WINGONEER LYSB01LRVQIFQ-CMPTRACCS

WINGONEER USB 2.0 to TTL UART 6PIN CP2102 Module Serial Converter User Manual

Introduction

This manual provides detailed instructions for the WINGONEER USB 2.0 to TTL UART 6PIN CP2102 Module Serial Converter. This module is designed to facilitate communication between a computer's USB port and devices requiring TTL (Transistor-Transistor Logic) serial communication, such as microcontrollers (MCUs) and other embedded systems. It features a built-in CP2102 chip for reliable USB to RS232 transmission and offers dual 3.3V and 5V power outputs.

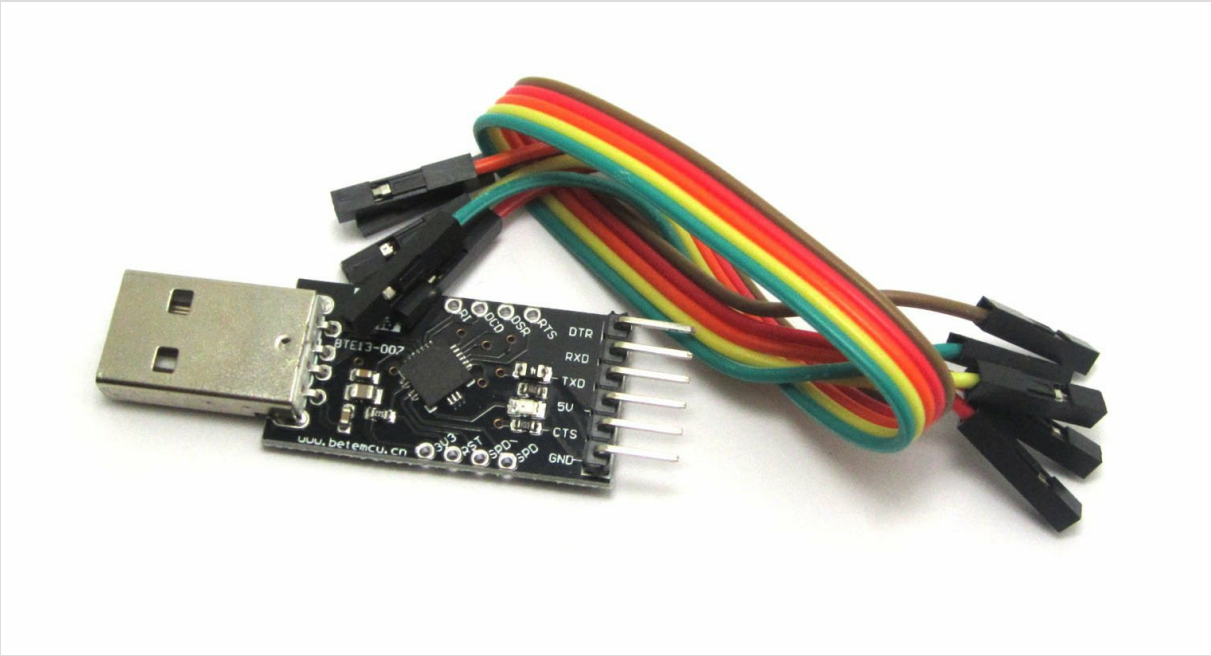
Safety Information

- Ensure proper voltage levels are used. Connecting incorrect voltages can damage the module or the connected device.
- Avoid short circuits between pins.
- Handle the module with care to prevent electrostatic discharge (ESD) damage.
- Do not expose the module to moisture or extreme temperatures.
- Always disconnect power before making or changing connections.

