



ZigBee Wireless Pair Connection

ZT-2053-IOP

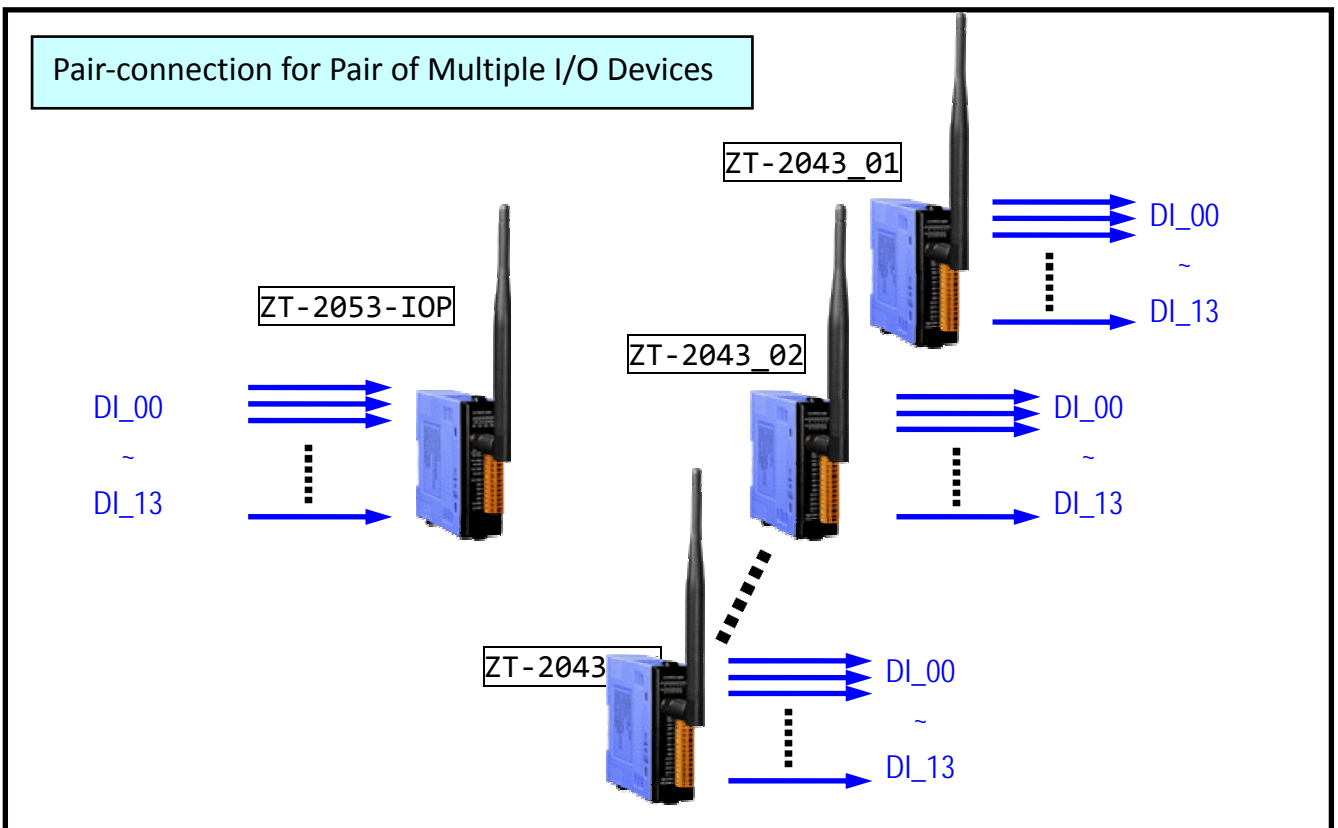
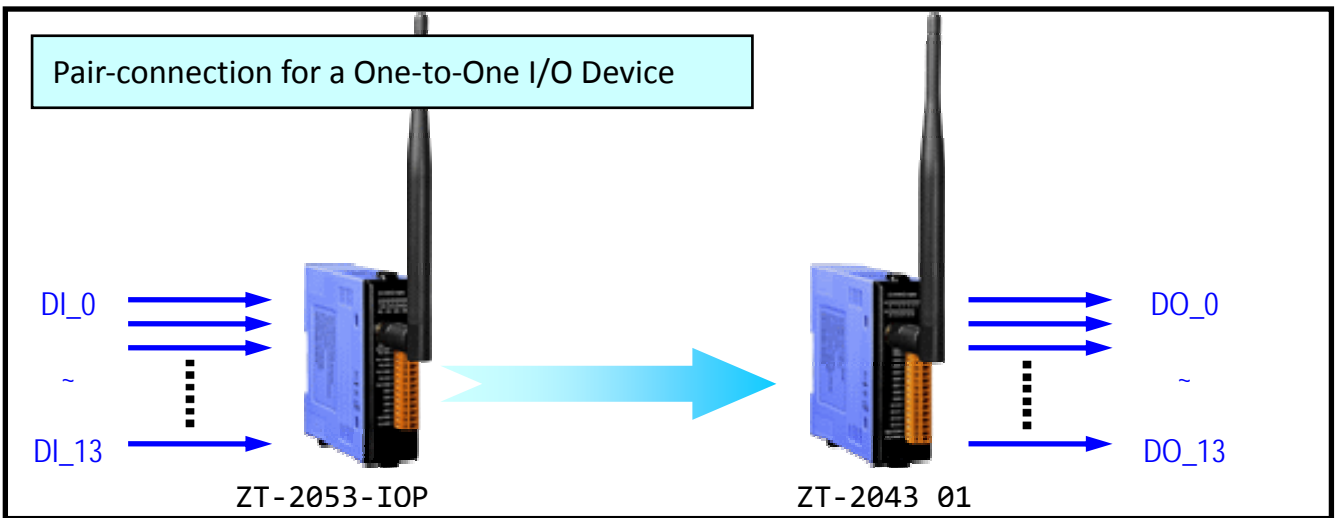
Quick Start

