Data Sheet

ZBCOM-300IE-CEL

ZBCOM-300IE-CEL industrial serial port to ZigBee device

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Product Data

Overview

ZBCOM-300IE-CEL is a serial interface-to-ZigBee gateway device developed by Guangzhou Zhiyuan Electronics Co., Ltd. for the wireless ZigBee of NXP company, supporting serial transparent transmission (point-to-point or point-to-multipoint). Application of ZBCOM-300IE-CEL can easily realize the wireless of serial device, go clutter-free from cabling, and save human & material resources and development time so as to get products to market more quickly and improve competitive power.

The product is used for data transmission between serial interface and ZigBee converting wired serial device to wireless serial device. It can be applied for point-to-point or point-to-multipoint wireless communication between serial devices.

Product Features

- Support bilateral transparent conversion between serial RS-232, RS-422 or RS-485 fully-isolated interface (select through dip switch) and ZigBee. The max. Baud rate of the serial interface is 460800bps.
- Support point-to-point or point-to-multipoint wireless communication.
- Support local and air configurations (such as communication parameters of ZigBee and serial interface).
- Support local firmware upgrade.
- Support barrier-free transmission with the distance more than 3000 feet. Transmission distance can be expanded by virtue of relay.
- Power source supports wide voltage (DC 9-24V) input and constant voltage (DC 5V) input selecting by internal jumper.
- Serial interface can be isolated type or non-isolated type (according to different product models).

Product Application

- Intelligent transportation system
- Intelligent streetlamp control
- Coal mine safety monitoring
- Remote medical monitoring system
- Supermarket terminal
- Industrial automation
- Remote data acquisition

Model	Temperature Range	Remark
ZBCOM-300IE-CEL	-25°C +75°C	Isolated interface

Revision History

Version	Date	Reason
V1.00	Dec. 21, 2009	Create document.

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1. Function Introduction

ZBCOM-300IE-CEL is an industrial product with operating temperature range in -25℃ - +75℃. It adopts ZigBee of NXP company agented by ZLG company with the frequency of 2400 - 2483.5MHz (16 RF channels) and characterized by low power consumption, high sensitivity and long transmission distance. The max. Baud rate of serial communication is 460800bps. The product supports transparent transmission of serial data and local and air configurations. It is very simple and convenient to operate.

Features of the product are as follows:

- Application of ZigBee module of NXP company;
- Internal 2KV surge protection;
- EMC realiable protection (ESD, EFT and SURGE maintain Level 3 protection.) for power source and serial interface;
- Available isolated type (Max. isolated voltage: 2.5KV) and non-isolated devices;
- Optional serial interfaces of RS-232, RS-422 and RS-485, range of Baud rate: 1200bps - 460800bps;
- Device type, available to be configured as terminal device or router device;
- RF output power: 20dBm;
- Configurable working parameters, including:
  - PanID, four hexadecimal digits;
  - Local network address, four hexadecimal digits;
  - Target network address, four hexadecimal digits;
  - Target physical address;
  - RF channel, 11 (2405MHz) – 26 (2480MHz) optional;
  - Transmission mode, unicast or broadcast.
- Configurable serial parameters:
  - Baud rate, 1200 - 460800 bps;
  - Data bit, 5, 6, 7 or 8;
  - Parity bit, non, odd parity check or even parity check;
  - Stop bit, 1 or 2 bits.
- Configurable wireless transmission parameters:
  - Transmission rate, 250Kbps;
  - Number of retries, number of retries on failure, 3 by default;
  - Retry interval, retry invertal on failure, unit: 100 ms, 1000 ms by default.
- Input voltage: DC 9 - 24V or DC 5V (It is required to change internal jumper.);
- Max. working current: 120mA (input voltage: 5V);
- Working temperature: -25℃ - +75℃, storage temperature: -40℃ - +85℃.

2. Hardware Structure

Product appearance is shown as Figure 2.1, Figure 2.2 and Figure 2.3. An introduction to the device structure is as follows.

DEF switch MODE switch Serial interface

Figure 2.1 Side view 1 of product appearance

Figure 2.2 Top view of product appearance

Antenna switching socket power socket

Figure 2.3 Top view 2 of product appearance

3. Electrical Parameters

Power source

Mark	Category	Specification				Remark
		Min.	Typical	Max.	Unit	
V_{IN}	input voltage	4.75	5.0	5.25	V	constant voltage
	input voltage	6.5	9	24	V	wide voltage
I_{P5V5}	working current	-	90	120	mA	V_{IN} = 5V

4. Mechanical Dimensions

Please refer to appearance mechanical dimensions (metric unit) provided in Figure 12.1 during the installation of ZBCOM-300IE-CEL device, which specifies the length, width, height, and partial mechanical structure of the product.