Package Contents

Verify that all items are present in your package:

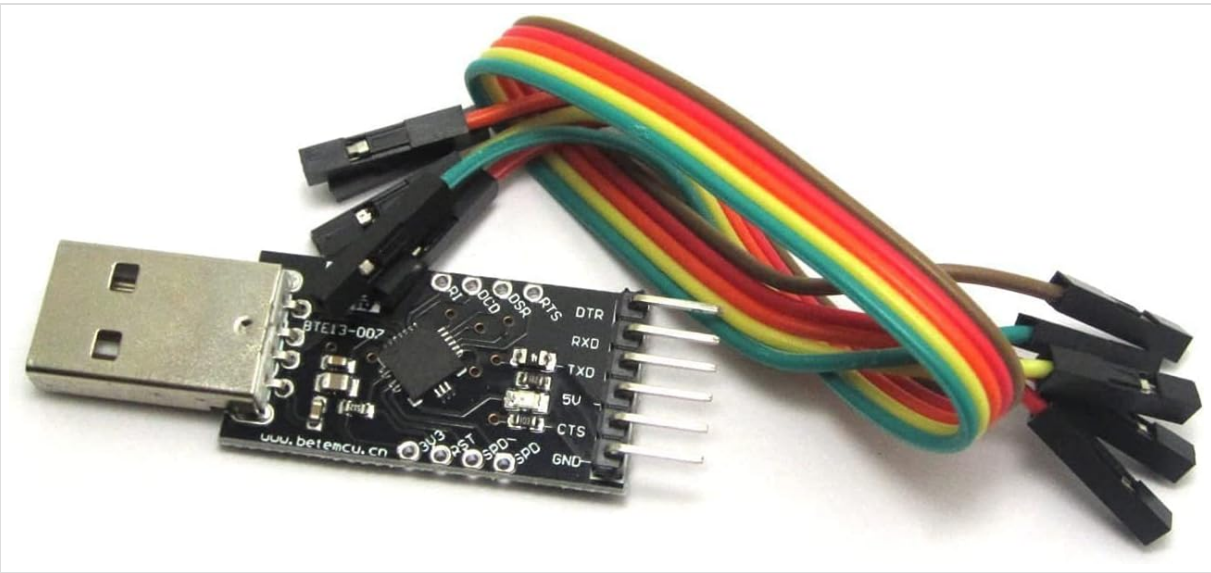
- 1x WINGONEER USB 2.0 to TTL UART 6PIN CP2102 Module
- 5x Jumper Cables



This image shows the WINGONEER CP2102 USB to TTL UART module alongside the included set of multi-colored jumper cables. The module features a standard USB-A connector on one end and a 6-pin header on the other, ready for connection.

Product Overview

The WINGONEER CP2102 module provides a convenient way to establish serial communication. It integrates a USB-A connector for direct connection to a computer and a 6-pin header for interfacing with target devices. The module supports both 3.3V and 5V power outputs, making it versatile for various microcontroller projects.



This image displays the WINGONEER CP2102 USB to TTL UART module, highlighting its USB connector and the 6-pin header with clearly labeled pins for 3.3V, 5V, TXD, RXD, GND, and other control signals. The module's compact design is visible.

Pinout Description

Pin	Description
3V3	3.3V Power Output

Pin	Description
5V	5V Power Output
TXD	Transmit Data (output from module, input to target device)
RXD	Receive Data (input to module, output from target device)
GND	Ground
DTR/RTS/CTS	Data Terminal Ready / Request To Send / Clear To Send (Flow Control, may vary by module version)

Setup

1. Driver Installation

The CP2102 chip requires specific drivers to function correctly on your computer. These drivers are typically provided by Silicon Labs (SiLabs). Follow these steps:

1. **Download Drivers:** Visit the official Silicon Labs website (silabs.com/developers/usb-to-uart-bridge-vcp-drivers) to download the latest CP210x USB to UART Bridge VCP Drivers for your operating system (Windows, macOS, Linux).
2. **Install Drivers:** Run the downloaded installer and follow the on-screen instructions. Administrator privileges may be required.
3. **Verify Installation:** After installation, connect the CP2102 module to a USB port on your computer. Open your device manager (Windows) or check system information (macOS/Linux) to confirm that the device is recognized as a 'Silicon Labs CP210x USB to UART Bridge' and a new COM port (Windows) or serial device (macOS/Linux) is assigned.

