

EZBee™

2.4GHz Zigbee Serial Module

User Manual: Evaluation Kit


Manual Version 1.1

EZ way to go wireless with Zig**Bee**



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Revision History:

Version	Document Number	Changed Contents	Date
1.1	EZB_EK_manual_1201	Commands Addition by Firmware Updates	12/01/2005
Pre	EZB_EK_manual_0927	Preliminary Version	09/26/2005

Module Version History

Part no.	Description	Version	Release Date
EZB-001	2.4GHz Zigbee Module Short Range	VER.C.0.9.1 VER.R.0.9.0 VER.E.0.9.0	Sept 26, 2005
EZB-001EK	EZB-001 Evaluation Kit	VER.C.0.9.1 VER.R.0.9.0	Sept 26, 2005



<EZB-001EK: EZB-001 Evaluation Kit>

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1. About EZBee™ (Zigbee Module)

EZBee™ Evaluation Kit (part no.: EZB-001EK) is the evaluation kit of EZBee™, which is a compact Zigbee single-board module compliant to the 2.45GHz Zigbee specification v1.0 of IEEE 802.15.4. With EZBee™, users may enable Zigbee wireless network easily without a professional knowledge on Zigbee. EZBee™ is designed to be used as a serial RF module to a Host system.

Using AT commands provided, users may communicate with EZBee™. Full AT commands available can be found in the [User manual of EZBee™](#) (doc# EZB_manual_1201)

EZBee modem provides two ways of transmitting messages between modules, **Connectionless mode and Connection mode.**

Connectionless Mode: In this mode, users may send data (point-to-point or broadcast) to the other nodes in the connected Zigbee network by AT commands.

Connection Mode: In this mode, users may send data WITHOUT AT commands to other nodes in connected network.

Each modules has extended address, short address and unique ID. The unique ID is used in both connectionless & connection mode.

