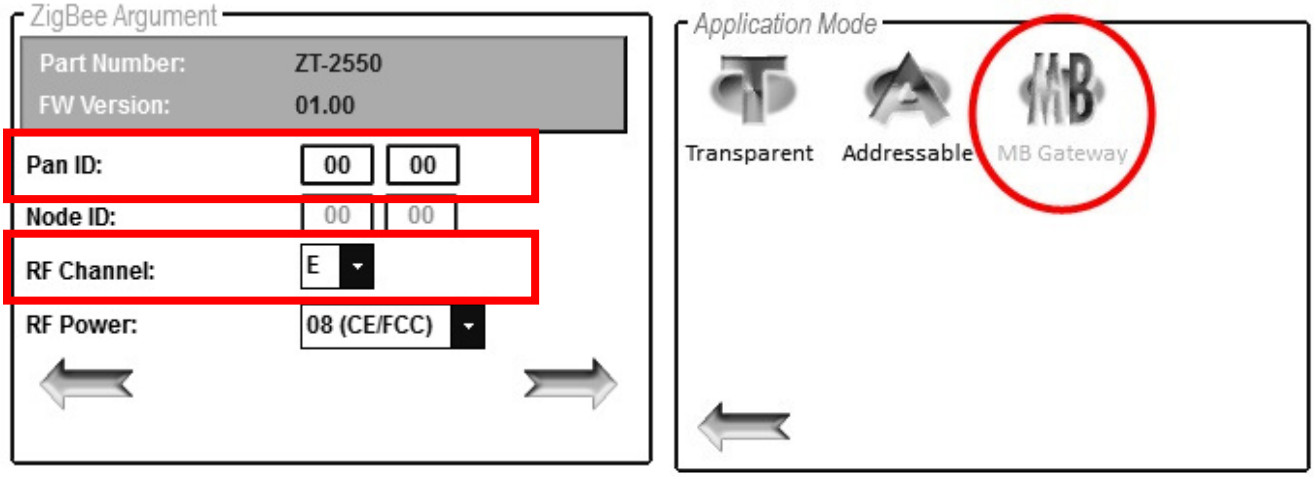
http://ftp.icpdas.com.tw/pub/cd/usbcd/napdos/zigbee/zt_series/document/zt-255x/
http://ftp.icpdas.com.tw/pub/cd/usbcd/napdos/zigbee/zt_series/document/zt-257x/

※ **Configuration Utility** (Used to configure the ZT-2000 I/O device Coordinator)

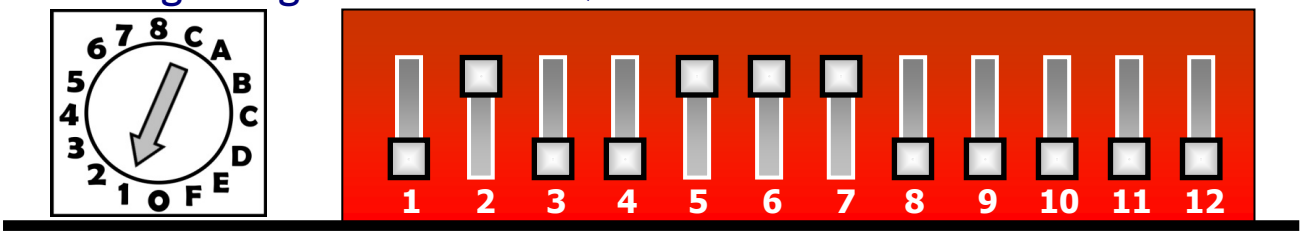
http://ftp.icpdas.com.tw/pub/cd/usbcd/napdos/zigbee/zt_series/utility/

6 Examples

➢ Configuring the ZT-2550/ZT-2570



➢ Configuring the ZT-2000 I/O Device



Number	Item	Status	Description	
1	Address MSB	OFF	Address/Node ID is **01** (Rorary Switch=1)	
2	Protocol	ON	Use **Modbus RTU** Protocol	
3	Checksum	OFF	**Disabled**	
4	ZB PID	OFF	ZigBee Pan ID=**0x0000**	
5	ZB Channel	ON	0x08	ZigBee RF Channel = **0x0E**
6		ON	0x04	
7		ON	0x02	
8		OFF	------	
9	Data Format	OFF	Engineering Units Format	
10	Type Code	OFF	Type Code 0x20	
11		OFF	RTD Type: Platinum 100, α = 0.00385	
12		OFF	Temperature Range (° C): -100 ~ 100	

