

Getting Started with DFRobot Rainbow Link

Will guide you to use and work on the DFRobot Rainbow Link

 Difficult  Facile

 Dur e 2 heure(s)

 Cat gories  lectronique

 Co t 15 USD (\$)

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Introduction

Setting up LoRaWAN modules often requires a clean UART interface and reliable debugging tools — and that's exactly where the **DFRobot RainbowLink** shines. In this tutorial, we'll walk through connecting the **SeeedStudio Wio E5 Grove LoRa Module** to the RainbowLink using **UART communication**. Whether you're provisioning nodes in bulk or just want a streamlined way to test AT commands without a microcontroller, this guide covers it all. Let's unlock the full potential of your LoRa hardware with a plug-and-play approach that's modular, efficient, and beginner-friendly.

Mat riaux

Outils

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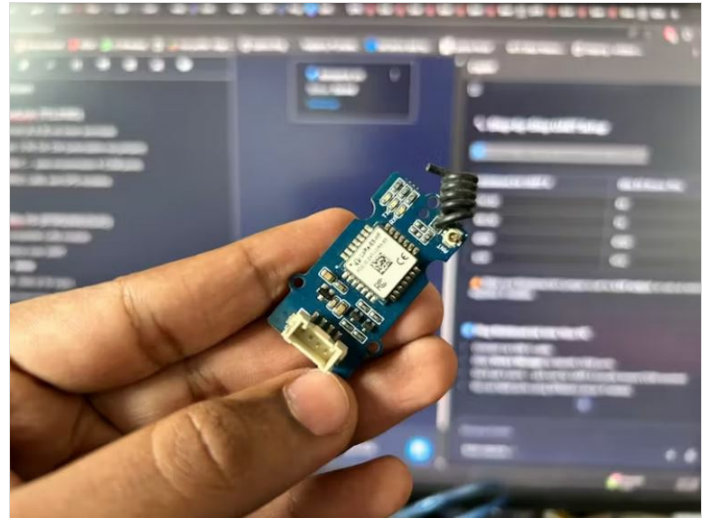
Étape 1 - Hardware Breakdown

? DFRobot RainbowLink (TEL0185)

- Dual TTL UART channels (A & B) via lever terminals
- Built-in power outputs: 3.3V, 5V, 12V (selectable via jumper)
- Plug-and-play via USB-C — auto enumerates 4 COM ports
- Ideal for ESP32, STM32, LoRa, and GPS modules

? SeeedStudio Wio E5 (STM32WLE5JC)

- Compact Grove-compatible LoRa module
- AT command interface over UART
- Default baud rate: **9600**
- Pins: VCC, TX, RX, GND (3.3V logic)
- Designed for ultra-low-power IoT applications



Étape 2 - Get PCBs for Your Projects Manufactured

You must check out PCBWAY for ordering PCBs online for cheap! You get 10 good-quality PCBs manufactured and shipped to your doorstep for cheap. You will also get a discount on shipping on your first order. Upload your Gerber files onto PCBWAY to get them manufactured with good quality and quick turnaround time. PCBWay now could provide a complete product solution, from design to enclosure production. Check out their online Gerber viewer function. With reward points, you can get free stuff from their gift shop. Also, check out this useful blog on PCBWay Plugin for KiCad from here. Using this plugin, you can directly order PCBs in just one click after completing your design in KiCad.



Étape 3 - ? Step-by-Step UART Setup

1? Connect Wio E5 to RainbowLink (UART A)

2? Plug RainbowLink into Your PC

- Connect via USB-C cable.
- Open **Device Manager** to identify COM ports.
- You'll see 4 ports — pick one for UART A (usually lowest COM number).

3? Configure Serial Terminal

Use any terminal tool (CoolTerm, PuTTY, Arduino Serial Monitor) and apply:

- Baud rate: **9600**
- Data bits: 8
- Parity: None
- Stop bits: 1
- Flow control: None

Open the terminal on UART A's COM port.

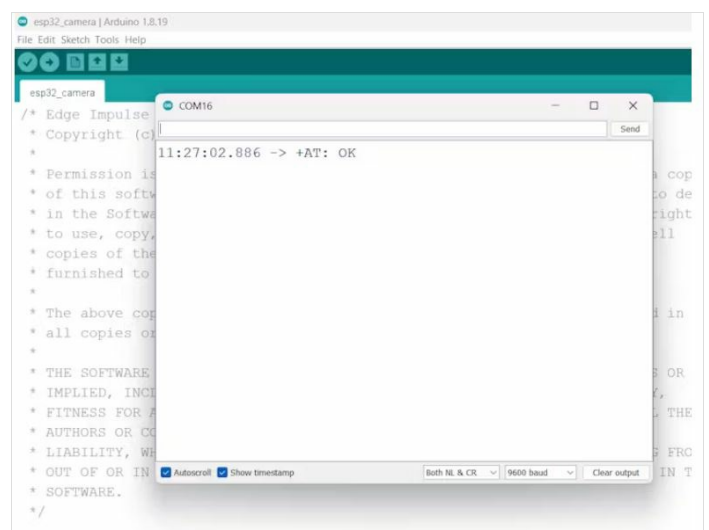
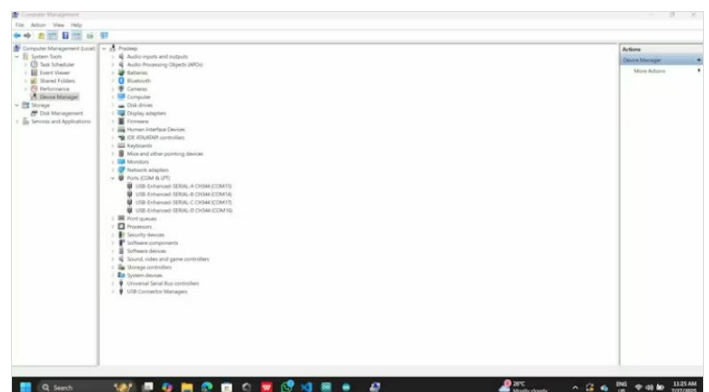
4? Send AT Commands

Try a basic command:

AT

You'll get:

+AT: OK



Étape 4 - Troubleshooting Tips

Optional: Use **UART B** for dual device setups or console mirroring.

? Wrap-Up

With your RainbowLink and Wio E5 now speaking over UART, you have a modular way to configure and test LoRaWAN settings — without the hassle of writing firmware for every new device. This setup is perfect for:

- Field provisioning of multiple nodes
- Remote scripting via serial commands
- Debugging LoRa payloads in real time

For your next step, consider automating AT commands using `pyserial` Python's , or adding a visual GUI for non-technical users.

🔍 Issue	✅ Fix
No response	Check TX/RX cross-wiring & correct COM port
Garbage output	Confirm baud rate is 9600
Join failure	Verify LoRa gateway range and valid credentials
Power issues	Recheck jumper setting (must be 3.3V for Wio E5)