# Zigbee1085

# User's Manual

**Beijing ART Technology Development Co., Ltd.**

# *Contents*

# *Chapter 1 Overview*

Zigbee is the specification of a low-cost, low-power wireless communications solution, meant to be integrated as the main building block of ubiquitous networks.

Zigbee1085 is a data acquisition module based on Zigbee wireless transmission. It can sample data and transfer the data to processing device to constitute the laboratory, product quality testing center and systems for different areas of data acquisition, waveform analysis and processing. It may also constitute the monitoring system for industrial production process.

## Unpacking Checklist

Check the shipping carton for any damage. If the shipping carton and contents are damaged, notify the local dealer or sales for a replacement. Retain the shipping carton and packing material for inspection by the dealer.

Check for the following items in the package. If there are any missing items, contact your local dealer or sales.

➢ Zigbee1085
➢ ART Card
  a) user's manual (pdf)
  b) drive
  c) catalog
➢ Warranty Card

## FEATURES

➢ Input Range: 0~5V, 0~10V, ±5V, ±10V, 0~20mA, 4~20mA, ±20mA
➢ 16-bit resolution
➢ Sampling Frequency: 10Hz
➢ Analog Input Mode: 4-ch differential
➢ Full-scale Drift: 25ppm/℃
➢ Isolation Voltage: 3000V
➢ Digital Input: TTL Level, can measure high-level, low-level status and frequency (max 1KHz)
➢ Digital Isolated voltage: 3750V
➢ Open-collector Output: external power supply: +5V ~ +30V, each channel can output 100mA (Max)
➢ Relay Output: 4-ch A-power relay
➢ Contact Rating: $125V_{AC}$@0.5A, $30V_{DC}$@2A
➢ Built-in Watchdog
➢ Power Supply: regulated +10V ~ +30 $V_{DC}$
➢ Power Consumption: 1W @ $24V_{DC}$

## Configuration Table

■ **TABLE1     Baud Rate Code Table**

| Code | 00 | 01 | 02 | 03 | 04 | 05 | 06 | 07 |
|------|------|------|------|------|-------|-------|-------|--------|
| Rate | 1200 | 2400 | 4800 | 9600 | 19200 | 38400 | 57600 | 115200 |

■ **TABLE2    Analog Input Type Code and the Error Table**

| Input Type | Input   Range | Typical Accuracy ( %) | Maxinum Error (% ) | Code (Hex) |
|------------|---------------|------------------------|---------------------|------------|
| ±5V | ±5V | ±0.03 | ±0.05 | 08 |
| ±10V | ±10V | ±0.03 | ±0.05 | 09 |
| ±20mA | ±20mA | ±0.05 | ±0.08 | 0A |
| 0~20mA | 0~20mA | ±0.05 | ±0.08 | 0B |
| 4~20mA | 4~20mA | ±0.05 | ±0.08 | 0C |
| 0~5V | 0~5V | ±0.03 | ±0.05 | 0D |
| 0~10V | 0~10V | ±0.03 | ±0.05 | 0E |

