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## ZigBee Wireless Pair Connection

# *ZT-2052-IOP*

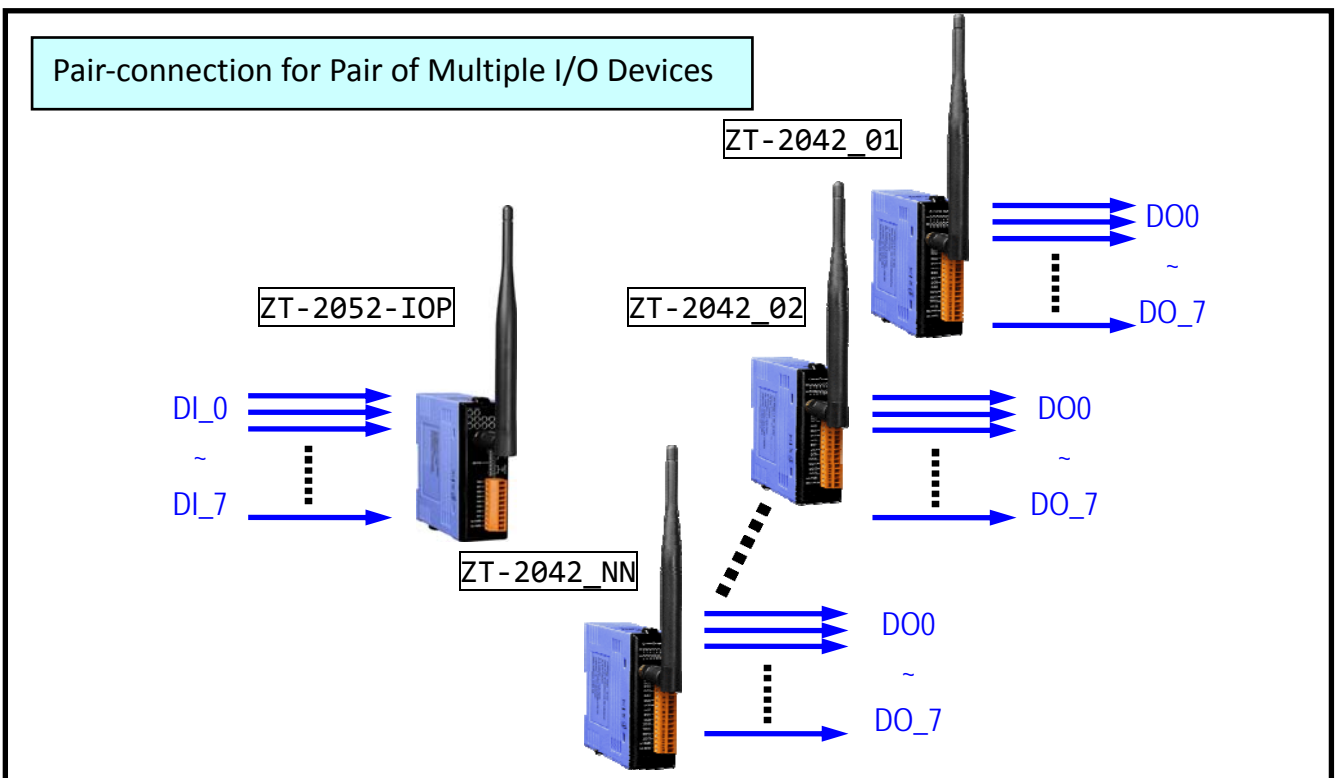
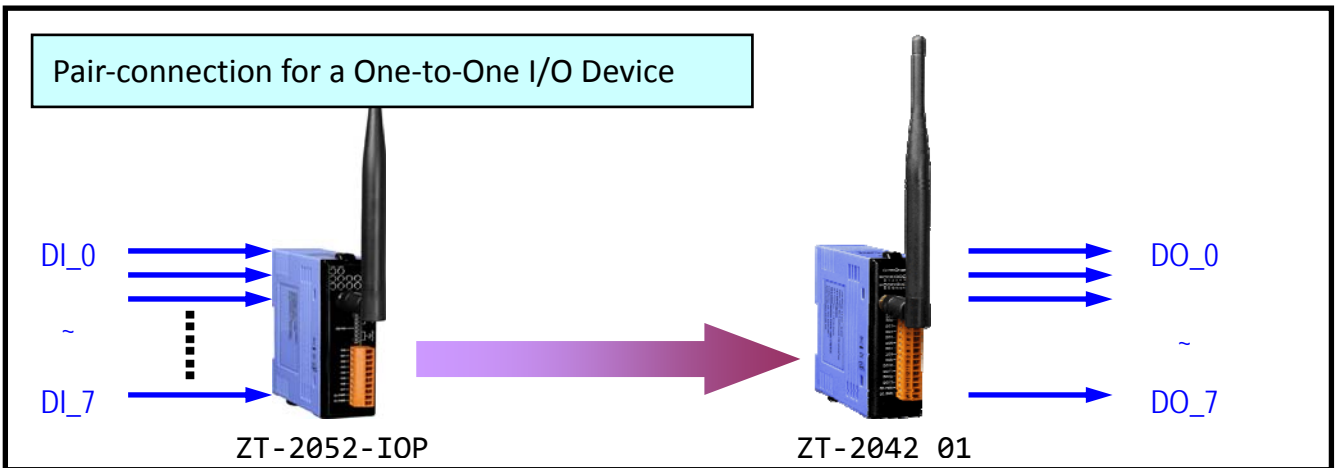
### *Quick Start*