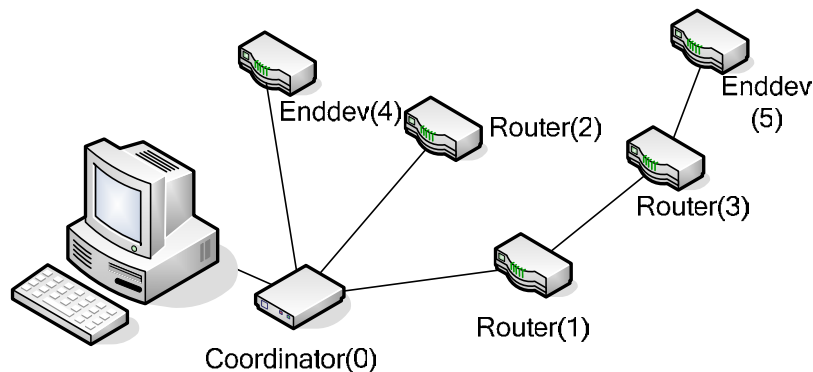


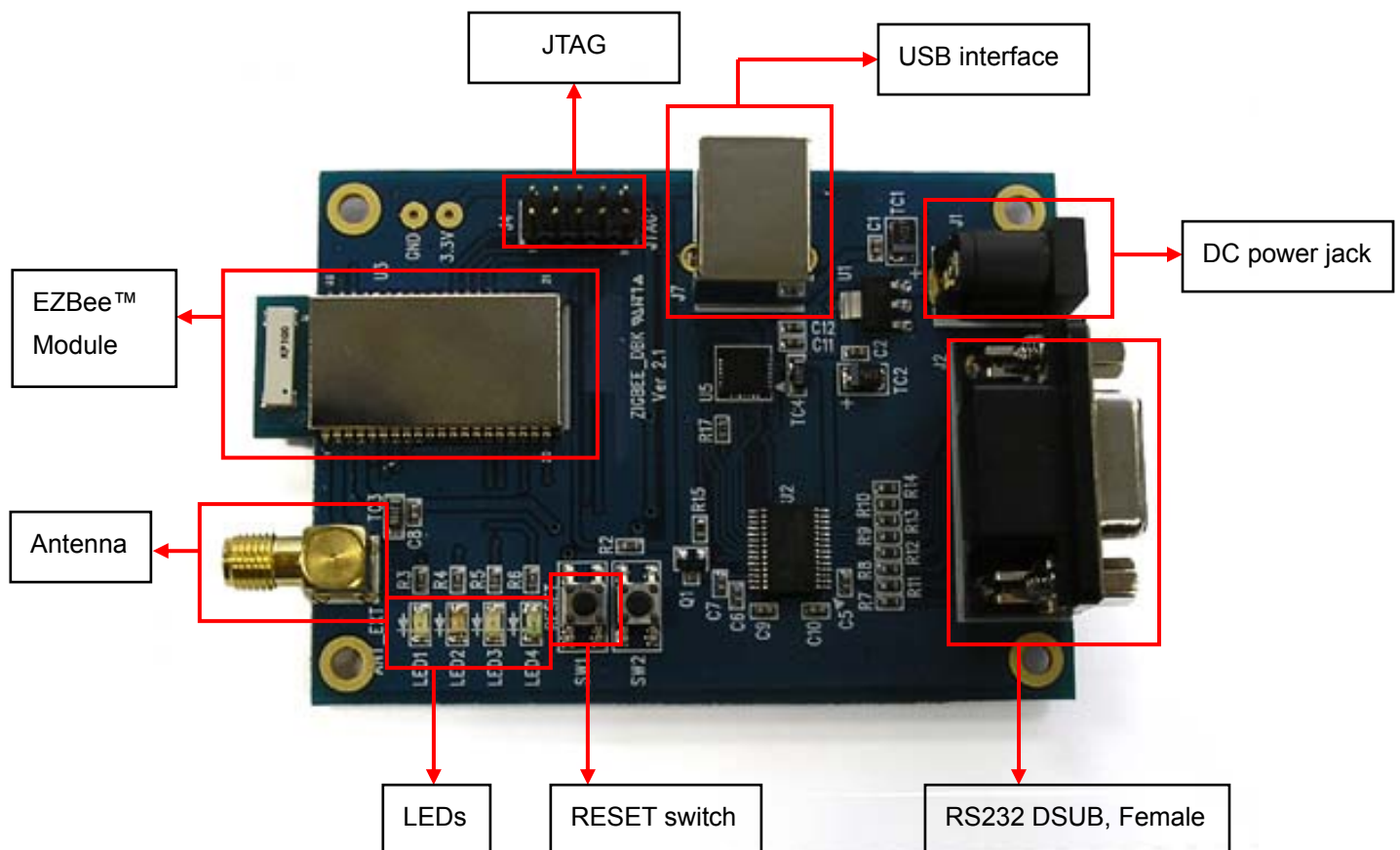
Figure 1.2 ZigBee Network With EZBee™

EZB-001EK includes:

Item	Number of articles
Evaluation Board (EZB-001EB)	2ea (1ea of Coordinator / 1ea of Router)
USB cable (for power supply / configuration / test)	2ea

2. Evaluation Board

EZB001-EK has an integrated ceramic antenna, and shows typical range of 30m (w/o data loss).



1) **DC Power Jack:** Users may supply 5V DC power to this jack.



<DC plug polarity>

- 2) **USB interface:** Using this interface, users may supply power via USB cable, configure EZBee™ after installation of USB/Serial Driver provided via Virtual COM port.
- 3) **JTAG interface:** With JTAG interface, users may upgrade firmware of EZBee™.
- 4) **RS232 interface:** Users may communicate with EZBee™ via RS232 interface using 1:1 RS232 cable.

- 5) **Antenna Connector:** SMA right-threaded connector.
- 6) **LED operation:**

LED1	N/A
LED2	Blinks as <u>Orange</u> color when power supplied
LED3	<u>Red LED ON</u> when successfully joined to Zigbee Network.
	LED OFF when disjoined from Zigbee Network.
LED4	N/A

- 7) **RESET Switch:** SW1 button. Users may RESET EZBee™ by pressing this button.