# Chapter 2 Components Layout Diagram and a Brief Description

## 2.1 The Main Component Layout Diagram
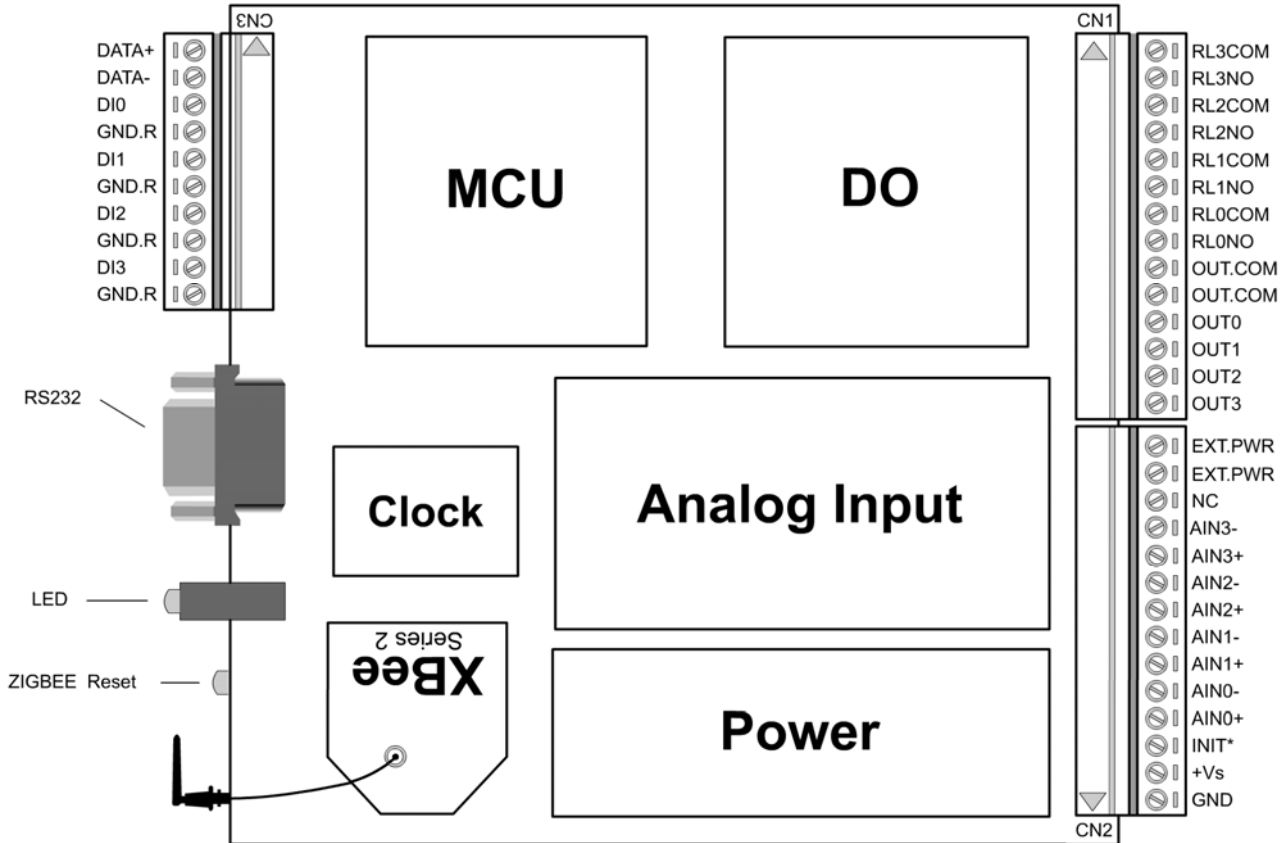


## 2.2 The Function Description for the Main Component

### 2.2.1 Wiring Terminal

GND: power negative

+Vs: power positive

INIT: reset button, short this pin and GND before power on, then reset the module to the default value: baud rate 9600bps, address 1.

AN0+~AN3-: 4 channel analog inputs

EXT.PWR: external power supply positive when open collector output

OUT.COM: external power supply negative when open collector output

OUT0~OUT3: external power supply negative when open collector output

RL0NO~RL3NO: 4 relay outputs (positive)

RL0COM~RL3COM: RL0COM~RL3COM: 4 relay outputs (negative)

DATA+, DATA-: 485 Bus, we can not use it and Zigbee networks at the same time

DI0~DI3: 4 digital inputs

GND.R: digital ground

### 2.2.3 Status Indicator

Yellow Light: network indicator, when ZIGBEE1085 module to join the network, this light is flashing.
Red Light: communication indicator, when ZIGBEE1085 communicate with the data center, this light is flashing.

### 2.2.4 Network Reset Button

It can reset the Zigbee network and re-search the network.

### 2.2.5 RS232 Interface

Use this serial port to configure XBEE module.
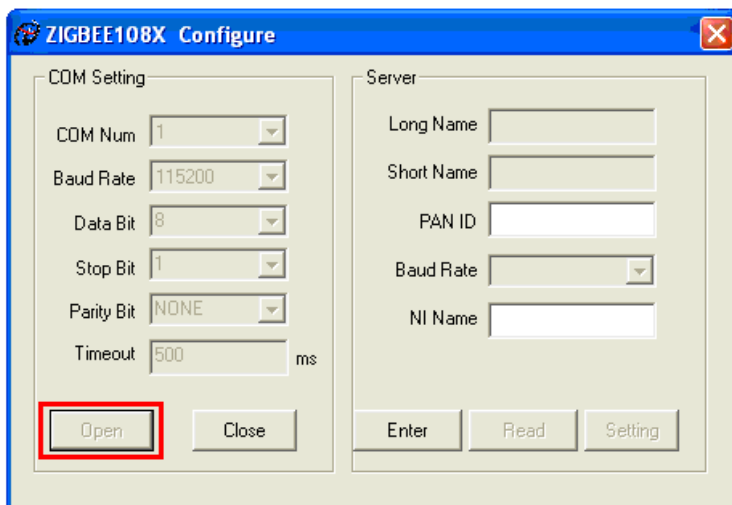
# *Chapter3 Operation Interface*

