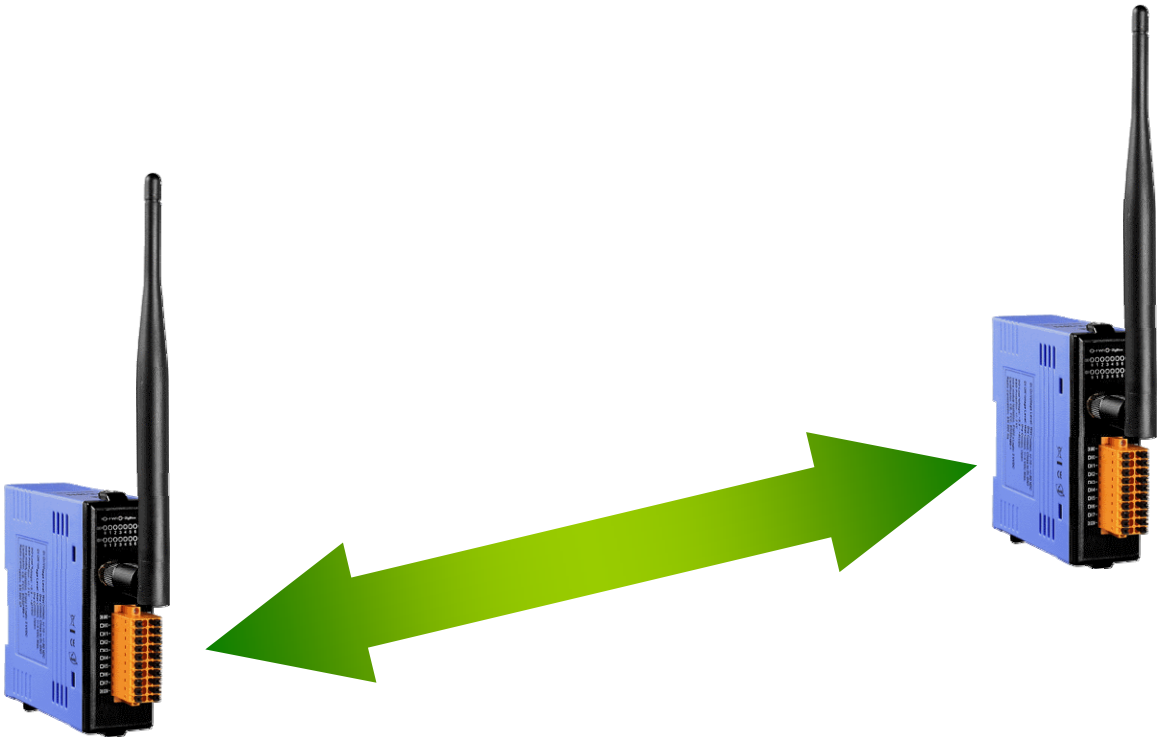


ZigBee Wireless Pair Connection

ZT-2055-IOP

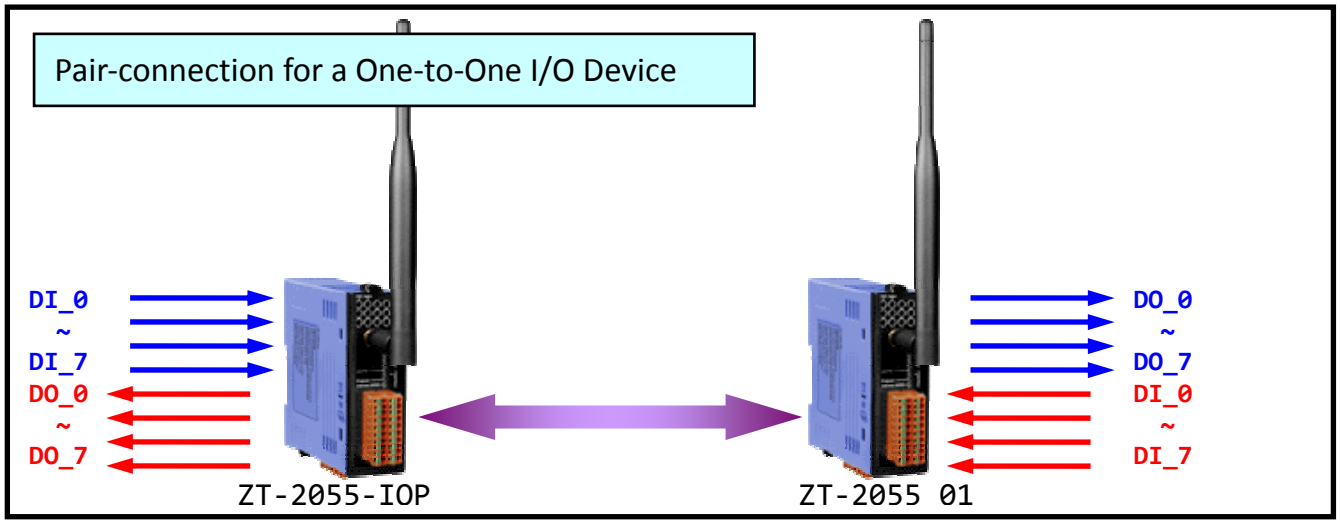
Quick Start

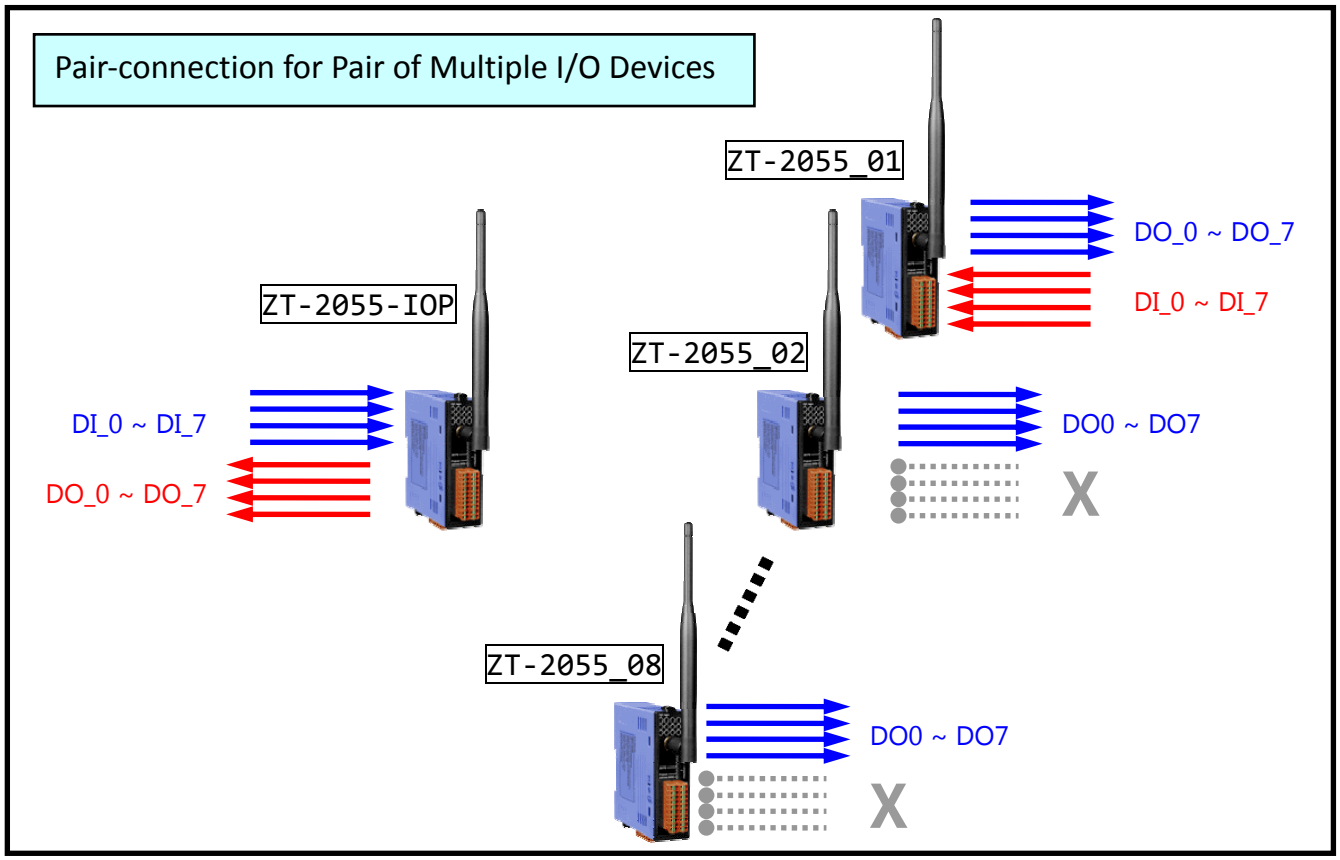
1. Introduction

The ZT-2055-IOP module is a ZigBee coordinator that offers 8 isolated channels for digital input and 8 isolated channels for digital output. An embedded I/O channel binding function means that there is no need to use an external controller.