PIN assignment of EZBee™

Pin no.	Description	Pin no.	Description
1	GND	40	INT5
2	RF_SIGNAL	39	INT4
3	GND	38	AIN1
4	VCC	37	AIN0
5	RXD	36	TXD485
6	TXD	35	RXD485
7	RTS	34	AREF
8	CTS	33	ADC0
9	DIO8 (A8)	32	ADC1
10	DIO9 (A9)	31	ADC2
11	DIO10 (A10)	30	ADC3
12	DIO11 (A11)	29	TCK
13	DIO12 (A12)	28	TMS
14	RESET	27	TDO
15	OC2/OC1C	26	TDI
16	OC0	25	GND
17	RI	24	DIO0
18	DCD	23	DIO1

19	DTR	22	DIO2
20	DSR	21	DIO3

***NOTE: ONLY Blue colored Pins are available in Evaluation Board.**

More information on EZBee™ can be found at doc# EZB_manual_0927.

3. How To Start

Please follow the steps below to easily start to use Evaluation kit for your test.

- 1) Please install USB/Serial Driver to your PC. Drivers for both Windows and Linux can be found on the CD or website at www.hantz.com
- 2) Please Evaluation Board to your PC using USB cable provided.
- 3) There are two Evaluation boards. One is programmed to work as a Coordinator, which was marked with RED dot on the EZBee™ module on the board. The other one is programmed to work as a Router, which was marked with YELLOW dot.
- 4) When you connector Coordinator Board (Red Dot) using USB cable, the Coordinator will get the power from PC via USB interface and LED2 will start to blink in Orange color.
- 5) Please open HyperTerminal in your PC, and access to EZBee™ via Virtual COM port, which was created by the driver at first stage.

Default serial setting of EZBee™:

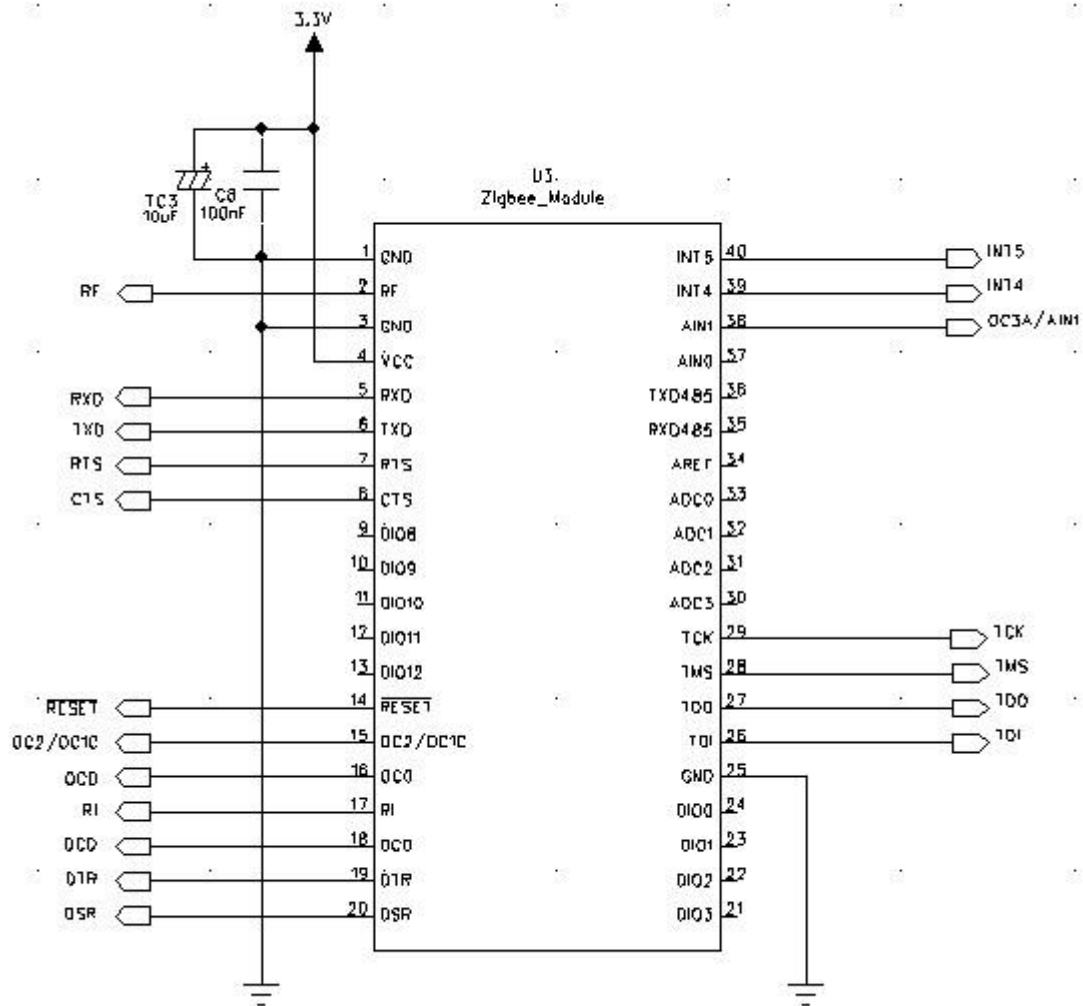
38,400bps / 8 Data bit / 1 Stop bit / Non Parity / No hardware flow control