## 3.1 Configure the server

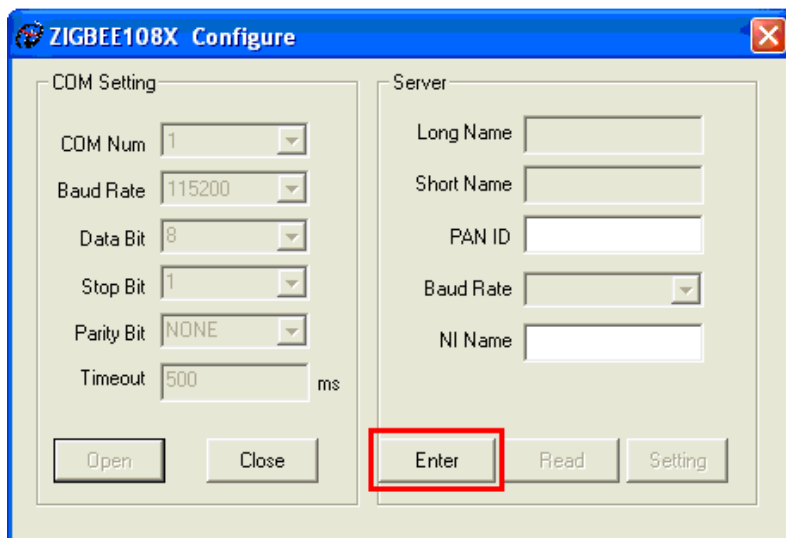1. Connect the server to the PC.

Open the "Configure program": according to the path "Start--Program—ART Data Acquisition Measurement Suite—Zigbee10XX Distributed Data Acquisition Module—Configure program" to configure the server.