The status of each channel is bound to a remote channel of the ZT-2055. The ZT-2055-IOP continually updates the status of the DO channel of the remote ZT-2055 based on its own DI channels. It also reads the status of the DI channel of the remote ZT-2055 to synchronize its own DO channels.

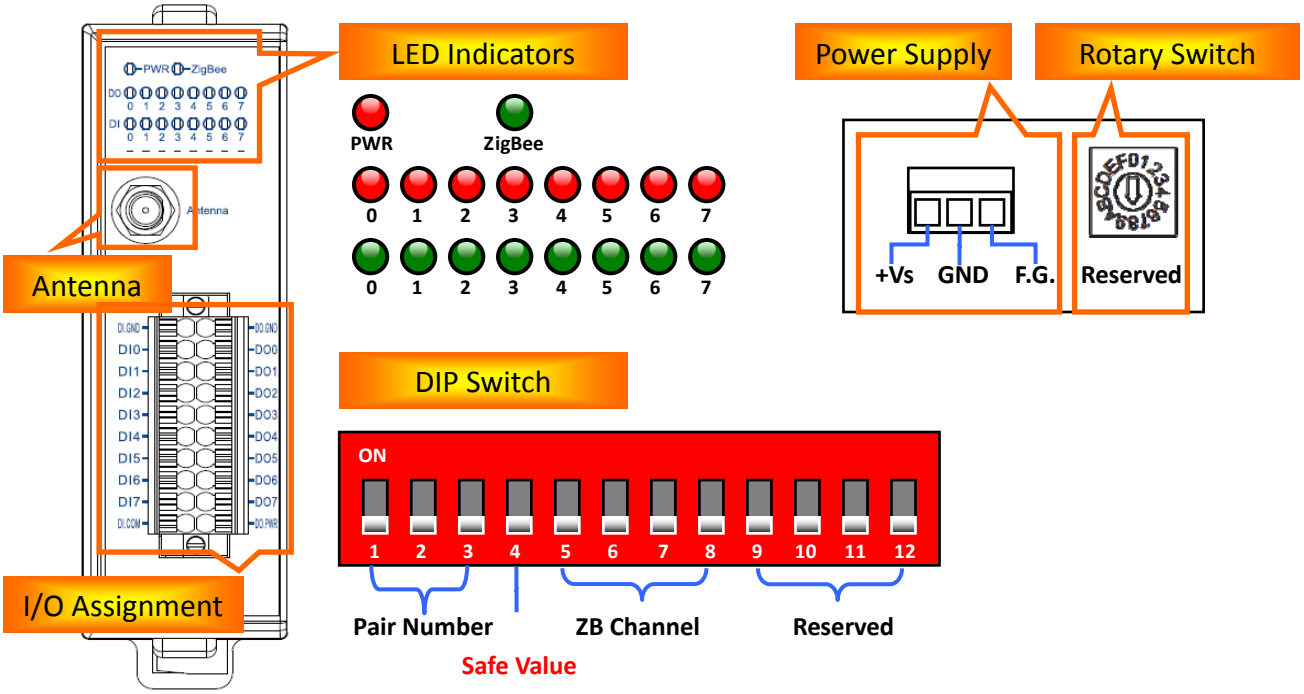
The ZT-2055-IOP also provides external DIP switches for easy configuration, which can be used to synchronize the digital signals in any difficult wiring environment.



