Quick Start for ZT-2530M

1 What's in the shipping package?

The package includes the following items:

ZT-2530M   ANT-124-05 (*2)   CD   Quick Start
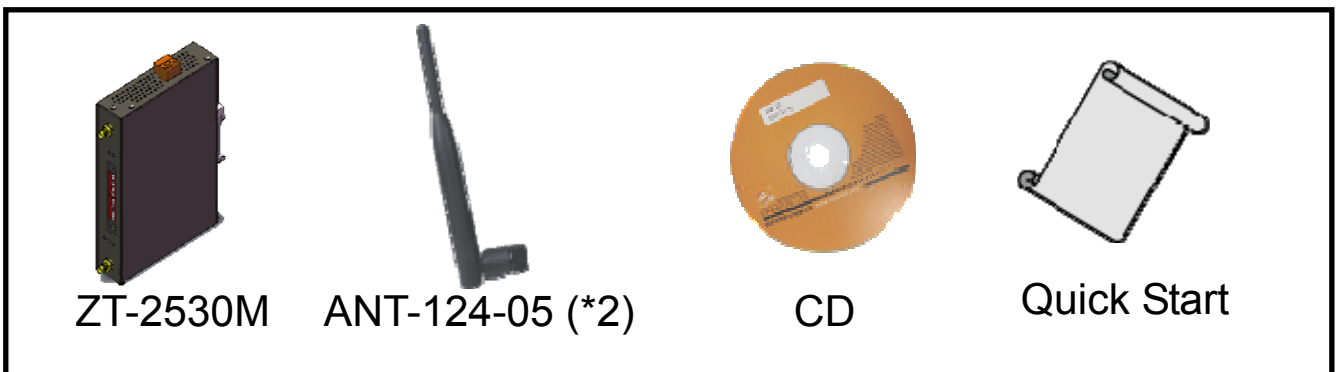
Note: If any of these items are missing or damaged, please contact the local distributor. Save the shipping materials and cartons in case you want to ship the module in the future.

2 Technical Support

● **ZT-2530M User Manual**

CD: \Napdos\ZigBee\ZT_Series\Document\ZT-2530M

http://ftp.icpdas.com.tw/pub/cd/usbcd/napdos/zigbee/zt_series/document/zt-2530m

3 Wiring and Configuring

(1) **Connect the +10 ~ +30V$_{DC}$ power supply** to the power supply terminals.

(2) Set the RF Channel (Router & Coordinator) by

- Router/Network(1) and Coordinator/Network(2) are two divided networks which have to use different RF channel. All the devices in the same ZigBee network need be set to use the same RF channel to transfer data.

Rotary Switch Position	0	1	2	……	E	F
Frequency (MHz)	2405	2410	2415	……	2475	2480

- The Method of Channel Selection：
  Scan the channel of WLAN which have been occupied via some tools. For example, you can download the application of Wifi Analyzer in your Smartphone. It would help you to detect the wireless signal and analysis the WLAN.

RFU-2400/ZigBee	WiFi
CH 0 (2405)	CH 1 (2412)
CH1 (2410)	CH 2 (2417)
CH 2 (2415)	CH 3 (2422)
CH3 (2420)	CH 4 (2427)
CH 4 (2425)	CH 5 (2432)
CH 5 (2430)	CH 6 (2437)
CH6 (2435)	CH 7 (2442)
CH 7 (2440)	CH 8 (2447)
CH 8 (2445)	CH 9 (2452)
CH 9 (2450)	CH 10 (2457)
CH A (2455)	CH 11 (2462)
CH B (2460)	CH 12 (2467)
CH C (2465)	CH 13 (2472)
CH D (2470)	CH 14 (2484)
CH E (2475)	
CH F (2480)	

(3) Set the Pan ID for Router and Coordinator

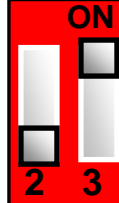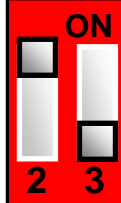- Pan ID is the group identity of a ZigBee network; all the devices in the same network should have the same Pan ID.

Pan ID	**ON** 1	**ON** 1
	0x0000	0x0001

- The ZT-2530M is a wireless bridge between the two different ZigBee networks. Therefore, the Pan ID for Router/Network(1) needs be consistent with the Pan ID in network 1; and Pan ID for Coordinator/Network (2) needs be the Pan ID in network 2.

- The Pan ID in Network (1) can be set to the same value as the Pan ID in Network (2).

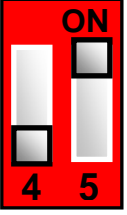## (4) Set the RF Power for Router and Coordinator
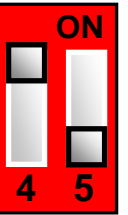
- Set the same RF Power for every device in the same ZigBee network can improve the quality of communication.

RF Power	**ON** 2 3	**ON** 2 3	**ON** 2 3	**ON** 2 3
	CE Compliant	FCC Compliant		Maximum Power
Internal Code	0x03	0x07	0x0B	0x0F

※ The RF power adjustment is at the user's sole risk.
ICP DAS does not guarantee to pass CE and FCC certifications after the adjustment, nor assume any liability for the adjustment.

(5) Set the Node ID for Router

● Node ID is used as a device identifier; the coordinator has a predefined node id [0000], and each device has a unique Node ID in the same ZigBee network.

● The available Node ID for the ZT-2530M is 0x00F0~0x00F3.

