

## 5.3. ZigBee Repeater

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ZigBee Products



### Features

- ISM 2.4 GHz Operating Frequency
- Fully Compliant with 2.4 G IEEE802.15.4/ZigBee Specifications
- Wireless Transmission Range up to 100 m (ZB-2510/ZB-2510-T)
- Wireless Transmission Range up to 700 m (ZB-2510P/ZB-2510-PA)
- USB Setting Interface
- GUI Configuration Software (Windows Version)
- DIN-Rail Mountable



### Introduction

The ZB-2510 series are ZigBee-based repeater modules included in the ICP DAS product line. The main difference between these products is the transmission range. The ZB-2510 and ZB-2510-T support an extended transmission range of up to 100 meters, whereas the ZB-2510P and ZB-2510-PA can transmit to a maximum of 700 meters. All modules are able to operate in broadcast and user-defined route modes. When the repeater is set to broadcast mode, the transmission route is constructed by the ZigBee Host. The repeater will forward any data that it receives using broadcast mode. The advantage of this mode is that the repeater can be deployed in a "haphazard" manner without any concern about positioning. However, the main flaw of this mode is that if there are too many broadcast data packets in a ZigBee network, it will cause the network to crash. In contrast, when the repeater is set to user-defined route mode, it will only forward data using the user configured route. The benefit of this mode is that the data loading of the ZigBee network will be reduced, but the user must plan the data transmission route for the entire ZigBee network before setting up the application. If a mistake is made on even one repeater point, the entire ZigBee network will be invalid.

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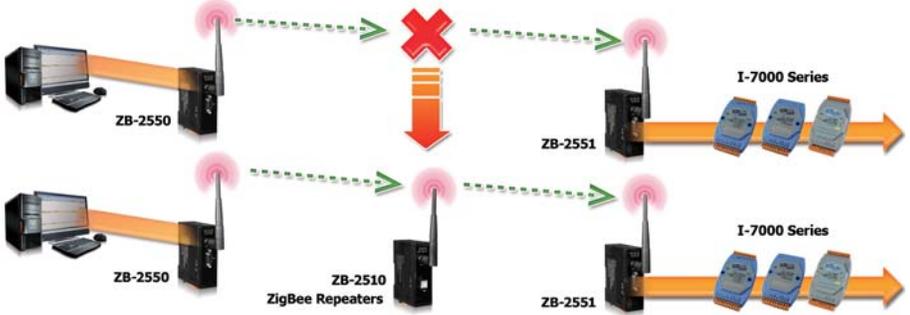
ZigBee Repeaters

ZB-2510/ZB-2510-T/ZB-2510P/ZB-2510-PA

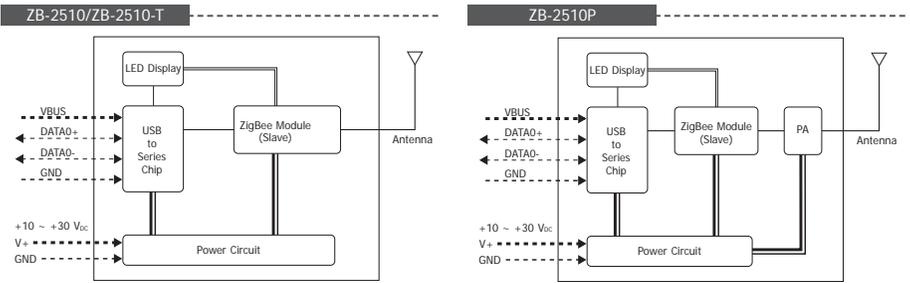
### Specifications

Models	ZB-2510	ZB-2510-T	ZB-2510P	ZB-2510-PA
<b>ZigBee Module</b>				
RF Channels	16			
Receive Sensitivity	-102 dBm			
Transmit Power	9 dBm	3 ~ 4 dBm	22 ~ 24 dBm	22 ~ 24 dBm
Network Topology	Star, Mesh and Cluster tree			
Antenna (Omni-Direct)	2.4 GHz - 3 dBi		2.4 GHz - 5 dBi	
Transmission Range	100 m		700 m	
<b>Setting Interface</b>				
USB	Type B			
Include Cable	CA-USB18 (1.8 M cable), USB TYPE A Connector (TYPE A to TYPE B cable provided)			
Compatibility	USB 1.1 and 2.0 standard			
Driver Supported	Windows 98/ME/2000/XP/Vista/7 (32-bit)			
<b>LED Indicators</b>				
ZigBee Net State	Green			
ZigBee Rx/D	Yellow			
Power	Red			
<b>Power</b>				
Protection	Power reverse polarity protection			
EMS Protection	ESD, Surge, EFT			
Required Supply Voltage	+10 Vdc ~ +30 Vdc			
Power Consumption	1.5 W		3 W	
Connector	3-Pin 5.08 mm Removable Terminal Block			
<b>Mechanical</b>				
Casing	Plastic			
Flammability	UL 94V-0 fire-retardant materials			
Dimensions (W x L x H)	33 mm x 107 mm x 78mm			
Installation	DIN-Rail			
<b>Environment</b>				
Operating Temperature	-25 °C ~ +75 °C			
Storage Temperature	-40 °C ~ +80 °C			
Relative Humidity	5 ~ 90% RH, Non-condensing			

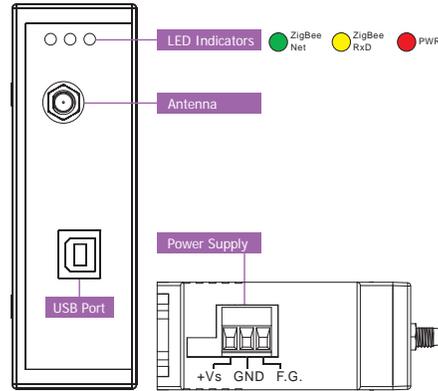
Applications



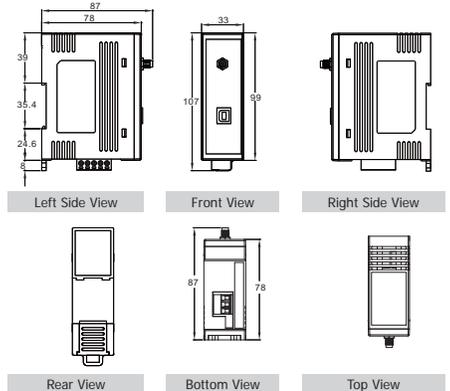
Internal I/O Structure



Appearance



Dimensions (Units: mm)



Ordering Information

ZB-2510 CR	ZigBee Repeater (RoHS)
ZB-2510-T CR	ZigBee Repeater (RoHS) (CE/FCC)
ZB-2510P CR	High Power Amplifier ZigBee Repeater (RoHS)
ZB-2510-PA CR	High Power Amplifier ZigBee Repeater (RoHS)

Accessories

ZB-2550 CR	RS-485/RS-232 to ZigBee Converter (Host) (RoHS)
ZB-2550-T CR	RS-485/RS-232 to ZigBee Converter (Host) (RoHS) (CE/FCC)
ZB-2550P CR	RS-485/RS-232 to High Power Amplifier ZigBee Converter (Host) (RoHS)
ZB-2550-PA CR	High Power Amplifier ZigBee Converter (RoHS)