# ZT-2017/ZT-2017C SERIES

## Quick Start Guide

## 1 What's in the Shipping Package?

The shipping package contains the following items:



ZT-2017/Zt-2017C Device



ANT-124-05



Quick Start Guide

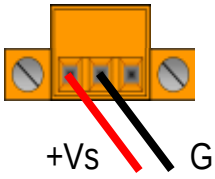


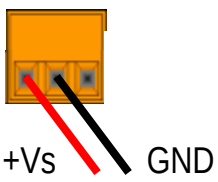
CD

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 the chapter 4. to configure the DIP switch of ZT-2000 I/O device.
2. Install the ZT Configuration Utility to configure the ZT-2000 coordinator.
   CD: \Napdos\ZigBee\ZT_Series\Utility
   http://ftp.icpdas.com/pub/cd/usbcd/napdos/zigbee/zt_series/utility
3. Power Supply: +10 ~ +30 $V_{DC}$






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# 3 Setting up the ZT-2000 I/O Device

## 3.1 Introduction to the Configuration Parameters

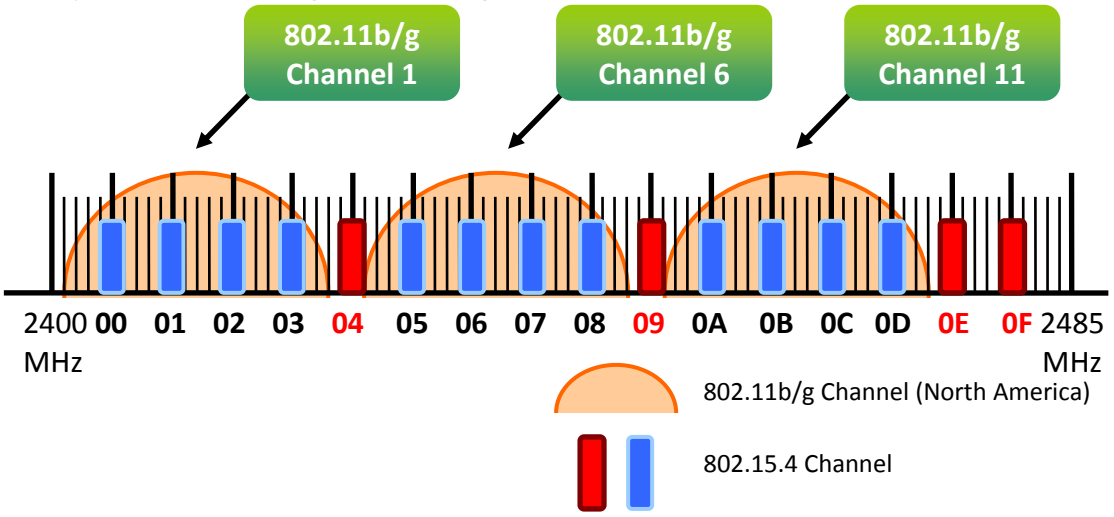
A. **"Pan ID"** is the group identity of a ZigBee network, and must be set to the same if they are in the same ZigBee network.

B. **"Node ID"** is the identity of the ZigBee module.
The identity number must be unique if it is in the same ZigBee network as other ZigBee module.

C. **"RF Channel"** indicates the radio frequency channel, and must be set to the same channel if the module is in the same ZigBee network as other ZigBee modules.

| Channel | 0x00 | 0x01 | ..... | 0x0F |
|---|---|---|---|---|
| Frequency (MHz) | 2405 | 2410 | ..... | 2480 |

※ *In addition, the RF channels 0x04, 0x09, 0x0E or 0x0F are recommended because they do not overlap with frequencies Wi-Fi.*




D. **Protocol/Application Mode :**
For using different protocol on the user program, the following recommended application mode works together.