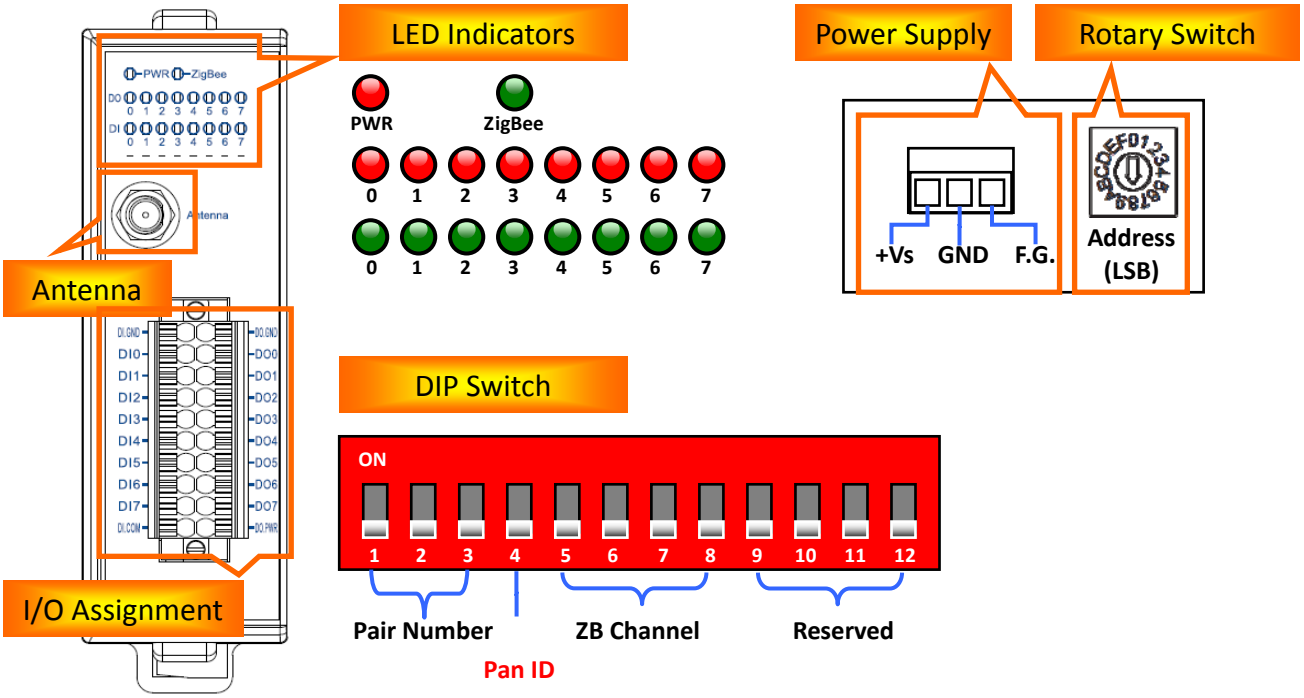


2. Appearance

➢ ZT-2055-IOP

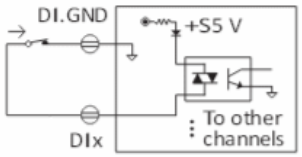
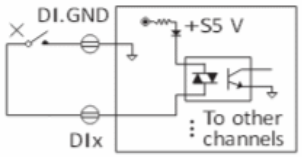
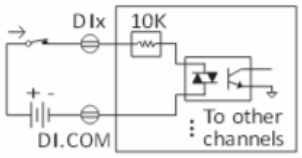
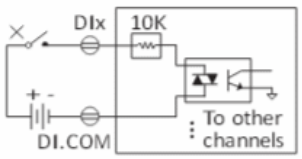
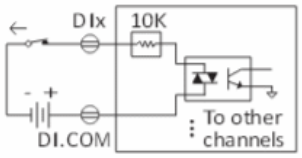
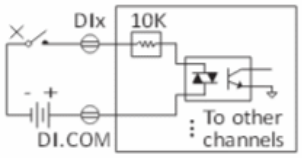


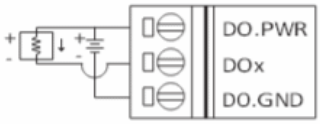
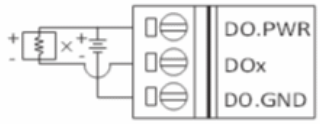
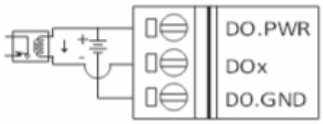
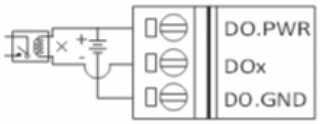
➢ ZT-2055



3. Wire Connections

- ZT-2055-IOP and ZT-2055

Input Type	ON State Readback as 1	OFF State Readback as 0
Dry Contact	Close to GND	Open
		
Wet Contact (Sink)	+10 ~ +50 VDC	+4 VDC Max.
		
