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› ROXIFETA JDY-08 Bluetooth 4.0 UART Transceiver Module User Manual

## ROXIFETA JDY-08

# ROXIFETA JDY-08 Bluetooth 4.0 UART Transceiver Module User Manual

Model: JDY-08

## 1. INTRODUCTION

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The ROXIFETA JDY-08 is a low-power Bluetooth 4.0 (BLE) UART transceiver module designed for wireless data transmission. It integrates the CC2541 chip and supports Airsync and iBeacon functionalities, making it suitable for various embedded applications requiring reliable and efficient wireless communication.

This manual provides essential information for the proper setup, operation, and maintenance of your JDY-08 module.

## 2. PRODUCT OVERVIEW

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The JDY-08 module facilitates serial data communication over Bluetooth Low Energy. Its compact design and low power consumption make it ideal for battery-powered devices and IoT projects.



Figure 1: ROXIFETA JDY-08 Bluetooth 4.0 UART Transceiver Module. This image shows the compact blue PCB module with its components and pin headers.

### Key Features:

- Bluetooth 4.0 BLE standard
- UART (Universal Asynchronous Receiver/Transmitter) interface
- Based on CC2541 chip
- Low power consumption
- Support for Airsync and iBeacon protocols
- Small form factor with pin headers for easy integration

### 3. PINOUT AND CONNECTIONS

Understanding the pinout is crucial for correct integration of the JDY-08 module into your project. The module typically features 6 pins.

## Pin Description:

Pin	Name	Description
1	VCC	Power supply input (typically 3.3V)
2	GND	Ground
3	TXD	UART Transmit Data (connect to RXD of microcontroller)
4	RXD	UART Receive Data (connect to TXD of microcontroller)
5	STATE	Connection Status Indicator (High when connected)
6	EN	Enable Pin (High to enable, Low to disable/sleep)

**Note:** Ensure your microcontroller's UART voltage levels are compatible with the JDY-08 (typically 3.3V). Use a logic level converter if necessary to prevent damage.

## 4. SETUP AND CONFIGURATION

### 4.1 Hardware Connection

1. Connect the VCC pin of the JDY-08 module to a stable 3.3V power supply.
2. Connect the GND pin of the JDY-08 module to the ground of your system.
3. Connect the TXD pin of the JDY-08 to the RXD pin of your microcontroller.
4. Connect the RXD pin of the JDY-08 to the TXD pin of your microcontroller.
5. (Optional) Connect the STATE pin to an input pin on your microcontroller to monitor connection status.
6. (Optional) Connect the EN pin to an output pin on your microcontroller if you wish to control the module's power state.

### 4.2 Software Configuration (AT Commands)

The JDY-08 module is configured using AT commands sent via the UART interface. A serial terminal program (e.g., PuTTY, Arduino Serial Monitor) can be used to send these commands.

- **Default Baud Rate:** Typically 9600 bps (8 data bits, no parity, 1 stop bit).
- **Command Format:** AT commands usually start with "AT" and end with a newline character (CR+LF or just LF, depending on firmware).

### Common AT Commands:

Command	Description	Example Response
AT	Test command	OK
AT+NAME[name]	Set or query device name	OK+Set:JDY-08
AT+BAUD[value]	Set or query baud rate (e.g., 4 for 9600)	OK+Set:4
AT+PIN[value]	Set or query pairing PIN code	OK+Set:123456
AT+VERSION	Query firmware version	JDY-08-V1.0
AT+RESET	Software reset module	OK+RESET

Refer to the specific JDY-08 datasheet or firmware documentation for a complete list of AT commands and their parameters.

## 5. OPERATING INSTRUCTIONS

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### 5.1 Data Transmission

Once the JDY-08 module is powered and configured, it operates as a transparent serial port over Bluetooth Low Energy. Any data sent to the module's RXD pin will be transmitted wirelessly to a connected Bluetooth device, and any data received wirelessly will be output through the module's TXD pin.

1. **Power On:** Apply 3.3V to VCC and GND. The module will enter advertising mode, waiting for a connection.
2. **Pairing/Connection:** Use a Bluetooth-enabled device (e.g., smartphone, computer, another BLE module) to scan for and connect to the JDY-08 module (default name often "JDY-08" or "BLE\_UART"). If a PIN is set, you will need to enter it.
3. **Data Exchange:** Once connected, open a serial terminal application on your connected device. Data typed into the terminal will be sent to the JDY-08's RXD, and data sent from your microcontroller's TXD will appear in the terminal.