# 1. Introduction

The ZT-2052-IOP module acts as a ZigBee coordinator that provides 8-channel digital input pair-connection function with module of ZT-2042 (4-ch PhotoMOS Relay Output and 4-ch Open Collector). An embedded I/O channel binding function means that there is no need to use an external controller.

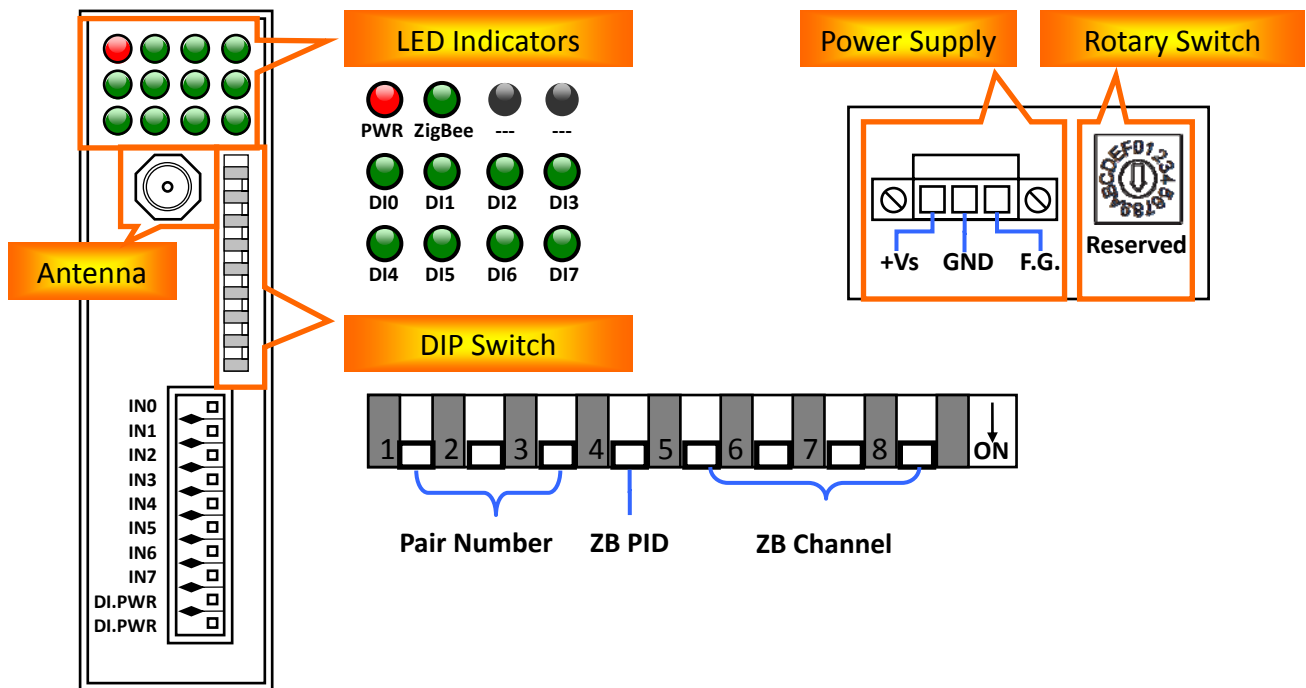
The status of each ZT-2052-IOP channel triggers the corresponding remote digital output channels on the ZT-2042 module. The ZT-2052-IOP continually transmits updates on the status of the digital input channels to the remote ZT-2042 to ensure that the digital output channels are synchronized.