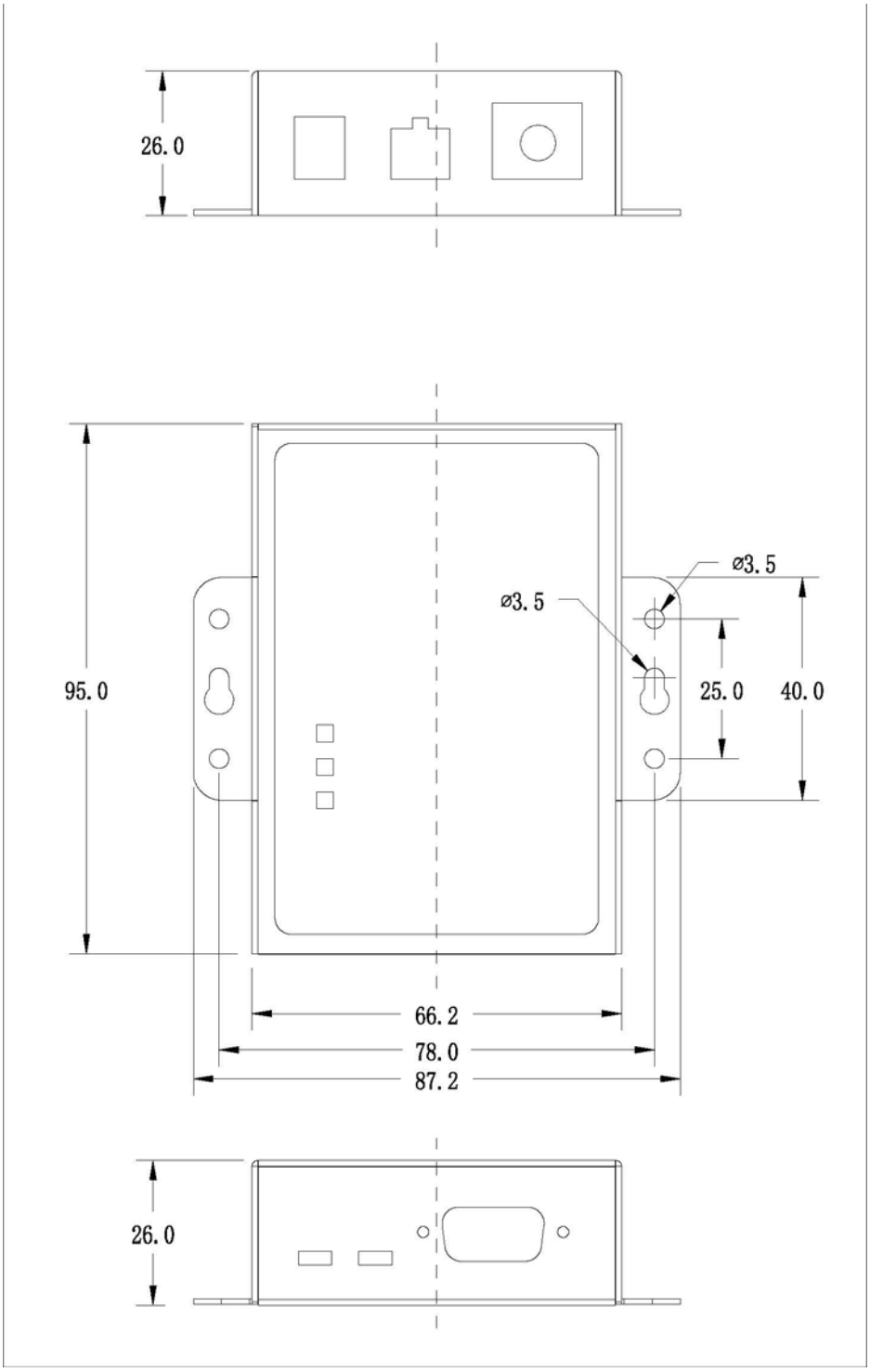

Figure 8.1 Three views and mechanical dimensions

5. Disclaimer

Guangzhou Zhiyuan Electronics Co., Ltd. reserves the right to modify documents related to the device at any time without prior announcement.

FCC regulatory conformance：

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference.

(2) This device must accept any interference received, including interference that may cause undesired operation.

NOTE: This equipment has been tested and found to comply with the limits for a **Class B** digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
-Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
-Consult the dealer or an experienced radio/TV technician for help

NOTE: The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. Such modifications could void the user's authority to operate the equipment.

IC regulatory conformance

This device complies with CAN ICES-003 (B)/NMB-003(B).

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:

(1) This device may not cause interference.

(2) This device must accept any interference, including interference that may cause undesired operation of the device.

Cet appareil est conforme à la norme CAN ICES-003 (B)/NMB-003 (B).

Cet appareil contient des émetteurs / récepteurs exempt (s) de licence qui sont conformes aux RSS exemptes de licence d'Innovation, Sciences et Développement économique Canada. Son fonctionnement est soumis aux deux conditions suivantes:

(1) Cet appareil ne doit pas provoquer d'interférences.

(2) Cet appareil doit accepter toute interférence, y compris les interférences susceptibles de provoquer un fonctionnement indésirable de l'appareil.

RF Exposure

This equipment complies with IC radiation exposure limits set forth for an uncontrolled environment.
Cet équipement est conforme aux limites d'exposition aux radiations de la IC définies pour un environnement non contrôlé.