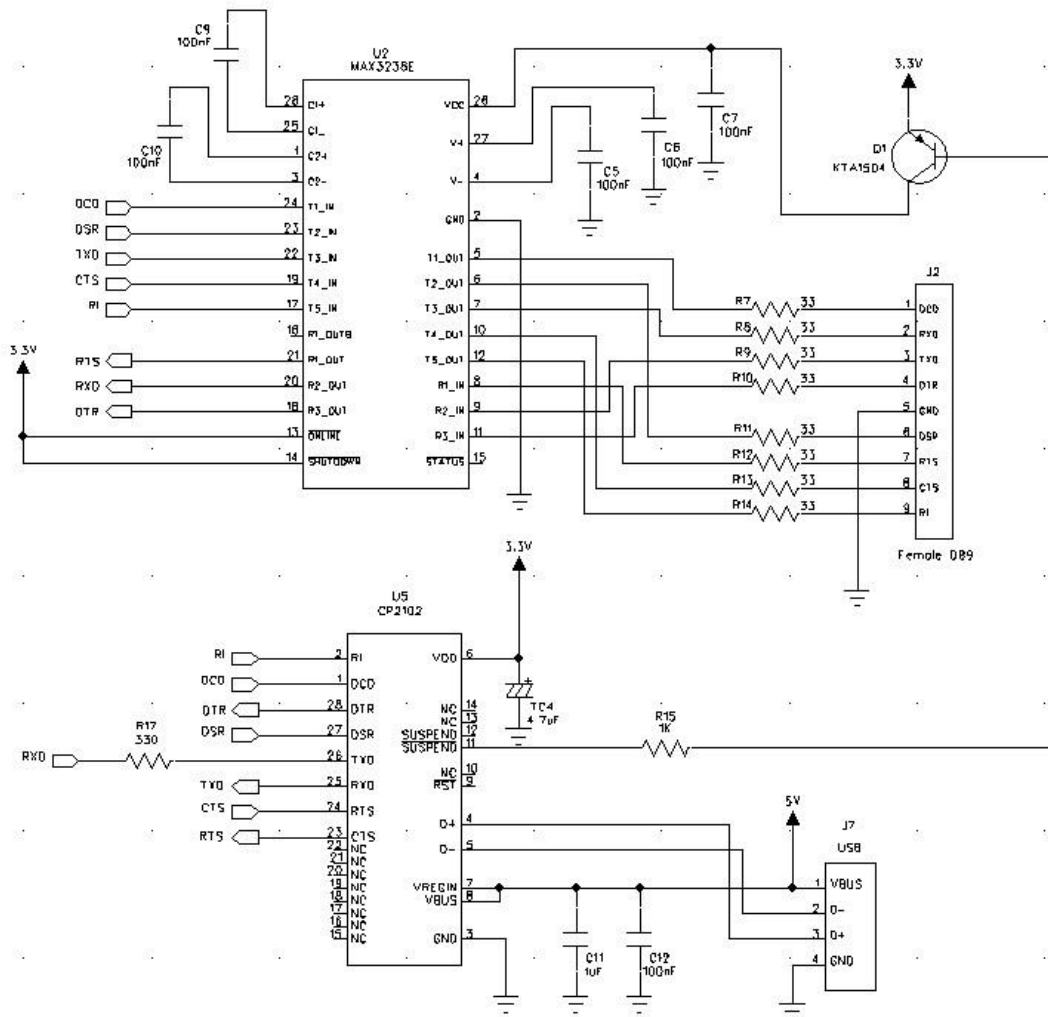
Please make sure that you configured your HyperTerminal as above, to appropriately access the EZBee™.