Note: the server's baud rate is 115200, and it can't be modified by users.
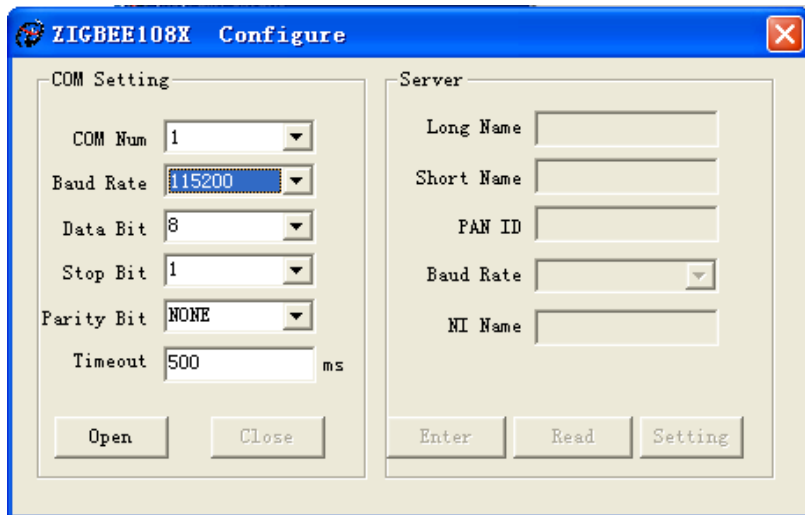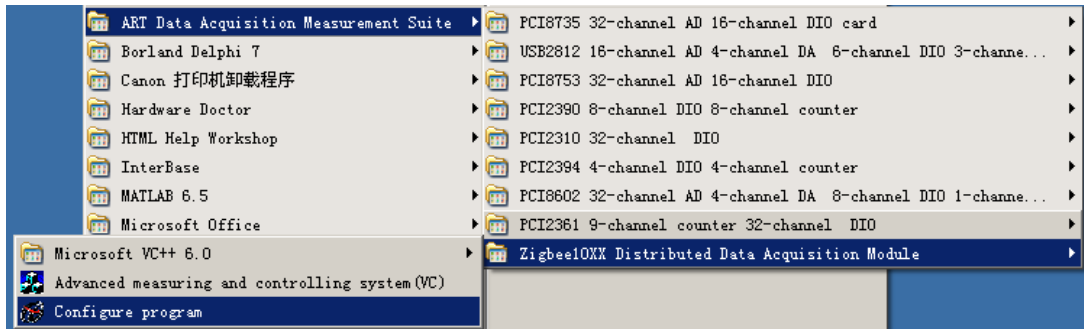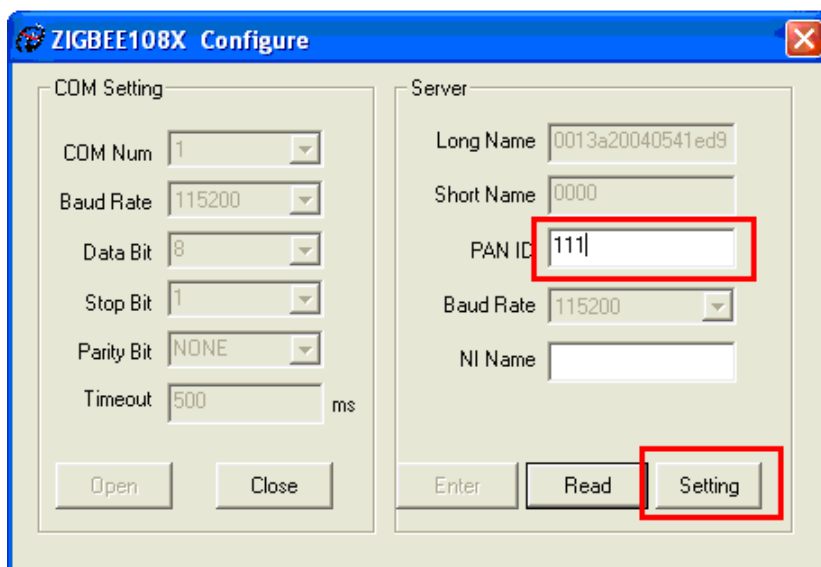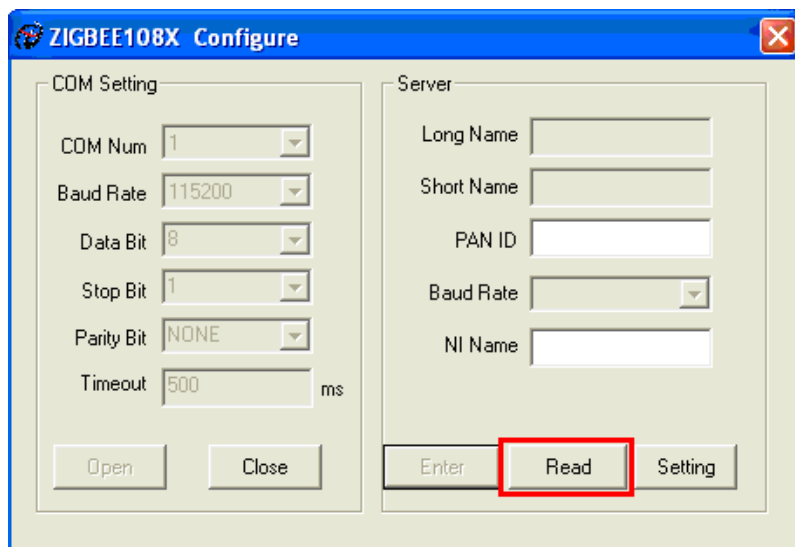