7 Communications Testing

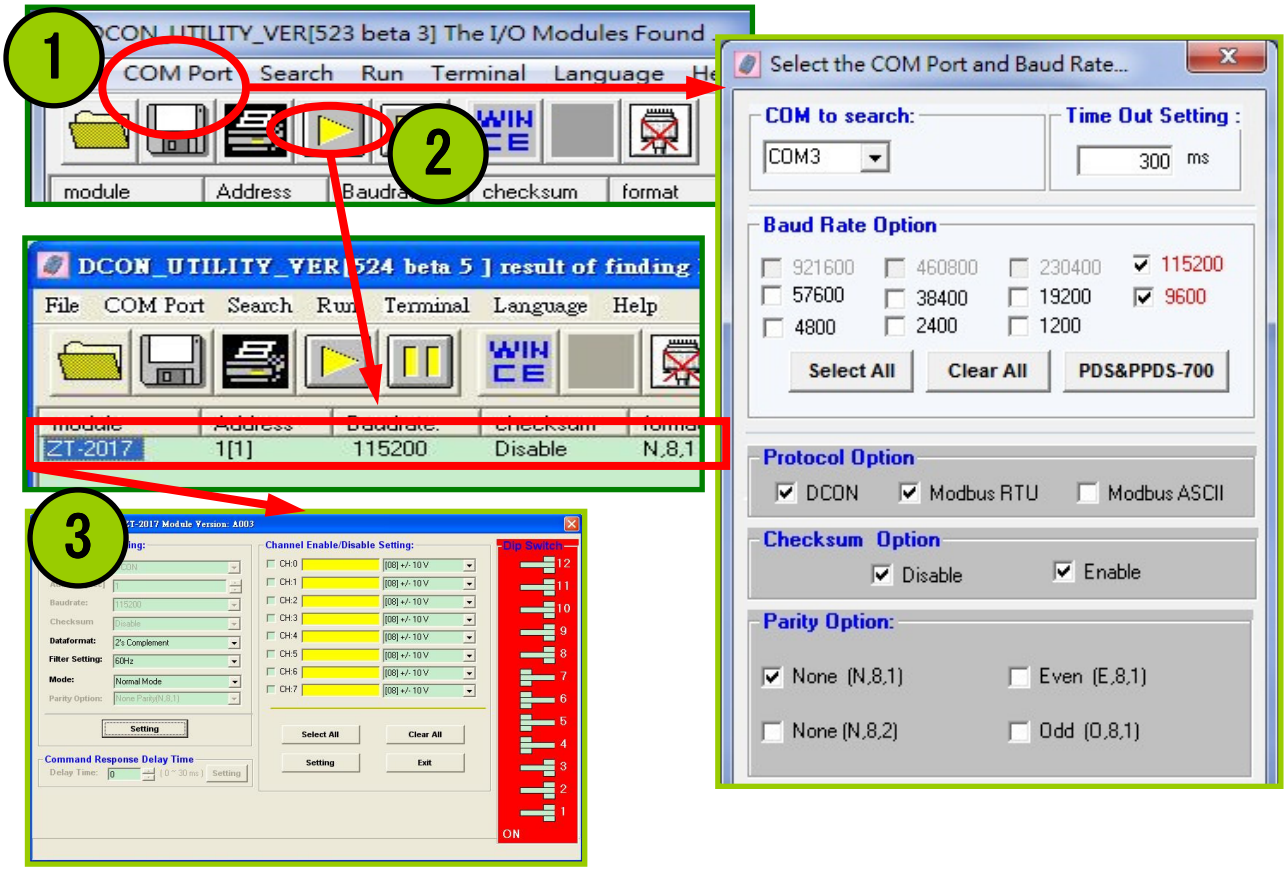
Once the ZT-2000 I/O device has joined the ZigBee network, the signal quality can be confirmed by monitoring the status of the ZigBee Net LED indicators. If the LED indicator shows a steady light, communication with the ZT-2000 I/O device has been successfully established for data acquisition and control.
ICP DAS also provides the "DCON Utility", which can be used to simulate DCON/Modbus communication. This software can alse be used to verify the device settings and ZigBee I/O functions.

※ The DCON Utility can be downloaded from:

http://ftp.icpdas.com/pub/cd/8000cd/napdos/driver/dcon_utility/

➢ Simulating I/O channel operation via the DCON Utility

1. Launch the DCON Utility and select the appropriate COM Port settings to connect to the ZigBee Coordinator (ZT-2550/ZT-2570).
2. Click the "Search" button to start searching for ZT-2000 I/O devices connected to the same ZigBee network.
3. If any ZT-2000 I/O devices are found, they will be displayed in the device list windows. Double-click the name of the module to start the operating platform.



8 Troubleshooting

(1) Technical Support.

If you have any difficulties using your ZT-2000 series I/O device, please send a description of the problem to service@icpdas.com

Include the following items in your email:

- *A description or diagram of the current DIP switch positions.*
- *A copy of the configuration file for the ZT-2000 coordinator. This file can be obtained using the procedure outlined below and should be attached to your email.*

a. Set the DIP switch of the ZT-255x device to the [ZBSET] position then reboot the device. Launch the ZT Configuration Utility and select [Save Log] icon to save the configuration of the ZT-255x as a file.

b. After clicking the [Save Log] icon, enter the "File Name" and the "File Path" in the Windows "Save" dialog box. Once the configuration has been successfully saved, the following message will be displayed.