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

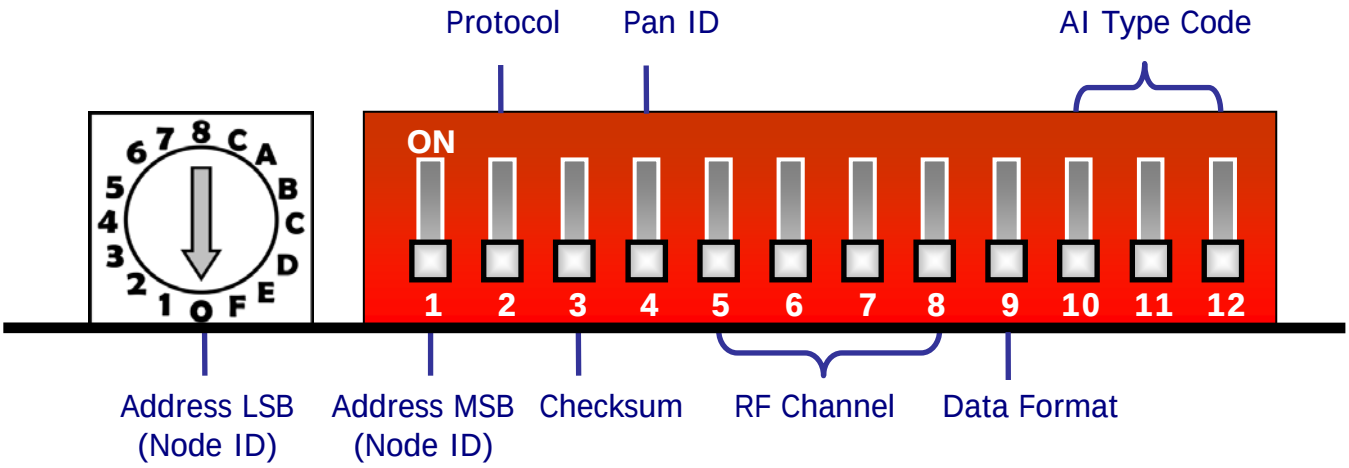

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# 4 Rotation Switch and DIP Switch

The configurations is adjusted by the external rotation switch and DIP switch. User only reboot the power when ZT-2000 device configuration completed.

➢ ZT-2017/ZT-2017C




## ➢ Rotation Switch

| | 0 (Soft. Configuration) | 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 through the command. In the software configuration mode, the dip switch of "Address", "Data Format" and "AI Type Code" are ignored and "Address", "Data Format" and "AI Type Code" can be set through the command also.**



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## ➢ DIP Switch

| Number | Item | Status | Explain |
|---|---|---|---|
| 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 | ZigBee Pan ID | OFF | Pan ID = 0x0000 |
| | | ON | Pan ID = 0x0001 |
| 5 | ZigBee RF Channel | OFF | ------ |
| | | ON | 0x08 |
| 6 | | OFF | ------ |
| | | ON | 0x04 |
| 7 | | OFF | ------ |
| | | ON | 0x02 |
| 8 | | OFF | ------ |
| | | ON | 0x01 |
| 9 | Data Format | OFF | Engineering Format |
| | | ON | Hex Format |

ZT-2017

| Number | AI Type Code | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 0x08 | 0x09 | 0x0A | 0x0B | 0x0C | 0x0D | 0x07 | 0x1A |
| 10 | OFF | OFF | OFF | OFF | ON | ON | ON | ON |
| 11 | OFF | OFF | ON | ON | OFF | OFF | ON | ON |
| 12 | OFF | ON | OFF | ON | OFF | ON | OFF | ON |

ZT-2017C

| Number | AI Type Code | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 0x0D | 0x0D | 0x0D | 0x0D | 0x0D | 0x0D | 0x07 | 0x1A |
| 10 | OFF | OFF | OFF | OFF | ON | ON | ON | ON |
| 11 | OFF | OFF | ON | ON | OFF | OFF | ON | ON |
| 12 | OFF | ON | OFF | ON | OFF | ON | OFF | ON |


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# 5 Start-up ZT-2000 I/O Device

Because the ZigBee network is in charged by the ZigBee coordinator, so user must first configure ZT-2550/ZT-2570 (ZigBee coordinator). Please see the configuration details in the documents as below links.

Once the ZigBee coordinator has completed the configuration, you only configure the ZT-2000 I/O device into the same "Pan ID" and "RF channel" and then reboot power. It will start working in the ZigBee network via 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 ZT-2000 I/O device Coordinator)