2. Click "Open", and then "Enter", the figures are as followed.

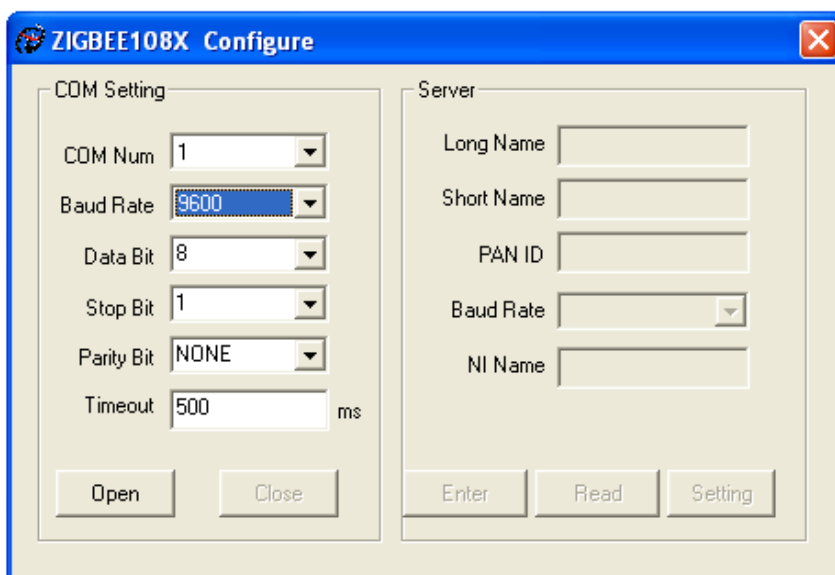4. Click "Read", and then set the PAN ID, at last, click "Setting.". PAN ID's range is 1-3FFF.
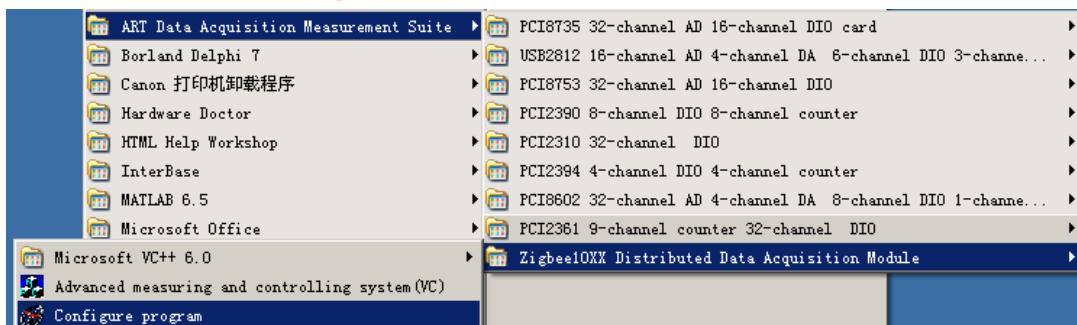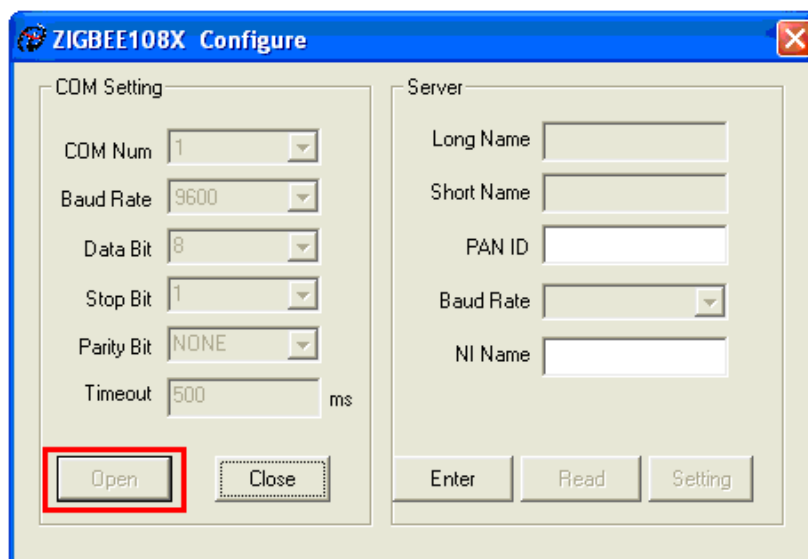
# 3.2 Configure Zigbee1085
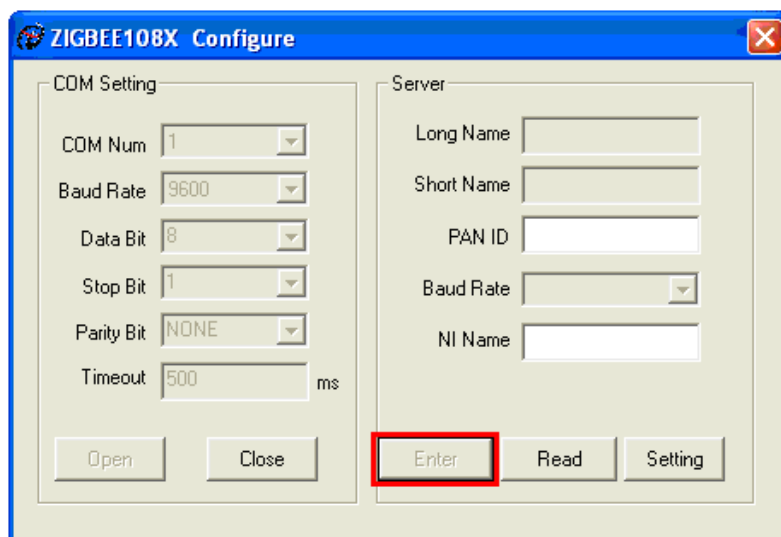
1. Connect Zigbee1085 to the PC.

   Open the "Configure program": according to the path "Start--Program—ART Data Acquisition Measurement Suite—Zigbee10XX Distributed Data Acquisition Module—Configure program" to configure the server.