### 5.2 iBeacon Functionality

The JDY-08 supports iBeacon functionality, allowing it to act as a beacon for proximity sensing applications. This typically involves configuring the module with specific UUID, Major, and Minor values using AT commands.

- **UUID:** A unique identifier for the beacon.
- **Major:** A value to distinguish a group of beacons.
- **Minor:** A value to distinguish individual beacons within a group.

Consult the JDY-08 specific documentation for AT commands related to iBeacon configuration (e.g., AT+IBEACON, AT+UUID, AT+MAJOR, AT+MINOR).

## 6. MAINTENANCE

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The JDY-08 module is a robust electronic component designed for long-term operation with minimal maintenance. However, adhering to the following guidelines can help ensure its longevity and reliable performance:

- **Environmental Conditions:** Operate the module within its specified temperature and humidity ranges. Avoid extreme temperatures, direct sunlight, and high moisture environments.
- **Power Supply:** Ensure a stable and clean 3.3V power supply. Voltage fluctuations or overvoltage can damage the module.
- **Physical Handling:** Handle the module with care. Avoid bending the PCB or applying excessive force to the pins. Electrostatic discharge (ESD) can damage sensitive electronic components, so use appropriate ESD precautions when handling.
- **Cleaning:** If necessary, gently clean the module with a soft, dry, anti-static brush or cloth. Do not use liquids or abrasive cleaners.
- **Firmware Updates:** Periodically check for official firmware updates from the manufacturer. Firmware updates can improve performance, add features, or fix bugs. Follow the manufacturer's instructions carefully for any update procedures.



Figure 2: An assortment of electronic components, emphasizing the delicate nature of such devices and the need for careful handling.

## 7. TROUBLESHOOTING

If you encounter issues with your JDY-08 module, refer to the following troubleshooting steps:

Problem	Possible Cause	Solution
Module not powering on (no LED activity)	Incorrect power supply voltage or polarity; faulty wiring.	Verify VCC is 3.3V and GND is correctly connected. Check all power connections.
Cannot find module when scanning for Bluetooth devices	Module not powered; module in sleep mode; incorrect advertising settings; interference.	Ensure module is powered and EN pin is high. Check AT commands for advertising settings. Try scanning in a different environment.
Cannot connect to the module	Incorrect PIN; module already connected to another device; range issues.	Verify the correct PIN. Ensure no other device is connected. Reduce distance between devices.
Data transmission errors or no data received	Incorrect UART baud rate; TXD/RXD swapped; logic level incompatibility; connection instability.	Verify baud rates match on both ends. Double-check TXD to RXD and RXD to TXD connections. Use logic level converters if needed. Check Bluetooth connection stability.
AT commands not responding	Incorrect baud rate; missing newline characters; module not in command mode.	Ensure serial terminal settings match module's baud rate. Try sending AT commands with both CR+LF and LF. Some modules require a specific pin state to enter command mode (check datasheet).

If the problem persists after trying these solutions, consult the official JDY-08 documentation or seek technical support.

## 8. SPECIFICATIONS

The following table outlines the technical specifications for the ROXIFETA JDY-08 Bluetooth 4.0 UART Transceiver Module:

Feature	Specification
Model	JDY-08
Bluetooth Standard	Bluetooth 4.0 BLE
Chipset	CC2541
Operating Voltage	1.8V - 3.6V (typically 3.3V recommended)
Communication Interface	UART (Serial)
Default Baud Rate	9600 bps
Transmit Power	-23dbm, -6dbm, 0dbm, 6dbm (configurable)
Operating Current	Advertising: 800uA, Connected: 500uA (approx.)
Sleep Current	50uA (approx.)
Range	Up to 30 meters (line of sight, depends on environment)
Dimensions	(Refer to specific module variant for exact dimensions)

## 9. WARRANTY AND SUPPORT

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### 9.1 Warranty Information

ROXIFETA products are manufactured to high-quality standards. This product comes with a standard manufacturer's warranty against defects in materials and workmanship. The warranty period typically covers 30 days from the date of purchase for refund/replacement, as per the seller's policy. Please retain your proof of purchase for warranty claims. The warranty does not cover damage caused by improper installation, misuse, unauthorized modification, or operation outside the specified environmental and electrical parameters.

### 9.2 Customer Support

For technical assistance, troubleshooting, or warranty inquiries, please contact your retailer or the ROXIFETA customer support team. When contacting support, please provide your product model (JDY-08) and a detailed description of the issue.

You can often find additional resources, FAQs, and updated documentation on the manufacturer's or seller's website. For general inquiries, refer to the seller's contact information provided at the point of purchase.

