Features

- ISM 2.4 GHz Operating Frequency
- Fully Compliant with 2.4G IEEE 802.15.4/ZigBee Specifications
- Supports AES-128 Encryption for the Wireless Communication
- Wireless Transmission Range up to 700 m (Default)
- Adjustable RF Transmission Output Power
- Physical Pair-connection Channels of 14 Digital Input
- 280 Logical Pair-connection Channels Supported
- Configurable I/O Pairing Relationship
- Surge and ESD Protection
- DIN-Rail Mountable

ZT-2053-IOG
ZigBee I/O Pair-connection Module with the 14-channel Isolated Digital Input

Introduction

ZT-20xx-IOG series (referred to as ZT-IOG) is a series of ZigBee wireless communication module with Digital Input and Digital Output channels. The "IOG" in the ZT-IOG is the abbreviation for the I/O Group and means the multi-to-multi Pair-connection I/O modules.

The ZT-2053-IOG module is one of the ZT-20xx-IOG series that provides 14 digital input channels. User can easily configure it as either a ZigBee Coordinator or a ZigBee Router via the external switches.

The ZigBee Coordinator will serve as a message processing and distribution center. In other words, as long as any DI of any ZT-IOG module changes its channel state, it will immediately trigger an event and upload it to the ZigBee Coordinator for I/O updating logic calculations to determine the DO output states of the ZT-IOG system. Then, the ZigBee Coordinator will broadcast a message periodically to all ZT-IOG ZigBee Router modules for synchronizing all DO channel states to achieve the multi-to-multi I/O Pair-connection function.

System Specifications

| Communication Interface	
Wireless Standards	ZigBee 2007 Pro
Transmission Power	11 dBm (Default, FCC Certificated); 19 dBm (Max.)
2.4 GHz Antenna	5 dBi Omni directional
Transmission Range (LoS)	700 m (Typical)
Max. Slaves in a ZigBee Network	255
LED Indicators	
Power / Debug	1 Red LED, ZigBee Device Power Indicator
ZigBee Communication	1 Green LED, ZigBee Communication Indicator
Digital Input and Output	14 Green LED, Digital Input Channel Indicators
Isolation	
Intra-module Isolated, Field-to-Logic	3750 V_{DC}
EMS Protection	
ESD (IEC 61000-4-2)	4 kV Contact for Power Line, Communication Line and each Channel, 8 kV Air for Random Point
EFT (IEC 61000-4-4)	4 kV for Power Line
Surge (IEC 61000-4-5)	3 kV for Power
Power	
Input Voltage Range	+10 V_{DC} ~ +30 V_{DC}
Power Consumption	0.72 W (Max.)
Mechanical	
Flammability	Fire Retardant Materials (UL94-V0 Level)
Dimensions (L x W x H)	87 mm x 33 mm x 110 mm
Installation	DIN-Rail
Environment	
Operating Temperature	-25 ~ +75°C
Storage Temperature	-30 ~ +80°C
Relative Humidity	10 ~ 90% RH, Non-condensing

Applications

I/O Specifications

Digital Input	
Input Channels	14
Dry Contact (Sink)	On Voltage Level: Close to GND
	Off Voltage Level: Open
	Effective Distance for Dry Contact: 500 m Max.
Wet Contact (Sink/Source)	On Voltage Level: +3.5 V_{DC} ~ +30 V_{DC}
	Off Voltage Level: +1 V_{DC} Max.
Input Impedance	3 kΩ, 0.33 W

5

3

ZigBee Products

Wiring

Input Type		ON State LED ON Readback as 1	OFF State LED OFF Readback as 0
Dry Contact		Relay ON	Relay OFF
		Relay Close — Dry.GND / INx	Relay Open — Dry.GND / INx
Wet Contact (Source)		Voltage > 3.5 V	Voltage < 1 V
		Wet.COM / INx	Wet.COM / INx
Wet Contact (Sink)		Open Collector ON	Open Collector OFF
		Wet.COM / INx	Wet.COM / INx

Appearance

LED Indicators

PWR ZigBee
DI 0 1 2 3 4 5 6 7
DI 8 9 10 11 12 13

Antenna

Pin Assignments:
DI0, DI1, DI2, DI3, DI4, DI5, DI6, DI7, DI8, DI9, DI10, DI11, DI12, DI13, Wet.COM, Dry.GND

Reserved
(bit0) | (bit4) — Node ID
AES128 — Disable
Pulse — Level
Init — RUN
RF Channel

