ZT-20xx-IOG SERIES

Quick Start

1 What's in the Shipping Package?

The shipping package contains the following items:



ZT-20xx-IOG Module



ANT-124-05

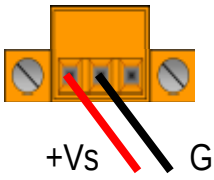


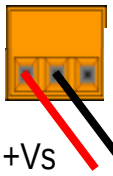
Quick Start

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. Power Supply: +10 ~ +30 V_{DC}





2. Install "ZT-2000 Configuration Utility" to configure the ZT-20xx-IOG device.

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

- CD: \\Napdos\ZigBee\ZT_Series\Utility

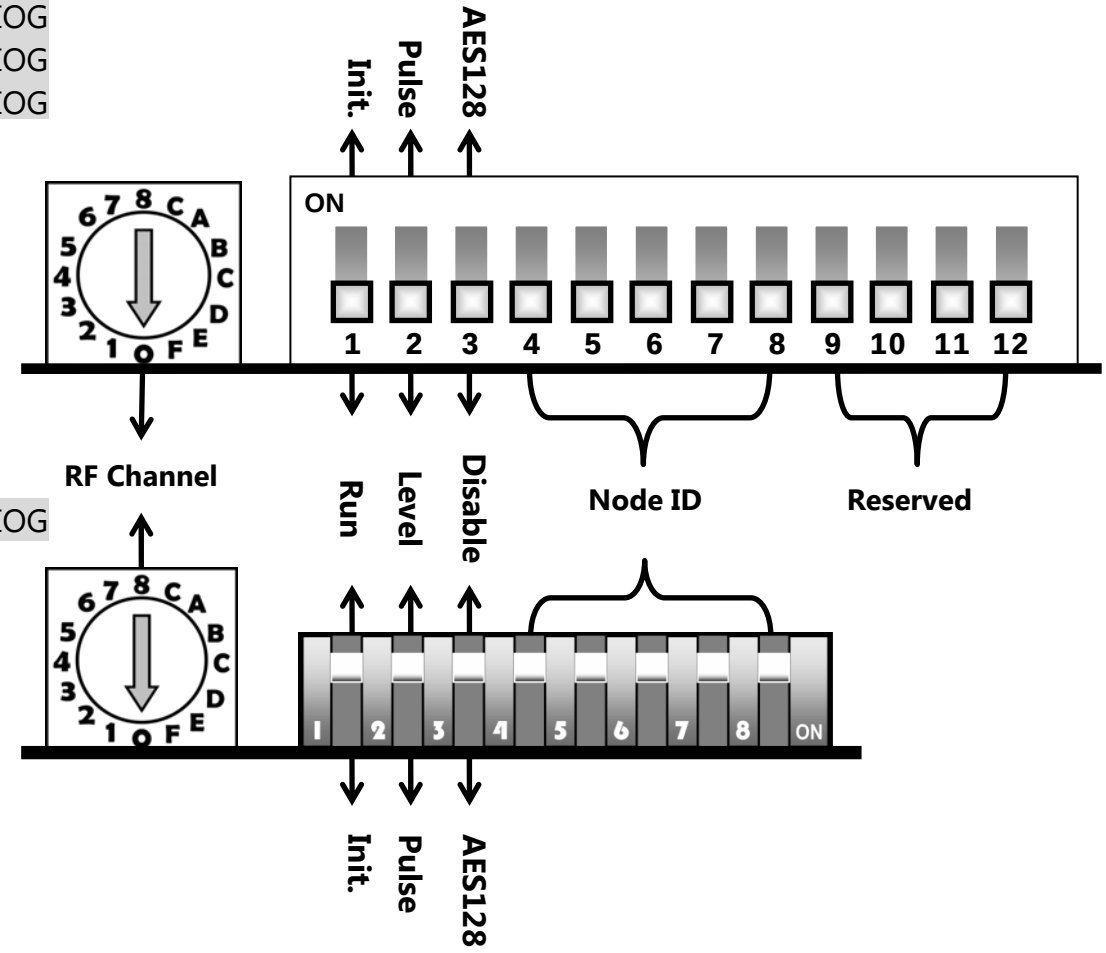
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3 Hardware Basic Setting