The ZT-2052-IOP also provides external DIP and Rotary switches for easy configuration, which can be used to synchronize the digital signals in any environment where wiring is difficult.



## 2. Appearance

### ➤ ZT-2052-IOP



## 3. Wire Connections

### ➤ ZT-2052-IOP

Input Type	ON State LED ON Readback as 1	OFF State LED OFF Readback as 0
	Voltage > 3.5V	Voltage < 1V
TTL/ CMOS Logic		
	Relay ON	Relay OFF
Relay Contact		
	Open Collector ON	Open Collector OFF
Open Collector		

## 4. Configuration

The DIP and Rotary switches should be adjusted based on the specific network requirements, as described below.

### ➤ Rotary Switch (LSB Address)

- A. On the ZT-2052-IOP, this switch is fixed and cannot be adjusted. (The ZigBee coordinator is always set to 0x0000)
- B. On the ZT-2042, this switch is used to define the **Device ID** and **Node ID** for the ZigBee network.

	Rotary Switch Value	Note
ZT-2052-IOP	0 (0x0000)	Always set to the '0' position
ZT-2042	1 ~ 15 (0x0001 ~ 0x000F)	Can be set to any position from '1' to 'F' based on the number of I/O pairs

### ➤ DIP Switch (1) (MSB Address)

- A. On the ZT-2042, this switch is used to define the **MSB** (Most Significant Bit) address.

### ➤ DIP Switch (1~3) (Pair Number / Protocol, Checksum)

- A. On the ZT-2052-IOP, these switches are used to set **the number of ZT-2042 I/O pair devices**. The status of the connection to the ZT-2042 device will be shown via the red LED indicator on the ZT-2052-IOP and is updated every 10 seconds. For more details reading the LED indicators, refers to Chapter 6 "Appendix".
- B. On the ZT-2042, these switches are used to define the **protocol** and **checksum**.

	DIP Switch 1	DIP Switch 2	DIP Switch 3	Note
ZT-2052-IOP	Reserved	Pairing Number		Remote Device Number
	OFF	OFF	OFF	0 (check slave 0x01)
	OFF	OFF	ON	1 (check slave 0x01 – 0x02)
	.....			.....
	ON	ON	ON	7 (check slave 0x01 – 0x08)
ZT-2042	MSB Address	Protocol	Checksum	
	Off	OFF (DCON)	OFF	

### ➤ DIP Switch (4) (Pan ID)

This switch is used to define the **Pan ID** for both the ZT-2052-IOP and the ZT-2042 and must be set to the same value on both devices.