Wet Contact (Source)	+10 ~ +50 VDC	+4 VDC Max.
		

Output Type	ON State Readback as 1	OFF State Readback as 0
Digital Output (Resistance Load)		
Digital Output (Inductive Load)		

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-2055-IOP, this switch is fixed and cannot be adjusted. (The ZigBee coordinator is always set to 0x0000)
  B. On the ZT-2055, the switch is used to define the Device ID and Node ID for the ZigBee network.

	Rotary Switch Value	Note
ZT-2055-IOP	0 (0x0000)	Always set to '0' position
ZT-2055	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-2055, this switch is used to define the **MSB** (Most Significant Bit) **address**.

➢ **DIP Switches (1~3)** (Pair Number / Protocol, Checksum)

A. On the ZT-2055-IOP, these switches are used to define the **number of I/O pairs** for showing debug message via LED indicators. It polls every ZT-2055 device every 10 seconds via an Unicast frame to check the **connection survival**.

B. On the ZT-2055, these switches are used to define the **protocol** and **checksum**.

	DIP Switch 1	DIP Switch 2	DIP Switch 3	Note
ZT-2055-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-2055	MSB Address	Protocol	Checksum	
	Off	OFF (DCON)	OFF	

➢ **DIP Switch (4)** (Safe Value / Pan ID)

This switch is used to enable the **watchdog** of the remote ZT-2055 device to start the safe value function.

	DIP Switch 4	Note
ZT-2055-IOP	OFF (0x0000)	If the safe value function of the remote ZT-2055 is disabled
	ON (0x0001)	If the safe value function of the remote ZT-2055 is enabled
ZT-2055	OFF (0x0000)	※The Pan ID configuration is fixed at the 0x0000

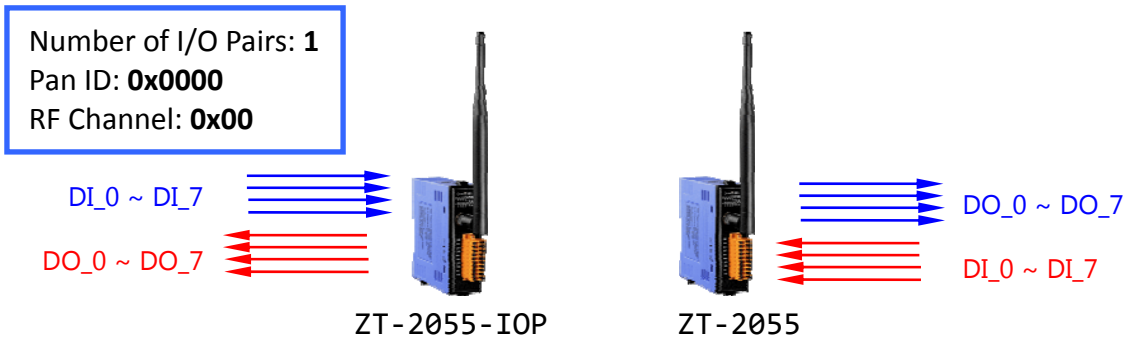
➢ **DIP Switches (5~8)** (RF Channel)