1. Hardware Setting Interface

- ✓ ZT-2043-IOG
- ✓ ZT-2053-IOG
- ✓ ZT-2055-IOG



- ✓ ZT-2060-IOG

2. Basic Setting Parameters for Hardware

① DIP 1 : Module Initial Mode

- ✓ For normal operation, set the DIP_1 to the RUN position.
- ✓ For advanced setting, set the DIP_1 to the INIT position, then can do the setting by software.

Trigger Mode	DIP_1	Descriptions
RUN	OFF	Pan ID = according to the software setting (Default: 0x0000) RF Channel = set by the rotary switch Node ID = set by the rotary switch
INIT	ON	Software setting, via ZT-2550/ZT-2570/ZT-USBC remotely Pan ID = 0x3FFF RF Channel = set by the rotary switch

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② DIP 2 : DI Event trigger mode or way

The event trigger modes of the ZT-IOG system, the same are the trigger ways for the DI channel of the ZT-IOG module. Users is able to choose the suitable mode via refering user manual for detail descriptions.

Trigger Mode	DIP_2	Descriptions
Level Mode	OFF	If any DI channel state is high, all DO channel states are high. If all DI channel states are low, all DO channel states are low.
Pulse Mode	ON	If any DI channel is triggered to rising edge, all DO channels will change to the reverse edge once.

③ DIP 3 : Encryption

In wireless communication, it provides data encryption that supports AES-128 bit encryption algorithm. This setting is based on the ZigBee Coordinator, other ZT-IOG modules within the same group are synchronized passively.

Encryption	DIP_3	Descriptions
Disable	OFF	Not using encryption
Enable	ON	Using AES-128 bit encryption for wireless communications

④ DIP 4~8 : Node ID

The Node ID is the ZigBee device ID, or known as the node addresses.

- ✓ The settable range is 0x0000 ~ 0x001F, up to 32 groups, cannot duplicate in the same group
- ✓ A ZT-IOG network must specify a device to 0x0000 (ZigBee Coordinator)
- ✓ The ZigBee Coordinator must be supplied power permanently, or the IOG system cannot work properly.

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Node ID	DIP_4	DIP_5	DIP_6	DIP_7	DIP_8	Node ID	DIP_4	DIP_5	DIP_6	DIP_7	DIP_8
0x0000	off	off	off	off	off	0x0010	**ON**	off	off	off	off
0x0001	off	off	off	off	**ON**	0x0011	**ON**	off	off	off	**ON**
0x0002	off	off	off	**ON**	off	0x0012	**ON**	off	off	**ON**	off
0x0003	off	off	off	**ON**	**ON**	0x0013	**ON**	off	off	**ON**	**ON**
0x0004	off	off	**ON**	off	off	0x0014	**ON**	off	**ON**	off	off
0x0005	off	off	**ON**	off	**ON**	0x0015	**ON**	off	**ON**	off	**ON**
0x0006	off	off	**ON**	**ON**	off	0x0016	**ON**	off	**ON**	**ON**	off
0x0007	off	off	**ON**	**ON**	**ON**	0x0017	**ON**	off	**ON**	**ON**	**ON**
0x0008	off	**ON**	off	off	off	0x0018	**ON**	**ON**	off	off	off
0x0009	off	**ON**	off	off	**ON**	0x0019	**ON**	**ON**	off	off	**ON**
0x000A	off	**ON**	off	**ON**	off	0x001A	**ON**	**ON**	off	**ON**	off
0x000B	off	**ON**	off	**ON**	**ON**	0x001B	**ON**	**ON**	off	**ON**	**ON**
0x000C	off	**ON**	**ON**	off	off	0x001C	**ON**	**ON**	**ON**	off	off
0x000D	off	**ON**	**ON**	off	**ON**	0x001D	**ON**	**ON**	**ON**	off	**ON**
0x000E	off	**ON**	**ON**	**ON**	off	0x001E	**ON**	**ON**	**ON**	**ON**	off
0x000F	off	**ON**	**ON**	**ON**	**ON**	0x001F	**ON**	**ON**	**ON**	**ON**	**ON**