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

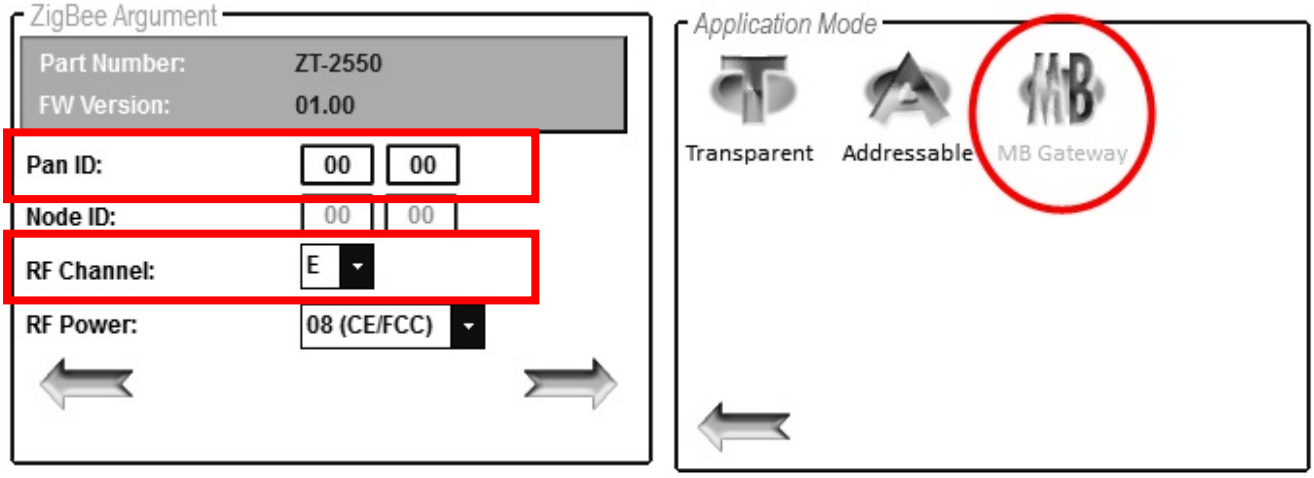


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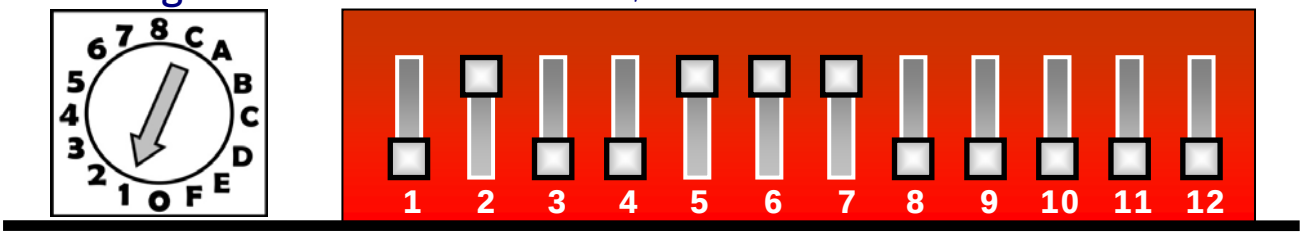
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# 6 Examples

## ➢ Configurations of ZT-2550/ZT-2570




## ➢ Configurations of ZT-2000 I/O Device




| Number | Item | Status | Explain | |
|---|---|---|---|---|
| 1 | Address MSB | OFF | Address/Node ID is **01**(Rotation Switch=1) | |
| 2 | Protocol | ON | Use **Modbus RTU** Protocol | |
| 3 | Checksum | OFF | **Disabled** | |
| 4 | ZigBee Pan ID | OFF | Pan ID=**0x0000** | |
| 5 | ZigBee RF Channel | ON | 0x08 | ZigBee RF Channel = **0x0E** |
| 6 | | ON | 0x04 | |
| 7 | | ON | 0x02 | |
| 8 | | OFF | ------ | |
| 9 | Data Format | OFF | Engineering Format | |
| 10 | Type Code | OFF | AI Type Code | |
| 11 | | OFF | ZT-2017=Type Code 8(+/-10V) | |
| 12 | | OFF | ZT-2017C=Type Code D(+/-20mA) | |


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# 7 Communication Test

Once the ZT-2000 I/O device has joined ZigBee network, user may confirm the signal quality via the LED status of ZigBee Net LED indicators. If the LED indicator is steady light, it is allowed communicating with ZT-2000 I/O device for data acquisition and controlling.