	DIP Switch 4	Note
ZT-2052-IOP	OFF (0x0000)	※The Pan ID must be set to the same value on both devices.
ZT-2042	ON (0x0001)	

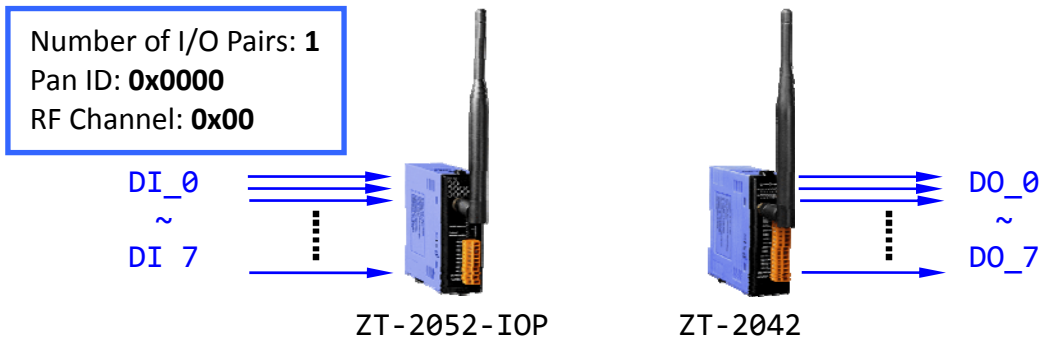
➤ **DIP Switch (5~8) (RF Channel)**

These switches are used to define the **RF channel** used for both the ZT-2052-IOP and the ZT-2042 and the values set for both devices must be the same.

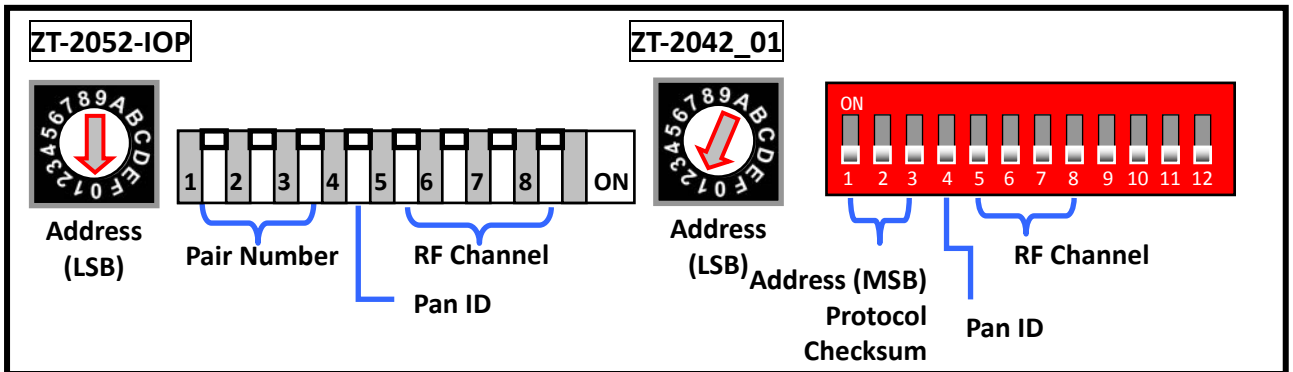
	DIP Switch 5	DIP Switch 6	DIP Switch 7	DIP Switch 8	Note
ZT-2052-IOP ZT-2042	0x08	0x04	0x02	0x01	Value
	OFF	OFF	OFF	OFF	0 (2405 MHz)
	OFF	OFF	OFF	ON	1 (2410 MHz)
	.....				.....
	ON	ON	ON	ON	F (2480 MHz)
※The RF channel must be set to the same value on both devices.					