1. Introduction

The ZT-2053-IOP module acts as a ZigBee coordinator that provides 14-channel digital input pair-connection function with module of ZT-2043 (14-ch sink type digital output). An embedded I/O channel binding function means that there is no need to use an external controller.

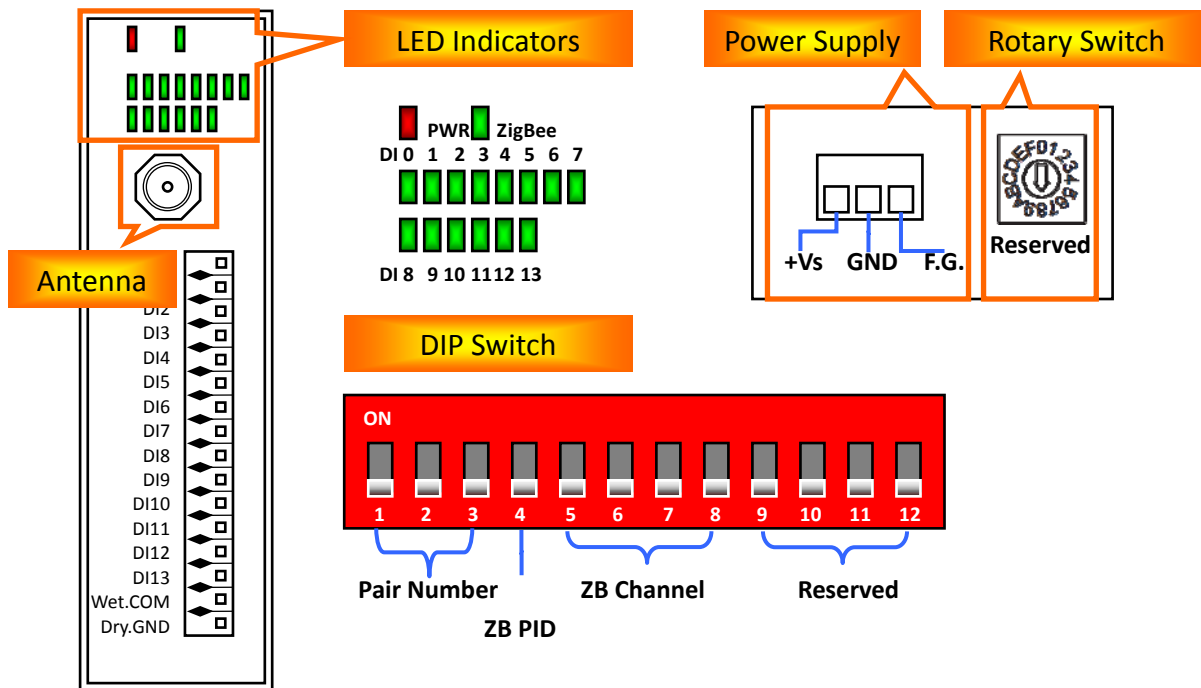
The status of each ZT-2053-IOP channel triggers the corresponding remote digital output channels on the ZT-2043 module. The ZT-2053-IOP continually transmits updates on the status of the digital input channels to the remote ZT-2043 to ensure that the digital output channels are synchronized.