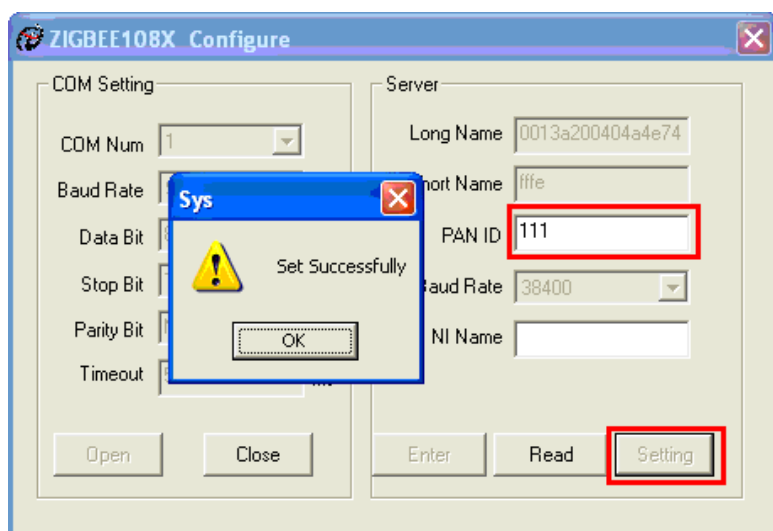   Note: the module's serial port baud rate is 9600, and it can't be modified by users.
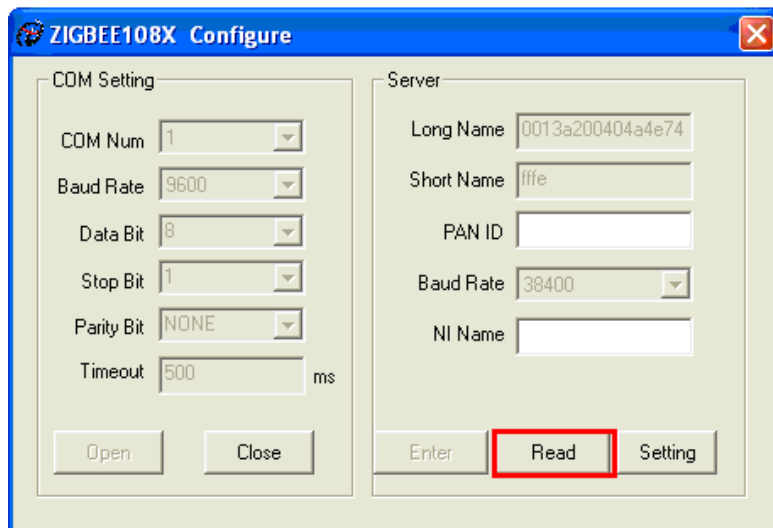




2. Click "Open", and then "Enter", the figures are as followed.

4. Click "Read", and then set the PAN ID, at last, click "Setting."
   Note: Zigbee1085's "PAN ID" must be the same as the server's. Its range is also 1-3FFF.