# 5. Applications

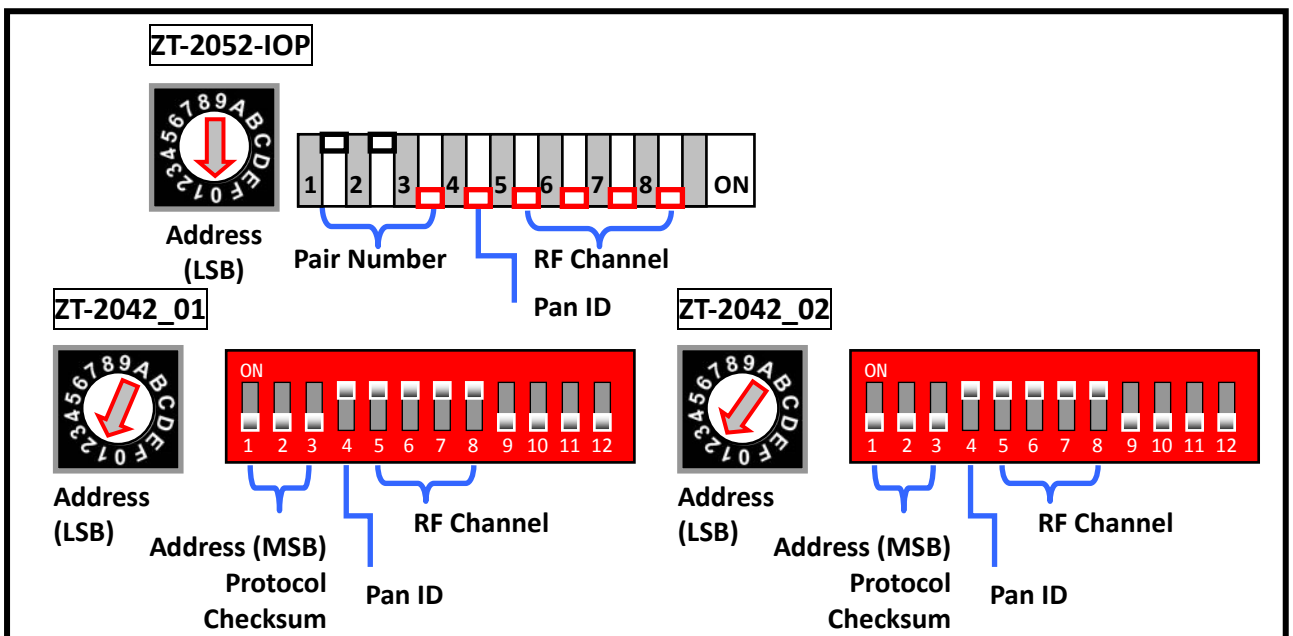
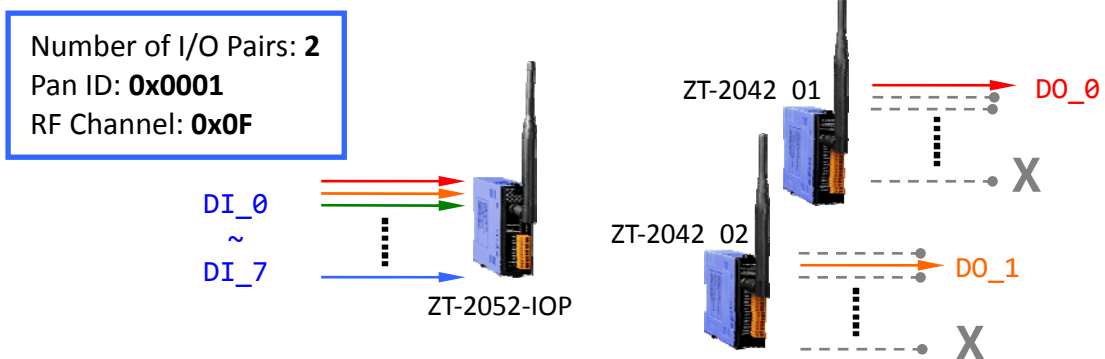
## ➤ Example 1 (Default: One-to-One I/O Pair-connection)