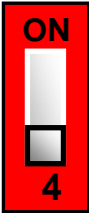| Node ID	ON 4 5	ON 4 5	ON 4 5	ON 4 5
	0x00F0	0x00F1	0x00F2	0x00F3

(6) Set Frame Type for Coordinator

● Frame Type is used to set the communication method in a ZigBee network. The coordinator of ZT-2530M supports two frame types: broadcast and unicast.

● Broadcast is the factory default setting and is used in most cases.

● Unicast is an advanced communication method used to improve data transfer performance under congestion on the network (2) where there are too many devices.

● Unicast is limit on DCON and Modbus protocols and only can be used to communicate with ZT-2000 series I/O modules or one I/O module after a ZT-2551/ZT-2571. Unicast does not support to communicate with two or more I/O modules after a ZT-2551 / ZT-2571.

Frame Type	ON 4	ON 4
	Broadcast (Default)	Unicast

(7) Set Encryption for Coordinator

- The ZT-2530M supports the 128-bit AES (Advanced Encryption Standard) encryption to encrypt data on a ZigBee network.

Encryption	ON 5 Disabled (Default)	ON 5 Enabled

4 Examples

- The configurations of ZT-2530M (Router) are set to the same with ZT-2550/ZT-2570

ZigBee Router / Network (1)				
Switch Type	Item	Status	Range	Comments
Rotary Switch	RF Channel	0	0	2405 MHz
DIP 1	Pan ID	OFF	0x0000	Pan ID is 0x0000
DIP 2	RF Power	OFF	0x00	0x01: RF Power is 0x07 (FCC, Default)
DIP 3		ON	0x01	
DIP 4	Node ID	OFF	0x00	0x00: Node ID is 0x00F0
DIP 5		OFF	0x00	

- The configurations of ZT-2530M (Coordinator) are different to the network (1). It establishes another network with its ZT-2510, ZT-2551, ZT-2571 and ZT-2000 I/O devices.

ZigBee Coordinator / Network (2)				
Switch Type	Item	Status	Range	Comments
Rotary Switch	RF Channel	E	14	2475 MHz
DIP 1	Pan ID	OFF	0x0000	Pan ID is 0x0000
DIP 2	RF Power	OFF	0x00	0x01: RF Power is 0x07 (FCC, Default)
DIP 3		ON	0x01	
DIP 4	Encryption	OFF	Disable	Encryption is disabled
DIP 5	Frame Type	OFF	Disable	Broadcast

5 LED Indicators

LED Indicator	Status	Description
PWR (Red LED)	Power Indicator	
	Steady-on	The ZT-2530M is powered up.
	Off	The ZT-2530M is off.
ZB Net (Green LED)	On the Coordinator Side	
	Steady-on	The ZigBee network is Established.
	Flashing to Steady-on	Rejoining a ZigBee Network or The network is occupied.
	On the Router Side	
	Steady-on	The signal is strong.
	Flash (500ms)	The signal is available.
	Flash (1s)	The signal is weak.
	Flash (2s)	The signal is unstable or there is no available network.
ZB TxD (Green LED)	The Data Transferring Status	
	Flash	Transferring data.
	Off	Waiting for transferring data.
ZB RxD (Yellow LED)	The Data Receiving Status	
	Flash	Receiving data.
	Off	Waiting for receiving data.

6 Communication Testing

(1) Launch the user's software to confirm the communication takes place between the nodes coordinator (ZT-2550/ ZT-2570), router and the end device.
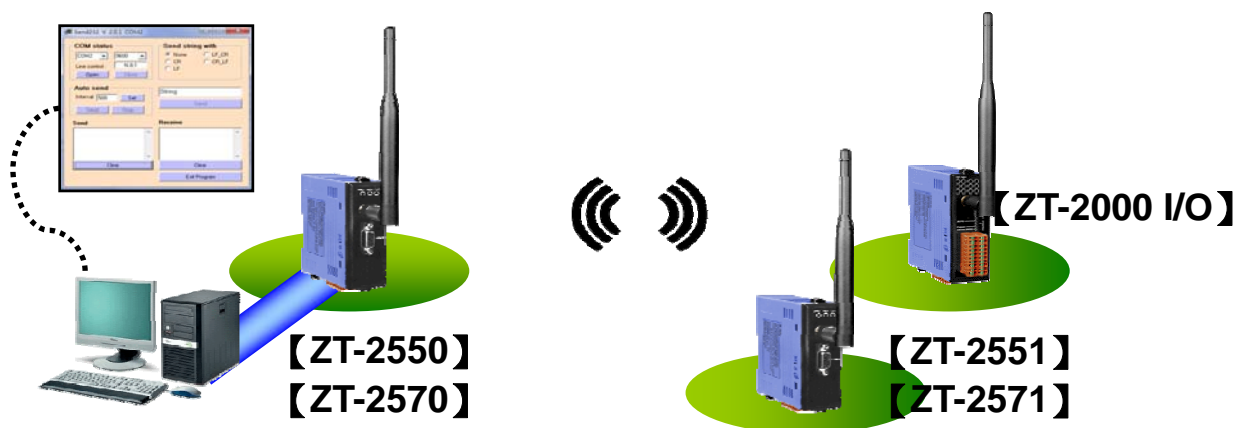
(2) Set the Pan ID, Node ID, RF Channel and RF Power for the Router/Network (1) via the hardware rotary dip switches to be consistent with the original coordinator (ZT-2550/ZT-2570). Note that the Node ID should be unique in the first network.

(3) Set the Pan ID, RF Channel and RF Power for the Coordinator/ Network (2) according to the users' requirements. The ZT devices in the second network need to have the same Pan ID, RF Channel and RF P ower settings, and each node needs to have a unique Node ID.

(4) Run the same software in step 1 again to confirm the communication takes place.