The ZT-2053-IOP also provides external DIP switches for easy configuration, which can be used to synchronize the digital signals in any environment where wiring is difficult.



2. Appearance

➤ ZT-2053-IOP



3. Wire Connections

➤ ZT-2053-IOP

| Input Type | ON State LED ON Readback as 1 | OFF State LED OFF Readback as 0 |
|----------------------|----------------------------------|------------------------------------|
| Dry Contact | Relay ON | Relay OFF |
| | | |
| Wet Contact (Source) | Voltage > 3.5V | Voltage < 1V |
| | | |
| Wet Contact (Sink) | Open Collector ON | Open Collector OFF |
| | | |

4. Configurations

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-2053-IOP, this switch is fixed and cannot be adjusted. (The ZigBee coordinator is always set to 0x0000)
- B. On the ZT-2043, this switch is used to define the **Device ID** and **Node ID** of ZigBee network.

| | Rotary Switch Value | Note |
|-------------|--------------------------|---|
| ZT-2053-IOP | 0 (0x0000) | Always switch it to '0' position |
| ZT-2043 | 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-2043, this switch is used to define the **MSB** (Most Significant Bit) address.

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

- A. On the ZT-2053-IOP, these switches are used to set the **number of ZT-2043 I/O pairs** devices. The status of the connection to the ZT-2043 device will be shown via the red LED indicator on the ZT-2053-IOP and is updated every 10 seconds. For more details, reading the LED indicators, refer to Chapter 6 "Appendix".
- B. On the ZT-2043, these switches are used to define the **protocol** and **checksum**.

| | DIP Switch 1 | DIP Switch 2 | DIP Switch 3 | Note |
|-------------|--------------|----------------|--------------|-----------------------------|
| ZT-2053-IOP | Reserved | Pairing Number | | Connection Survival |
| | OFF | OFF | OFF | 0 (check slave 0x01) |
| | OFF | OFF | ON | 1 (check slave 0x01 – 0x02) |
| | | | | |
| | ON | ON | ON | 7 (check slave 0x01 – 0x08) |
| ZT-2043 | 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-2053-IOP and the ZT-2043 and must be set to the same value on both devices.

| | DIP Switch 4 | Note |
|-------------|--------------|--|
| ZT-2053-IOP | OFF (0x0000) | ※The Pan ID must be set to the same value on both devices. |
| ZT-2043 | ON (0x0001) | |