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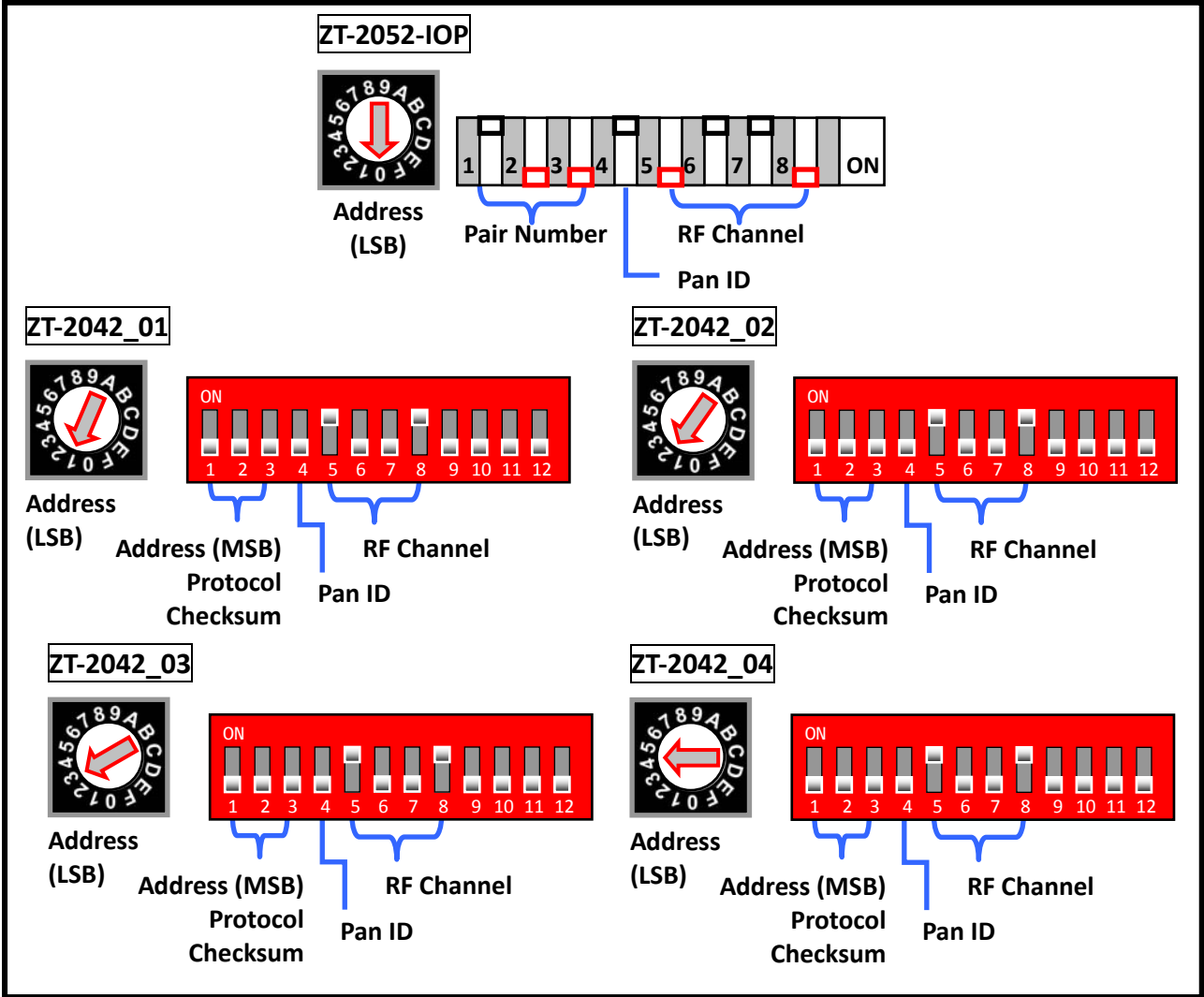
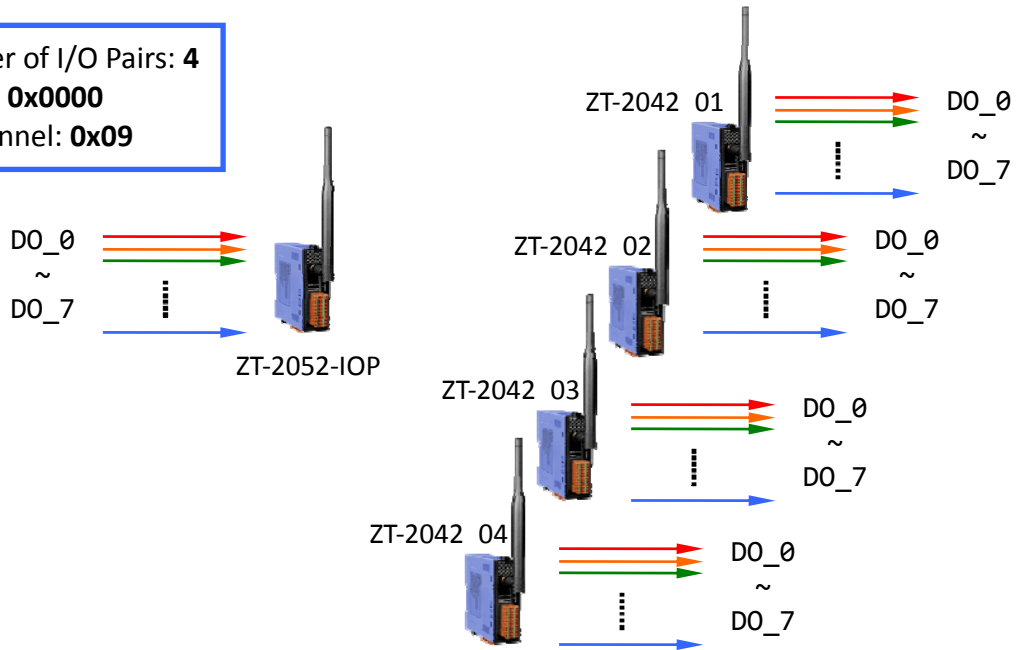