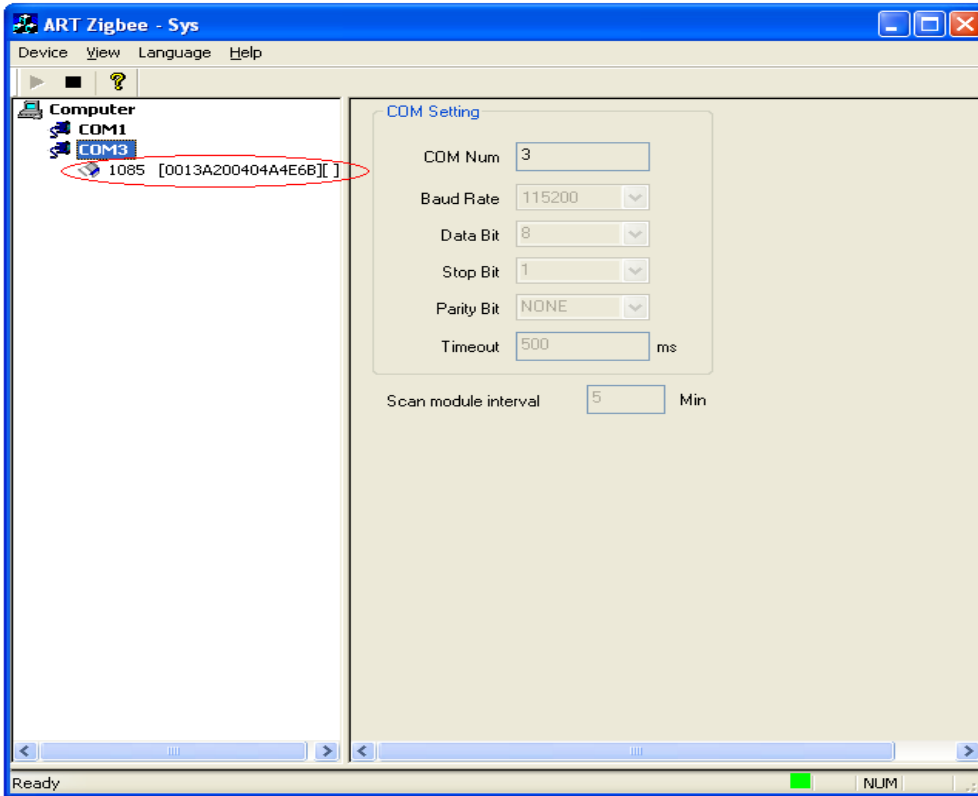# 3.3 Application Method of Zigbee1085

1. After configure the server and Zigbee1085, re-power them.

2. Open the "Advanced measuring and controlling system", the path is "Start--Program—ART Data Acquisition Measurement Suite—Zigbee10XX Distributed Data Acquisition Module—Advanced measuring and controlling system". The interface is as followed.
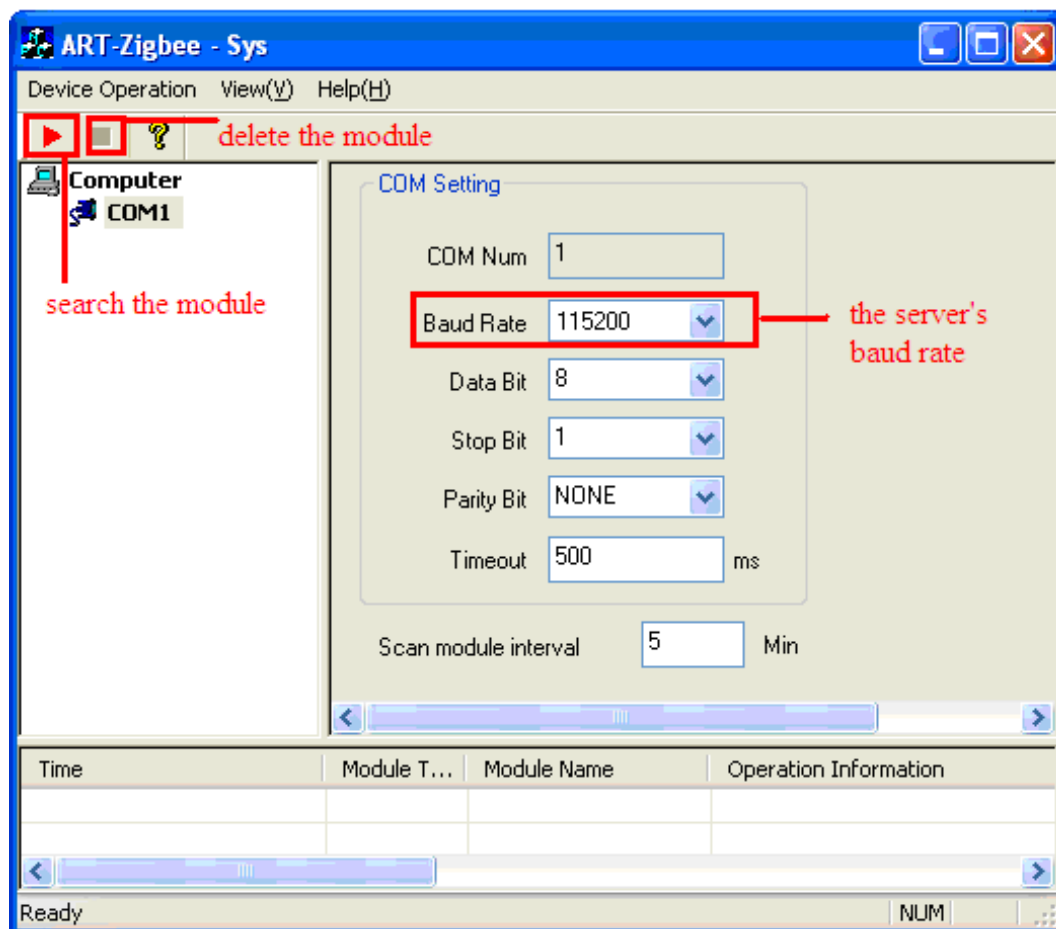
3. Search the module.