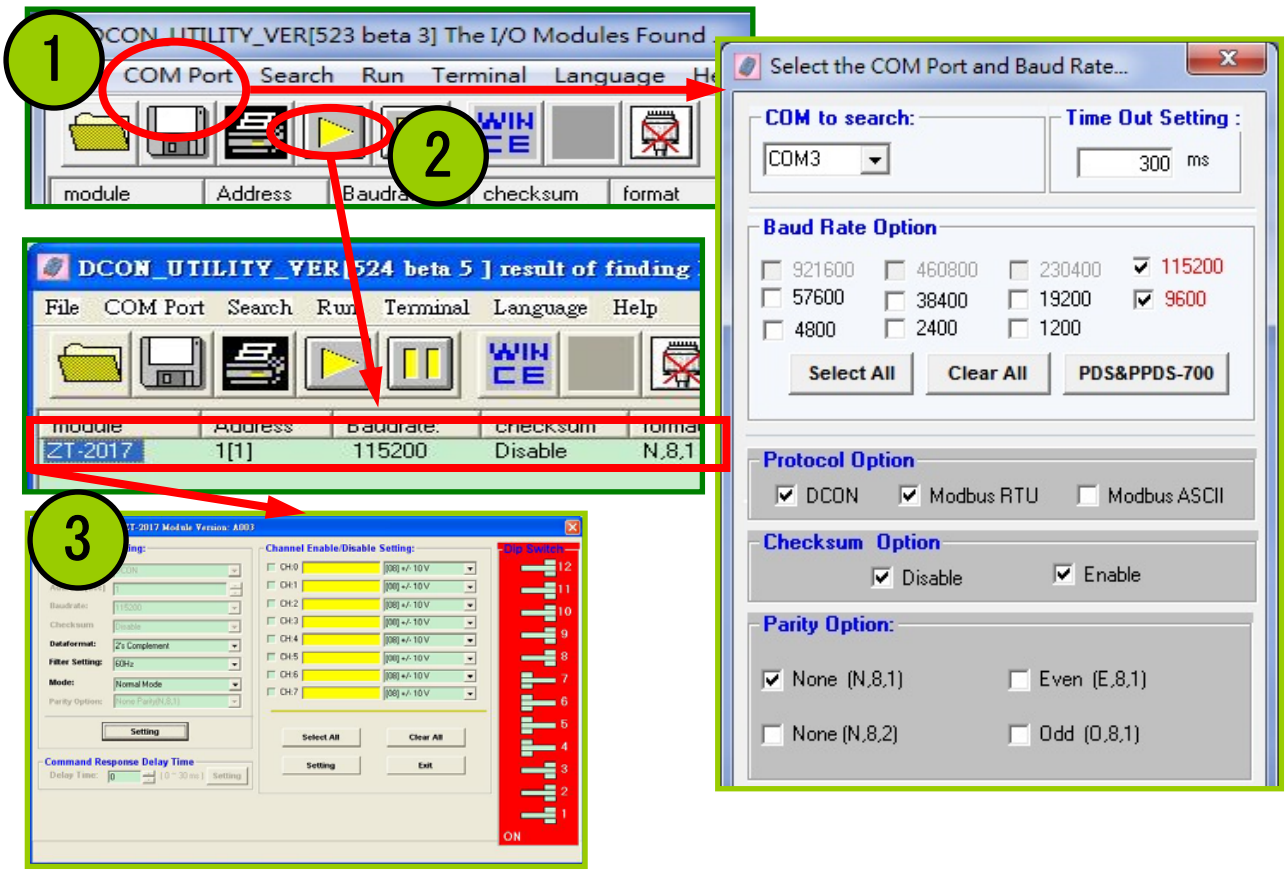
ICP DAS also provides a software "DCON Utility" to simulate the DCON/Modus communication, user may use this software to verify the setting and ZigBee I/O functions.

## ※ Downoad DCON Utility

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

## ➢ Simulate I/O channel operating via using DCON Utility

1. Launch DCON Utility and select the correct COM Port settings to connect the ZigBee Coordinator (ZT-2550/ZT-2570).
2. Clicking "Search" button will start searching which ZT-2000 I/O device is in the same ZigBee network.
3. If there is any ZT-2000 I/O devices displayed, double clicking the "module name" will start the I/O channels operated platform.






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# 8 Troubleshooting

(1) Technical Support.

If you are any difficulties using the ZT-2000 I/O device, please send the description of DIP switch status to the ZT-2000 I/O device. Please also save the configurations of ZT-2000 coordinator via using the described below. Please provide a description of problem and attach file to an email and send it to service@icpdas.com

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 ZT-255x as a file.

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

(2) LED Indicator Status :

| LED Indicator | Status | Introduction |
|---|---|---|
| ZigBee Net (Green LED) | ZigBee Coordinator (Host) | |
| | Steady Lit | ZigBee network is establish |
| | Blink to Steady Lit | Rejoin ZigBee network or it has occupied |
| | ZigBee Router (Slave) | |
| | Steady Lit | Signal Strength |
| | Blinking (500 ms) | Signal Available |
| | Blinking (1s) | Signal Weak |
| | Blinking (2s) | Signal Terrible or No ZigBee Network |
| ZigBee PWR (Red LED) | The status of module board | |
| | Steady Lit | Power on |
| | Blinking (200ms) | Module Initialization failure |
| | Blinking (1s) | Watchdog enabled |
| | Steady Unlit | Power off |



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