## ➤ Example 2 (Synchronizing the different digital channels to different devices)



➤ **Example 3 (Synchronizing all of the digital channels to different devices)**

Number of I/O Pairs: 4  
 Pan ID: **0x0000**  
 RF Channel: **0x09**



## 6. Appendix

### ➤ LED Indicators

ZT-2052-IOP	Status	Remarks
PWR	Steady Lit	ZigBee communication is functioning correctly
	Flashing Once	Communication to ZigBee slave 0x01 has been lost
	Flashing Twice	Communication to ZigBee slave 0x02 has been lost
	.....	.....
	Flashing Eight Times	Communication to ZigBee slave 0x08 has been lost
ZigBee	Steady Lit	A connection to the ZigBee network has been successfully established
	Flashing to Steady Lit	The device is attempting to rejoin an existing ZigBee network
DI	ON/Off	The status of the DI channels

ZT-2042	Status	Remarks
PWR	Steady Lit	The power is on
	Blinking (200ms)	There was a Module Initialization failure
	Blinking (1s)	The Host Watchdog is enabled
	Steady Unlit	The power is off
ZigBee	Steady Lit	The signal strength is high
	Blinking (500 ms)	A signal is available, but may become unstable if there is some serious interference
	Blinking (1s)	A signal is weak, and become unstable if there is any interference
	Blinking (2s)	The signal is poor or no ZigBee network is available.
DO	Steady Lit	The DO channel is enabled
	Steady Unlit	The DO channel is disabled

### ➤ Technical Service

If you have any difficulties using your ZT-2000-IOP series devices, please send a description of the problem to [service@icpdas.com](mailto:service@icpdas.com)

Include the following items in your email:

- *A description or diagram of the current DIP switch positions.*
- *Take Photos or plan to show the real environment on-site between devices.*