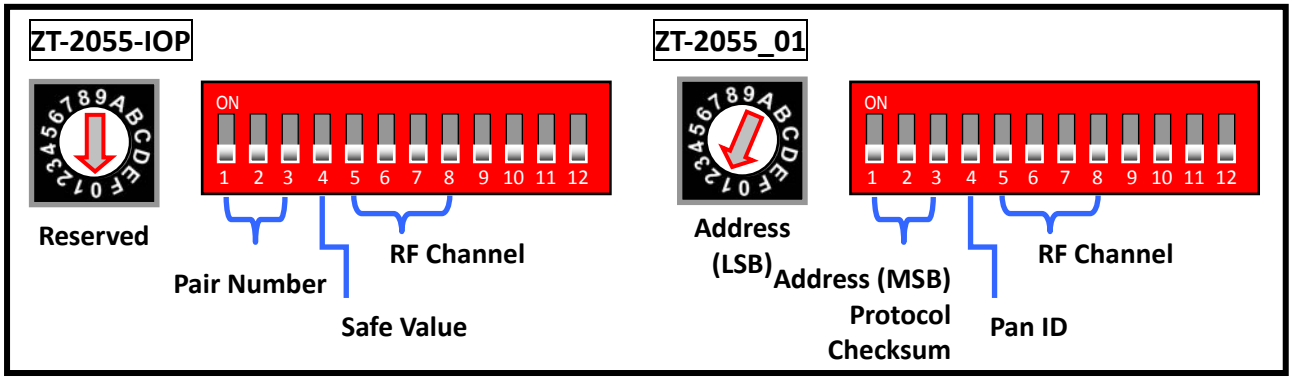
These switches are used to define the **RF channel** used for both the ZT-2055-IOP and ZT-2055 and the values set for both devices must be the same.

	DIP Switch 5	DIP Switch 6	DIP Switch 7	DIP Switch 8	Note
ZT-2055-IOP ZT-2055	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.					

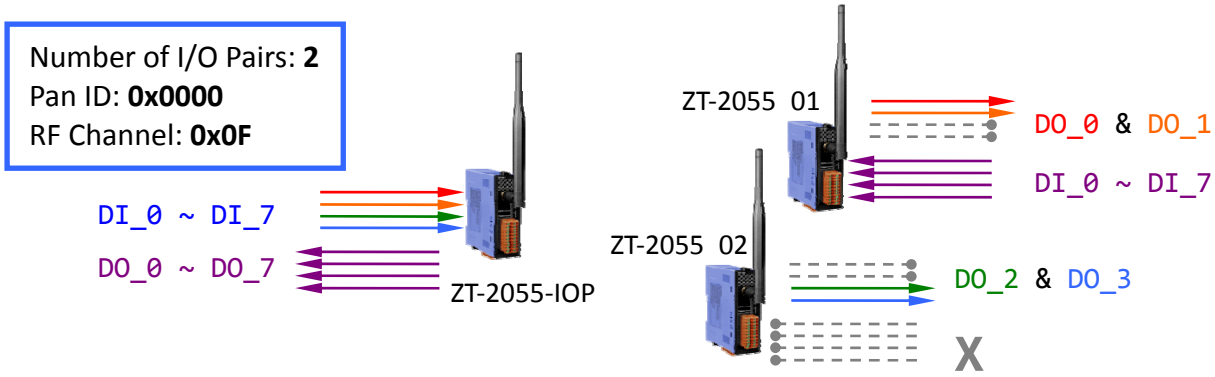
5. Applications

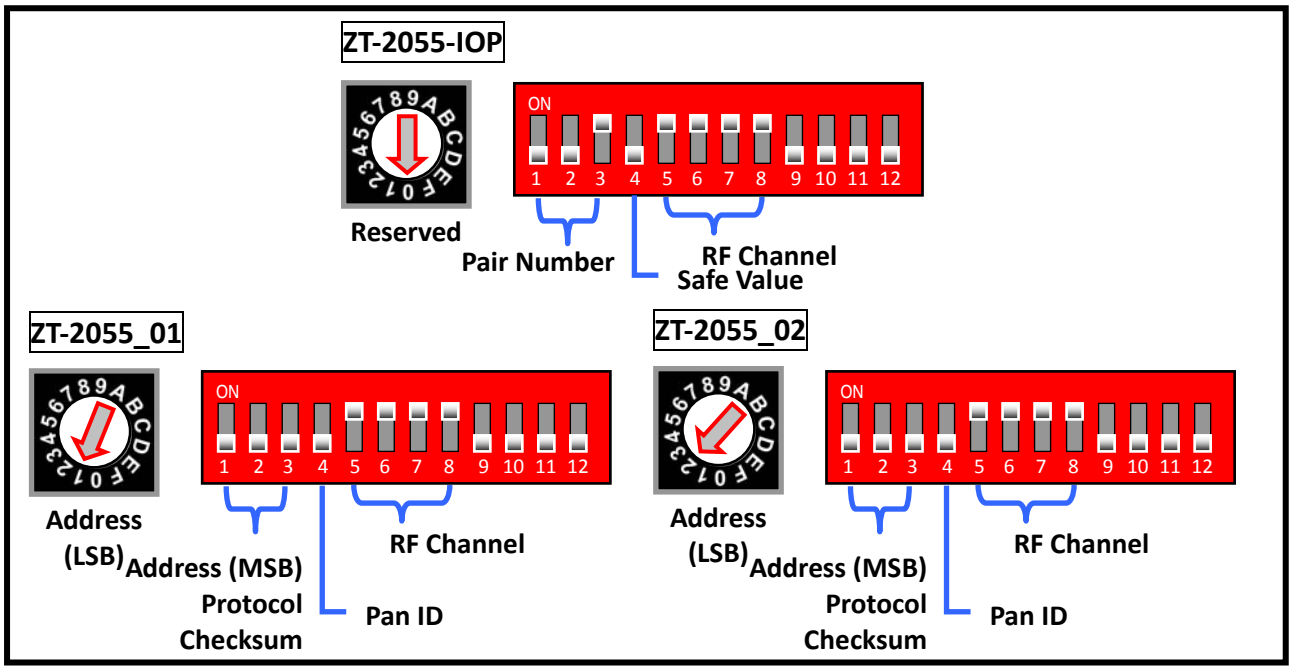
➢ Example 1 (Default: One-to-One I/O Pair-connection)