⑤ Rotary Switch：RF Channel

"RF Channel" indicates the radio frequency channel, following the IEEE 802.15.4 standard and using the ISM 2.4G radio band.

Rotary Switch	Switch Range	Description
	0 ~ F	2405 MHz ~ 2480 MHz

a. The RF Channel must be set to the same value as other modules on the same ZigBee network.

b. For different ZigBee networks, first priority is to adjust the RF Channel, please directly switch the Rotary Switch.

Announce！

The 2.4GHz is a universal free-of-use band, such as wireless LAN, Bluetooth, ZigBee, etc., all can work in the 2.4GHz, so the user have better avoid to use the same wireless frequency with other devices in the same place to ensure the communication effectiveness.

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4 Software Advanced Setting

1. Advanced Setting Parameters for Software

The following items are the main functions and configurations to the software advanced setting, please refer the user manual for more information.

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

- Disconnection Detection : ***Safe Value (Router), Check-Router-Alive (Coordinator)***
- I/O Channel Pair Relationship : ***Channel Offset (DI/DO)***
- Other Parameters : ***Pan ID, RF Power, Refresh Interval***

2. Software Setting Steps

The following steps are used to start the advanced setting via software.

① As the ZT-20xx-IOG device does not include a COM port, the user must prepare a ZigBee converter, e.g. ZT-USBC, ZT-2550 or ZT-2570, to convert the signal to wireless signal via the USB, RS-232 or RS-485 interface for remote setting the ZT-20xx-IOG module.

② For building the wireless communication of the ZT-20xx-IOG and the ZigBee converter, first, set up the following parameters of the ZigBee converter via the "ZT-2000 Configuration Utility", so it can wirelessly communicate with the ZT-20xx-IOG that in the INIT mode.

Model	ZT-20xx-IOG	ZT-USBC	ZT-2550, ZT-2570
Application Mode	N/A	N/A	Transparent Mode
Pan ID	INIT default to 0x3FFF	Set to 0x3FFF by software	
Node ID	INIT default to 0x0020	Fixed to 0x0000 as a ZigBee Coordinator	
RF Channel	Set by Rotary switch	Same with the Rotary switch of the ZT-IOG.	

③ Switch the Dip Switch 1 (DIP_1) of the ZT-20xx-IOG module to INIT mode.

④ Restart the power of the ZigBee Converter and the ZT-20xx-IOG module, wait for the green LED (ZigBee) of the ZT-20xx-IOG module changing to steady lit, that means the wireless communication established, and then

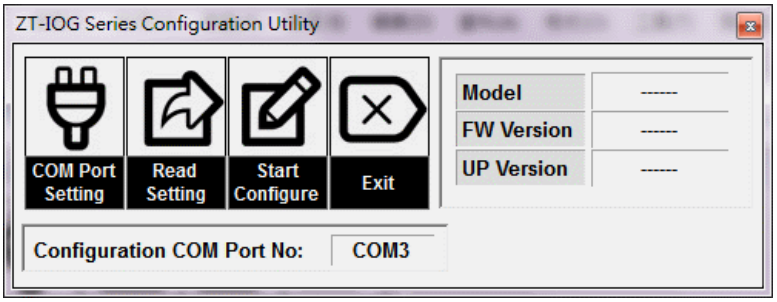
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can call the software utility.