2. Hardware Connection

Connect the CP2102 module to your target device (e.g., microcontroller, ESP8266, Bluetooth module) using the provided jumper cables. Ensure correct pin mapping:

- **GND:** Connect the GND pin of the CP2102 module to the GND pin of your target device. This is essential for common ground reference.
- **TXD:** Connect the TXD pin of the CP2102 module to the RXD (Receive Data) pin of your target device.
- **RXD:** Connect the RXD pin of the CP2102 module to the TXD (Transmit Data) pin of your target device.
- **VCC (Power):** Connect either the 3V3 or 5V pin of the CP2102 module to the VCC/power input of your target device, depending on its operating voltage. **Do not connect both 3V3 and 5V simultaneously.**
- **Flow Control (Optional):** If your application requires hardware flow control, connect the DTR, RTS, and CTS pins as needed. For basic serial communication, these are often not required.

This image illustrates the WINGONEER CP2102 module connected to a microcontroller or development board using multi-colored jumper wires. It demonstrates a typical setup for serial communication, showing the module's integration into a larger electronic project.

Important Note on Voltage Levels: The RX/TX pins on the CP2102 module operate at 3.3V logic levels. If your target device (e.g., some Arduino models) uses 5V logic for its TX pin, you should use a logic level shifter between the target device's TX pin and the CP2102 module's RX pin to prevent damage. The CP2102's TX (3.3V) output is generally recognized as HIGH by 5V logic devices, so a level shifter is typically not needed for the CP2102's TX to the target device's RX.

Operating Instructions

Once the drivers are installed and the hardware is connected, you can begin serial communication:

1. **Connect to PC:** Plug the USB 2.0 to TTL UART module into an available USB port on your computer. The status LED on the module should illuminate.
2. **Open Serial Terminal:** Use a serial terminal program (e.g., PuTTY, CoolTerm, Arduino IDE Serial Monitor, minicom on Linux) on your computer.
3. **Configure Serial Port:** Select the COM port (Windows) or serial device (macOS/Linux) corresponding to the CP2102 module. Configure the baud rate, data bits, parity, and stop bits to match the settings of your target device. Common baud rates include 9600, 115200, and up to 921600 bps.
4. **Initiate Communication:** You should now be able to send and receive data between your computer and the target device. Data sent from the terminal will appear on the target device's RX pin, and data sent from the target device's TX pin will appear in the terminal.

Specifications

Feature	Detail
Chipset	CP2102 (Silicon Labs)
Interface	USB 2.0 to TTL UART (6-pin header)
Power Output	Dual 3.3V and 5V
Logic Level	3.3V (for TXD/RXD)

Feature	Detail
Compatible Devices	Laptop, Microcontroller, PC
Connector Type	Serial Adapter
Input Voltage	5 Volts (via USB)
Item Dimensions (L x W x H)	3.4 x 2.1 x 0.7 inches
Item Weight	0.01 Kilograms
Number of Ports	1
Model Number	LYSB01LRVQIFQ-CMPTRACCS
UPC	662578899853

Troubleshooting

Common Issues and Solutions:

- **Module not recognized by computer:**
  - Ensure CP2102 drivers are correctly installed. Reinstall if necessary.
  - Try a different USB port on your computer.
  - Check the USB cable (if using an extension) or try connecting directly.
- **No data transmission or garbled data:**
  - Verify that the TXD and RXD pins are correctly cross-connected (CP2102 TXD to device RXD, CP2102 RXD to device TXD).
  - Ensure the baud rate, data bits, parity, and stop bits in your serial terminal match the target device's settings.
  - Confirm that the GND connections are solid between the module and the target device.
  - Check for logic level compatibility. If the target device uses 5V logic for its TX, a level shifter might be required for the CP2102's RX pin.
- **Module gets hot:**
  - Immediately disconnect power. This often indicates a short circuit or incorrect wiring.
  - Carefully re-check all connections, especially power (3V3/5V) and ground.
- **Power LED not illuminating:**
  - Ensure the USB connection is secure and the computer's USB port is functional.
  - Test with a different USB port or computer.

Maintenance

The WINGONEER CP2102 module requires minimal maintenance. Keep the module clean and free from dust and debris. Store it in a dry, cool environment away from direct sunlight and static electricity. Avoid bending or stressing the USB connector or pin headers. If the module becomes dirty, gently clean it with a soft, dry cloth. Do not use liquid cleaners.

Warranty and Support

For technical support or warranty inquiries, please refer to the retailer or manufacturer's official support channels. Keep your purchase receipt as proof of purchase. General troubleshooting tips are provided in this manual, but for specific issues, professional assistance may be required.