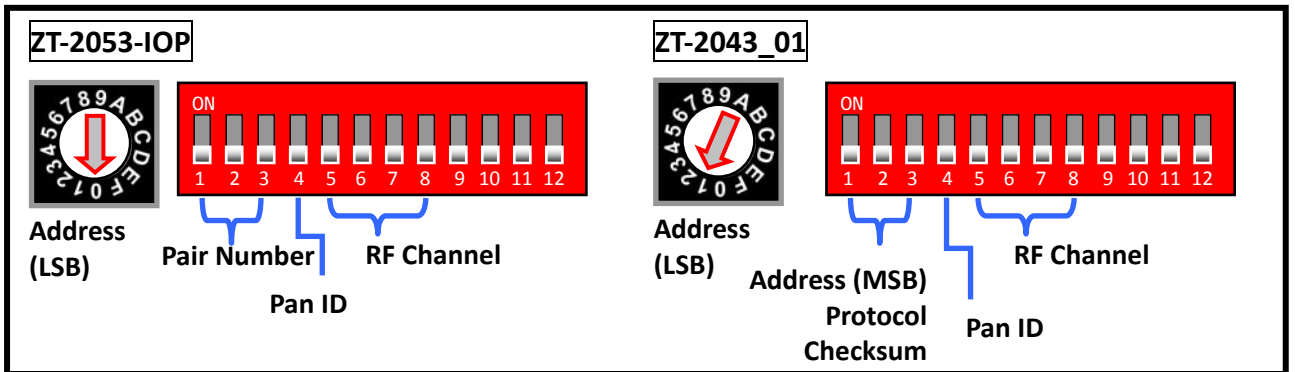
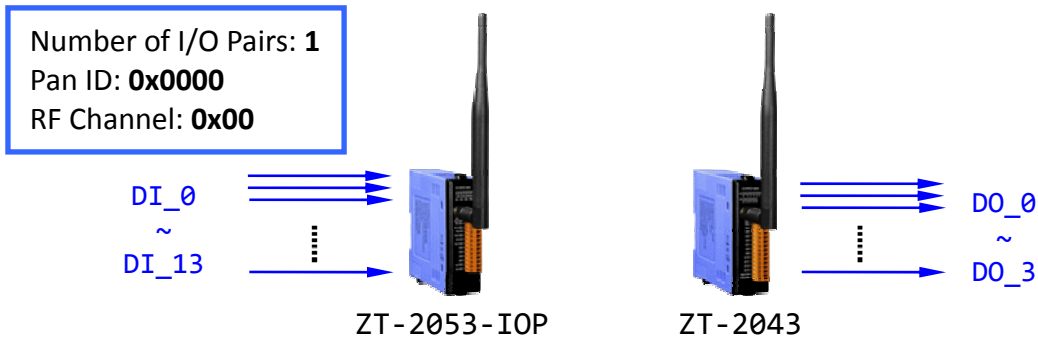
➤ **DIP Switch (5~8) (RF Channel)**

These switches are used to define the **RF channel** used for both the ZT-2053-IOP and the ZT-2043 and the values set for both devices must be the same.

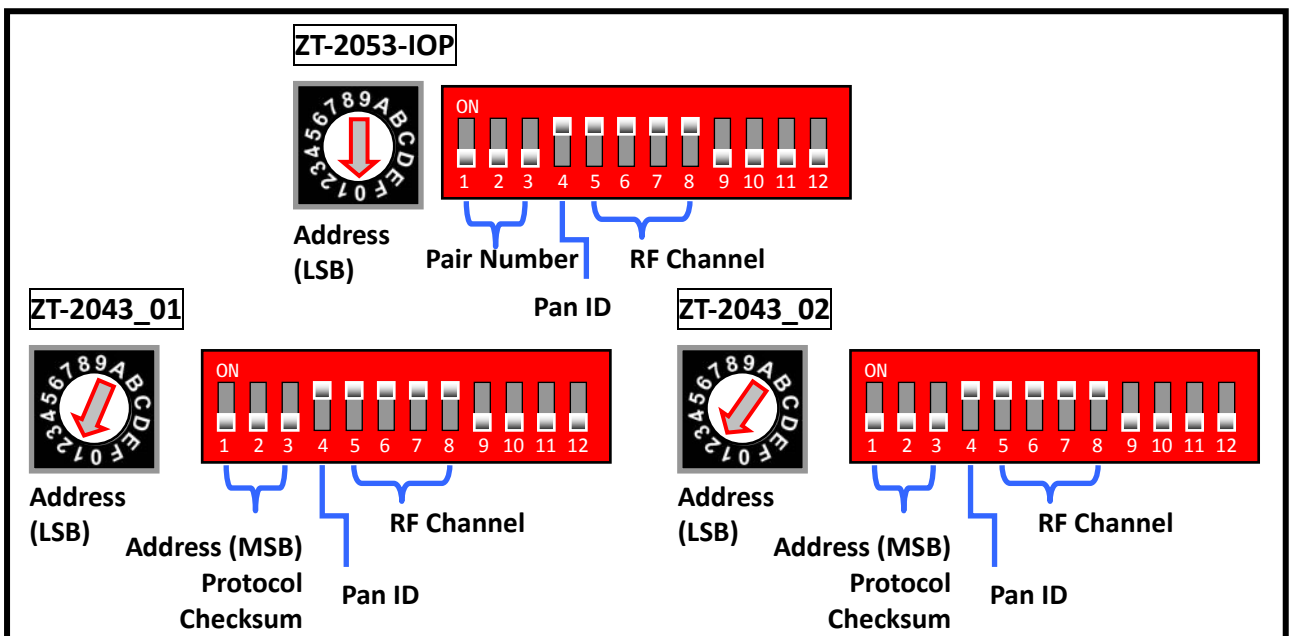
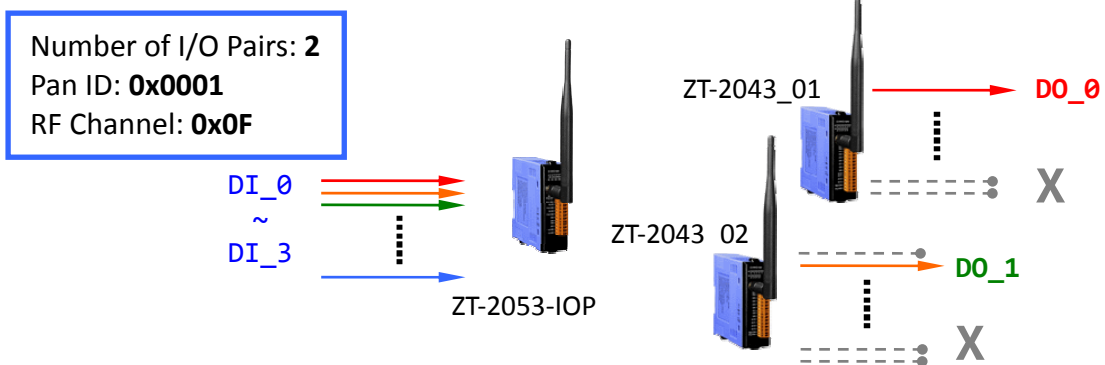
| | DIP Switch 5 | DIP Switch 6 | DIP Switch 7 | DIP Switch 8 | Note |
|--|--------------|--------------|--------------|--------------|--------------|
| ZT-2053-IOP ZT-2043 | 0x08 | 0x04 | 0x02 | 0x01 | Value |
| | OFF | OFF | OFF | OFF | 0 (2405 MHz) |
| | OFF | OFF | OFF | ON | 1 (2410 MHz) |
| | | | | | |
| | 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)