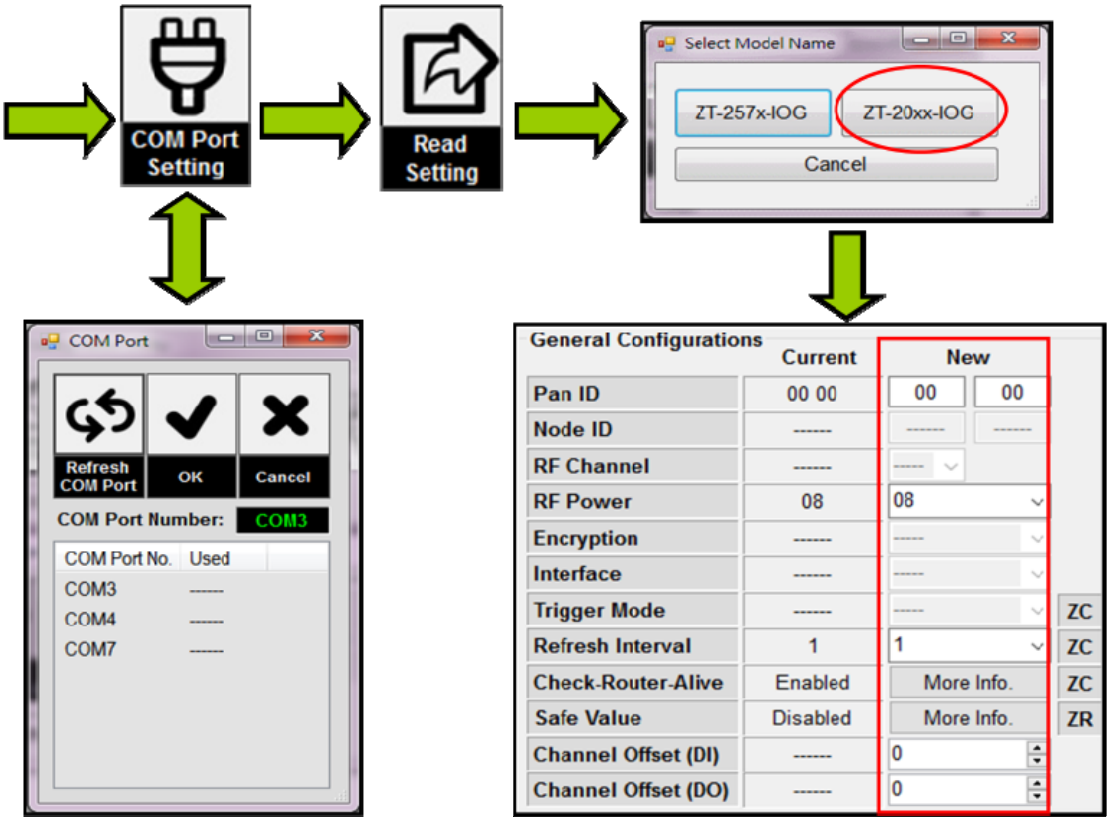
⑤ Execute the ZT-20xx-IOG Configuration Utility (Windows Based):

⑥ Use “ZT-IOG Series Configuration Utility” to connect the ZT-20xx-IOG.



a. Click【COM Port Setting】to select the COM port of the ZigBee converter.

b. Click【Read Setting】to read the current settings of the ZT-20xx-IOG module.