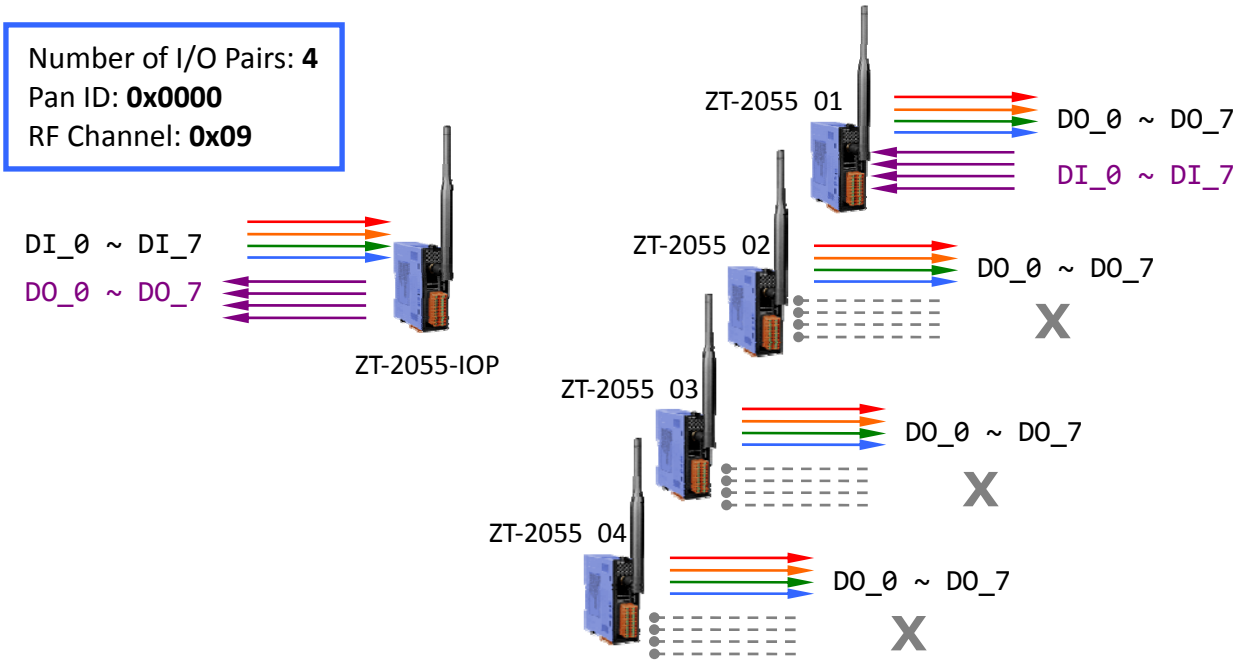
➢ Example 2 (Synchronizing different digital channels to different devices)