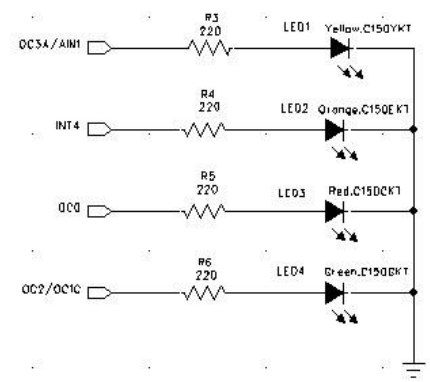
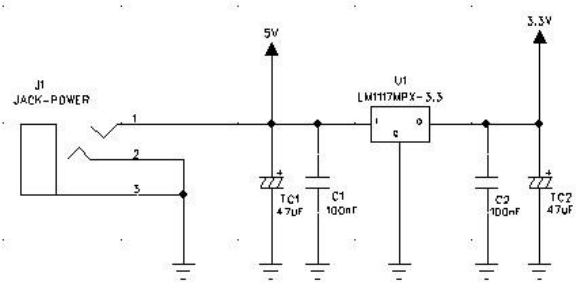
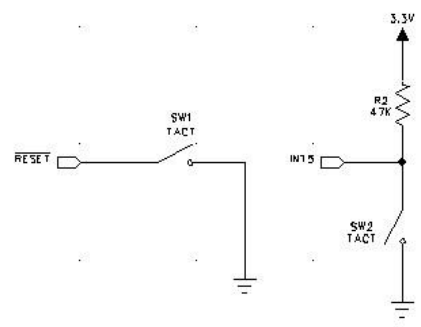
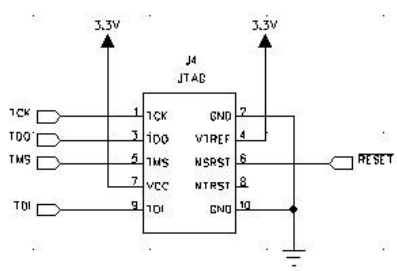
- 6) When you type "AT", you will get OK message from EZBee™.
- 7) By ATD command, Coordinator Board will start Zigbee Network, and LED3 will light on in RED color.
- 8) Then, please turn on Router Board and confirm the Router joins Zigbee network. You will see the joining status in your HyperTerminal of Coordinator. For more test, please refer to the user manual of EZBee™ Zigbee module- AT commands.

4. Circuit Diagram

Below shows the circuit diagram of Evaluation board.







5. Legal Notice & Contact

About this Document

This document provides introductory instructions on how to set up and manage EZBee™-DK001 within your networking environment. Should you require more information, please refer to website at www.hantz.com

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