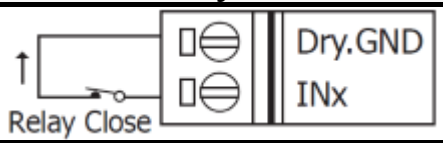
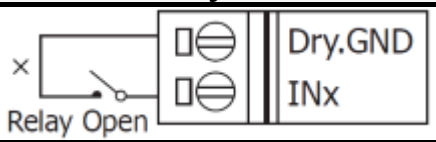
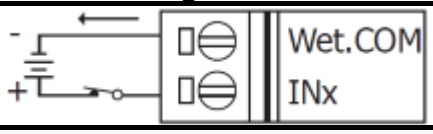
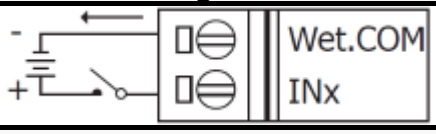
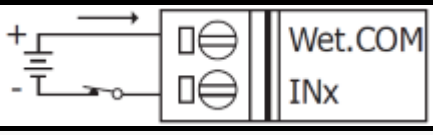
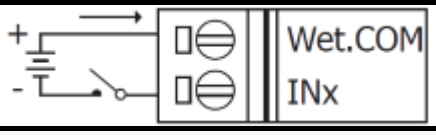
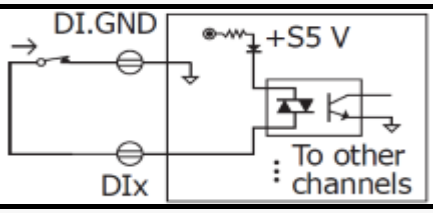
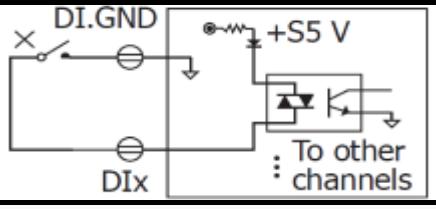
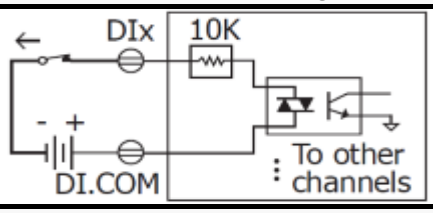
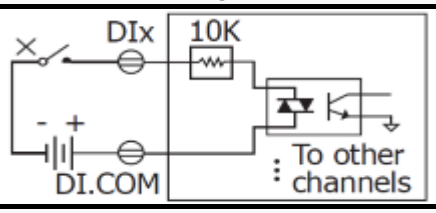
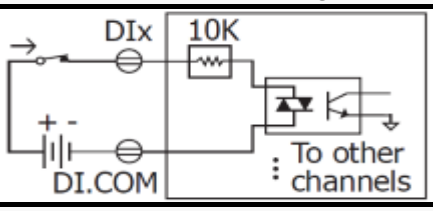
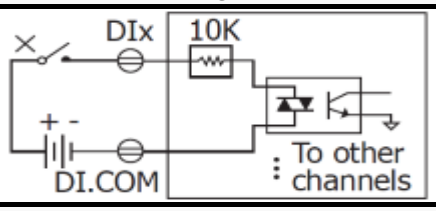
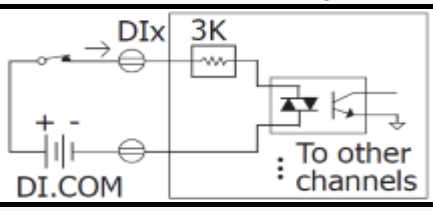
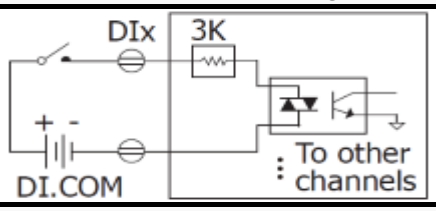
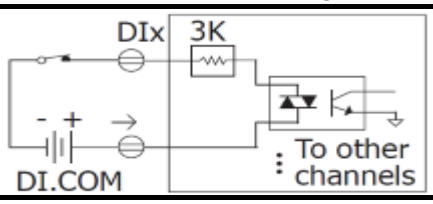
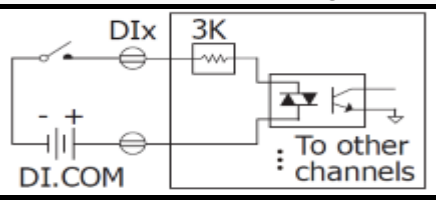
⑦ After reading the settings, directly set the parameters in “New” column. The next section will describe the parameters of the advanced setting.