F.G.
GND
+Vs

DIP Switches
Rotary Switch
Power Supply

Dimensions (Units: mm)

Left Side View — 87, 78, 39.0, 35.4, 24.6, 8.0
Front View — 33, 105, 110
Right Side View
Top View — 87, 78
Rear View
Bottom View
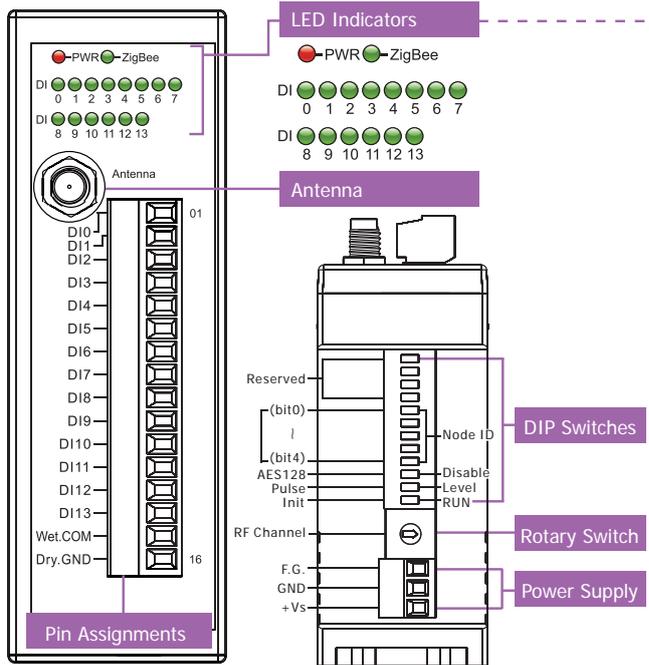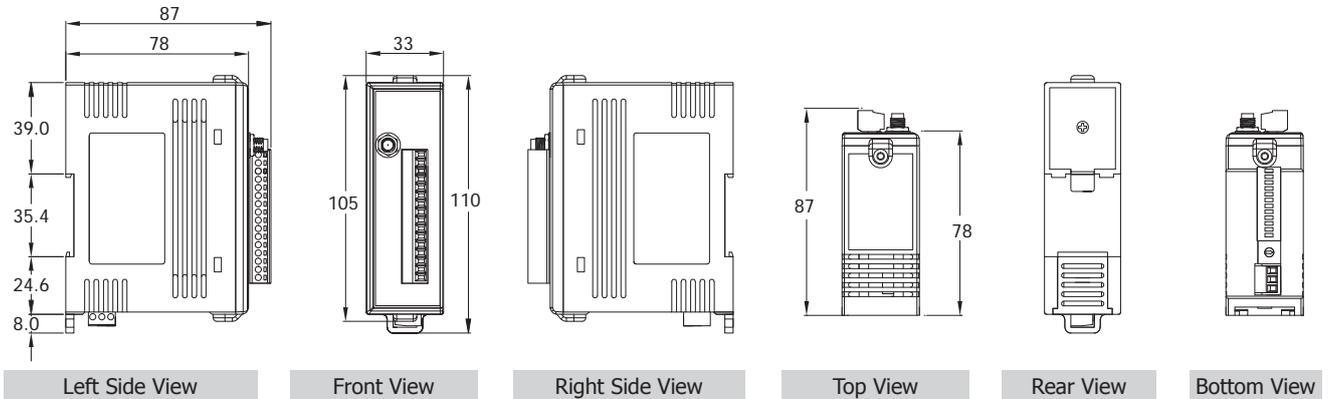
Ordering Information

ZT-2053-IOG CR	ZigBee I/O Group (Pair-connection) Module with the 14-channel Isolated Digital Input (ZigBee Coordinator & ZigBee Router)(RoHS)

Note: If there is any requirement to do the advanced configuration, please remember to order at least one ZT-USBC or ZT-2570 ZigBee converter.

Accessories

ZT-2570 CR	Ethernet/RS-485/RS-232 to ZigBee Converter (Host, ZigBee Coordinator) (RoHS)
ZT-USBC	USB to ZigBee Converter (RoHS)
ZT-2510 CR	ZigBee Repeater (Slave, ZigBee Router) (RoHS)
External Antenna	2.4GHz External Antenna, RP SMA Male (Plug)
Extension Cable	3S00x-1, RG58A/U x Meter Long RP-SMA male to RP-SMA Female

5
3

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