Click '1085 [0013A200404A4E6B]'
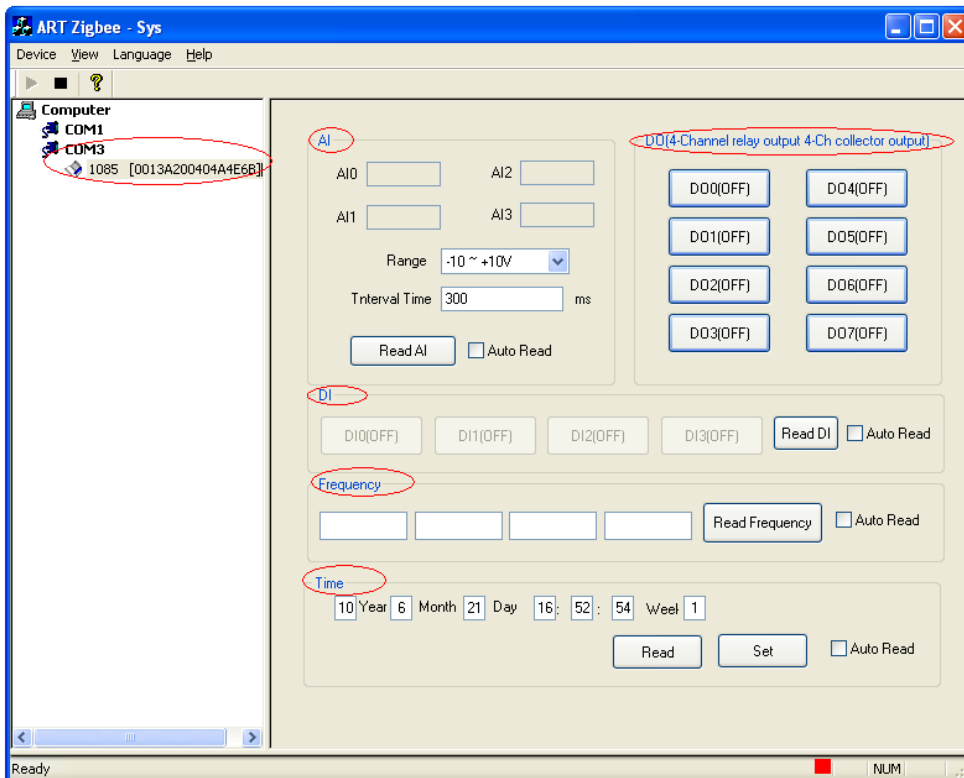
# *Chapter4 Notes and Warranty Policy*

## 4.1 Notes

In our products' packing, user can find a user manual, a Zigbee1085 module and a quality guarantee card. Users must keep quality guarantee card carefully, if the products have some problems and need repairing, please send products together with quality guarantee card to ART, we will provide good after-sale service and solve the problem as quickly as we can.

When using Zigbee1085, in order to prevent the IC (chip) from electrostatic harm, please do not touch IC (chip) in the front panel of Zigbee1085 module.

## 4.2 Warranty Policy

Thank you for choosing ART. To understand your rights and enjoy all the after-sales services we offer, please read the following carefully.

1. Before using ART's products please read the user manual and follow the instructions exactly. When sending in damaged products for repair, please attach an RMA application form which can be downloaded from: www.art-control.com.

2. All ART products come with a limited two-year warranty:

➢ The warranty period starts on the day the product is shipped from ART's factory

➢ For products containing storage devices (hard drives, flash cards, etc.), please back up your data before sending them for repair. ART is not responsible for any loss of data.

➢ Please ensure the use of properly licensed software with our systems. ART does not condone the use of pirated software and will not service systems using such software. ART will not be held legally responsible for products shipped with unlicensed software installed by the user.

3. Our repair service is not covered by ART's guarantee in the following situations:

➢ Damage caused by not following instructions in the User's Manual.

➢ Damage caused by carelessness on the user's part during product transportation.

➢ Damage caused by unsuitable storage environments (i.e. high temperatures, high humidity, or volatile chemicals).

➢ Damage from improper repair by unauthorized ART technicians.

➢ Products with altered and/or damaged serial numbers are not entitled to our service.

4. Customers are responsible for shipping costs to transport damaged products to our company or sales office.

5. To ensure the speed and quality of product repair, please download an RMA application form from our company website.