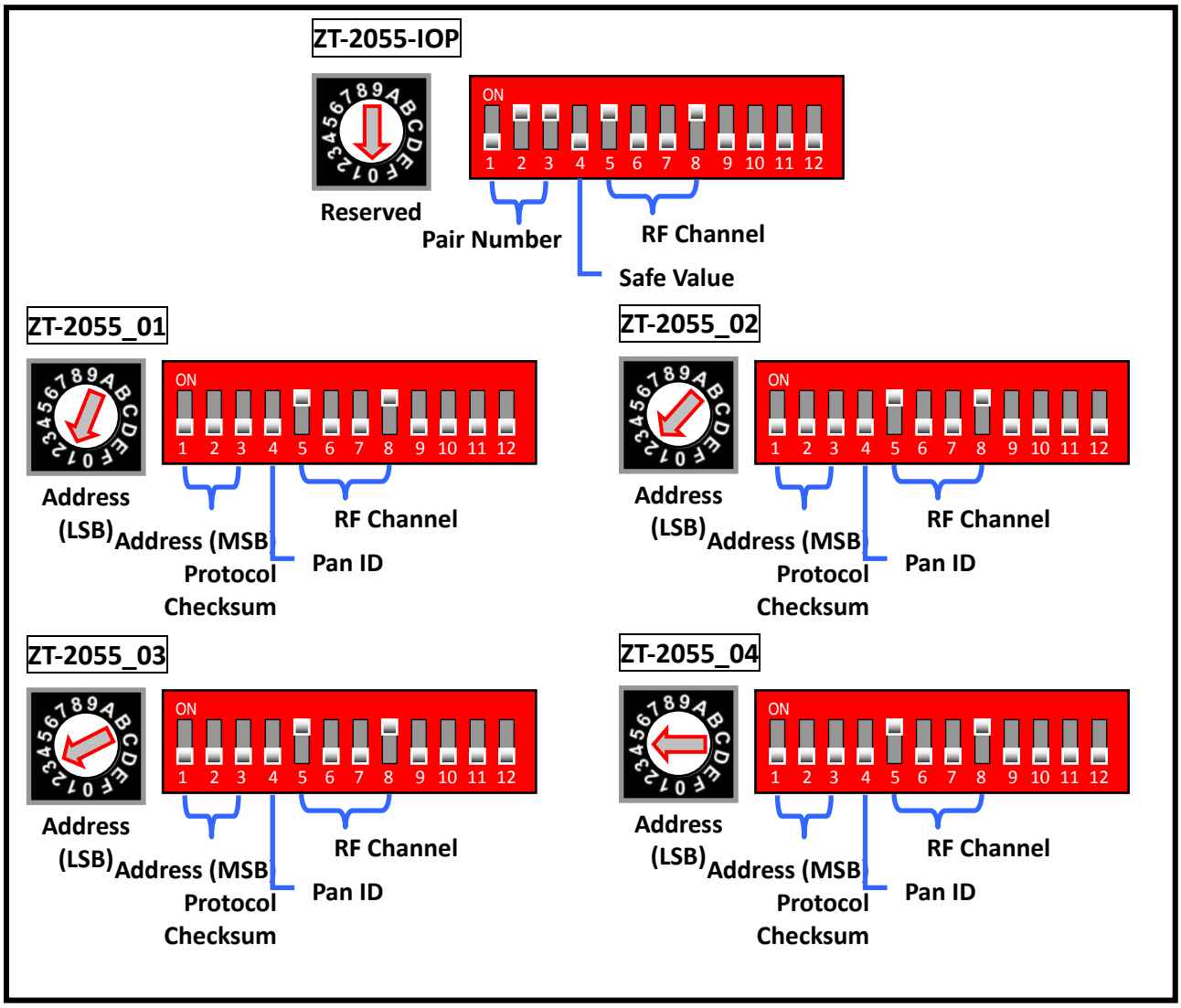




➢ Example 3 (Synchronizing all of the digital channels to different devices)

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





6. Appendix

➢ LED Indicators

ZT-2055-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	ZigBee network has been established
	Flashing to Steady Lit	Rejoin again the ZigBee network or it has occupied
DI	ON/Off	The status of the DI channels
DO	ON/Off	The status of the DO channels

ZT-2055	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)	The signal is available
	Blinking (1s)	The signal is weak
	Blinking (2s)	The signal is poor or no ZigBee network is available.
DI/DO	Steady Lit	The DI/DO channel is enabled
	Steady Unlit	The DI/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.*