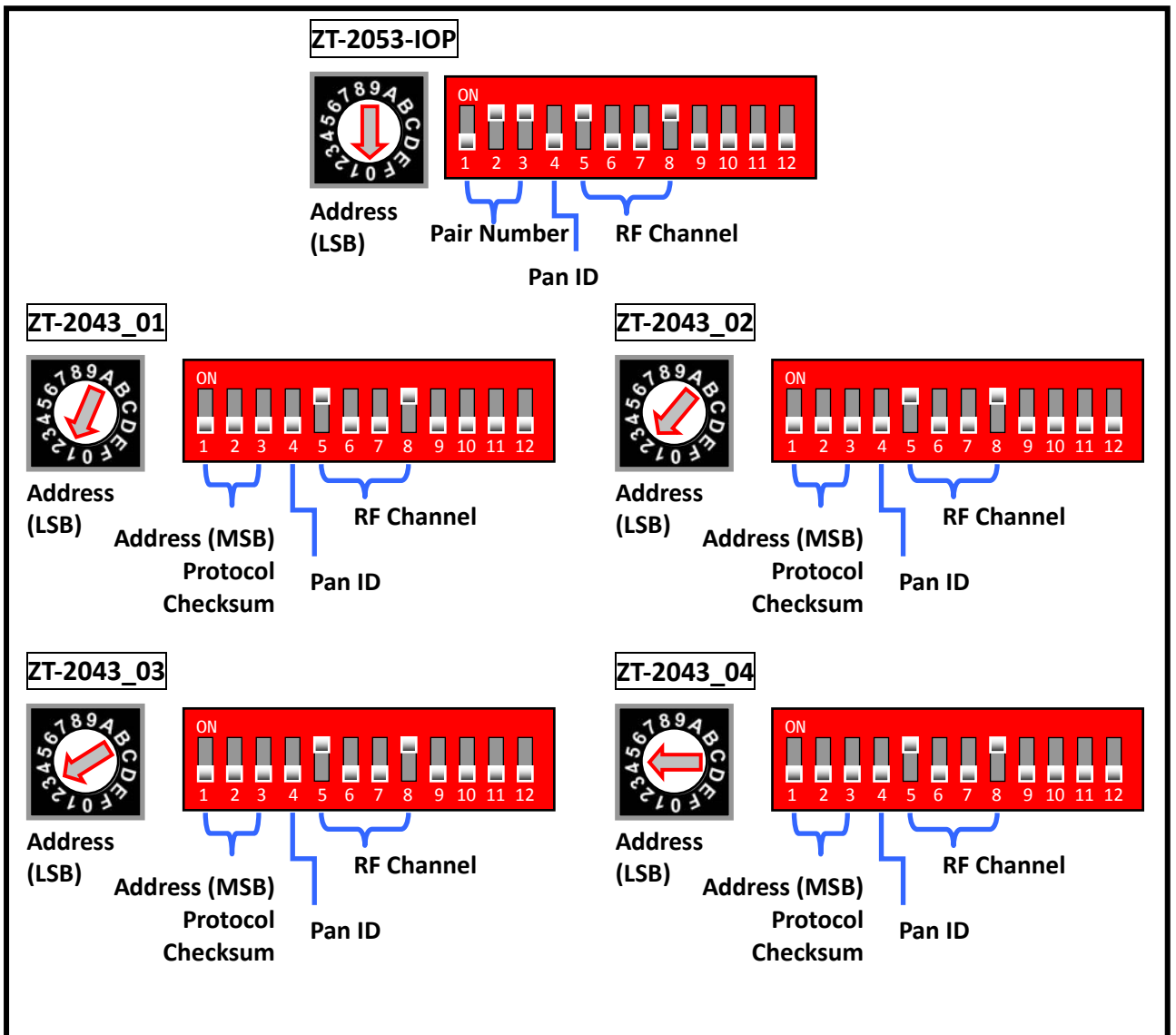
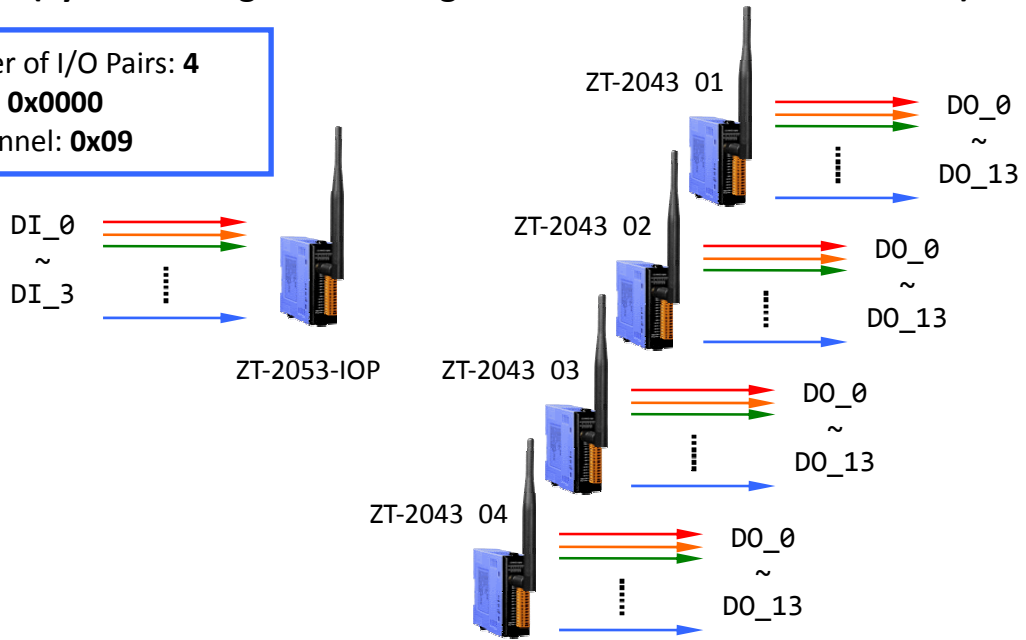


➤ Example 2 (Synchronizing the different digital channels to different devices)



➤ **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-2053-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-2043 | 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 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.*
- *Take Photos or plan to show the real environment on-site between devices.*