⑧ After setting the parameters, click【Start Configure】to complete the software setting.

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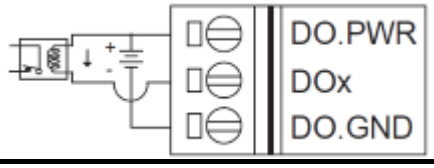
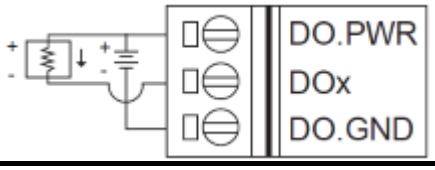
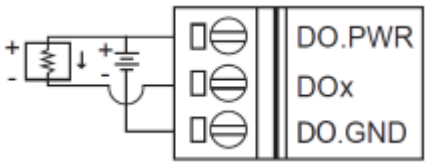
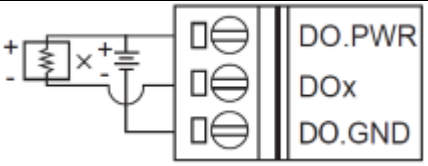
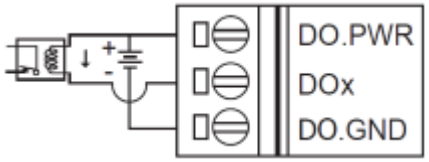
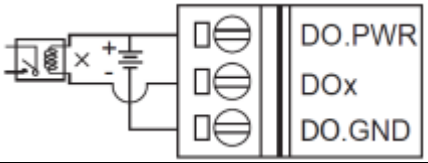
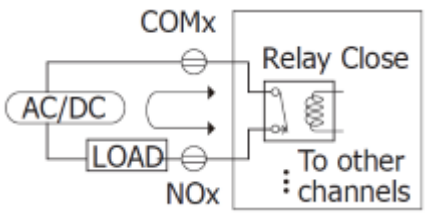
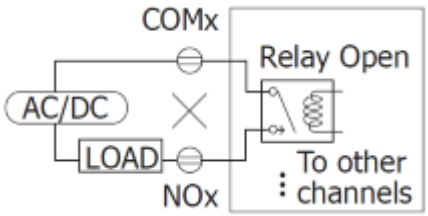
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5 Wiring Connection

Model	Input Type	ON State Readback as 1	OFF State Readback as 0
ZT-2053-IOG	Dry Contact	**Relay ON** 	**Relay OFF** 
	Wet Contact (Source)	**Voltage > 3.5 V** 	**Voltage < 1 V** 
	Wet Contact (Sink)	**Open Collector ON** 	**Open Collector OFF** 
ZT-2055-IOG	Dry Contact	**Close to GND** 	**Open** 
	Wet Contact (Source)	**+10 ~ +50 V_{DC}** 	**+4 V_{DC} Max.** 
	Wet Contact (Sink)	**+10 ~ +50 V_{DC}** 	**+4 V_{DC} Max.** 
ZT-2060-IOG	Wet Contact (Sink)	**+3.5 ~ +30 V_{DC}** 	**OPEN or <1 V_{DC}** 
	Wet Contact (Source)	**+3.5 ~ +30 V_{DC}** 	**OPEN or <1 V_{DC}** 

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Model	Output Type	ON State Readback as 1	OFF State Readback as 0
ZT-2043-IOG	Drive Relay		
	Resistance Load		
ZT-2055-IOG	Resistance Load		
	Inductive Load		
ZT-2060-IOG	Relay Output		

6 Troubleshooting

If you have any difficulties using your ZT-20xx-IOG series I/O device, please send the following contents of the problem to service@icpdas.com

① Description of the problem

② Architecture of application, such as model name, number and connection relationship.

③ The details of module configurations, such as the status of DIP switches, rotary switch and software configurations.

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