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› DIYmalls G28U7FTTL GPS Receiver Module User Manual

## DIYmalls G28U7FTTL

# DIYmalls G28U7FTTL GPS Receiver Module User Manual

Model: G28U7FTTL | Brand: DIYmalls

## 1. INTRODUCTION

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The DIYmalls G28U7FTTL is a compact GPS receiver module designed for various applications, including Arduino projects, FPV drones, and flight control systems. This module features a built-in LNA signal amplifier and flash memory for saving configurations. It provides accurate positioning data via NMEA-0183 protocol at a baud rate of 9600bps and an update rate of 1Hz. The module operates within a voltage range of 3.3V to 5V and includes a high-sensitivity ceramic antenna.



Figure 1: DIYmalls G28U7FTTL GPS Receiver Module.

## 2. PRODUCT FEATURES

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- Compact size: 28x28x8.5mm.
- Integrated LNA signal amplifier for enhanced reception.
- Onboard flash memory for configuration storage.
- Red LED indicates power supply status.
- Green LED indicates GPS fix status.
- 25x25x4mm high-sensitivity ceramic antenna.
- Compatible with Arduino, FPV drones, flight controllers, and Windows systems.
- Includes 3 cables for easy connection to breadboards, USB to TTL modules, or PCs.

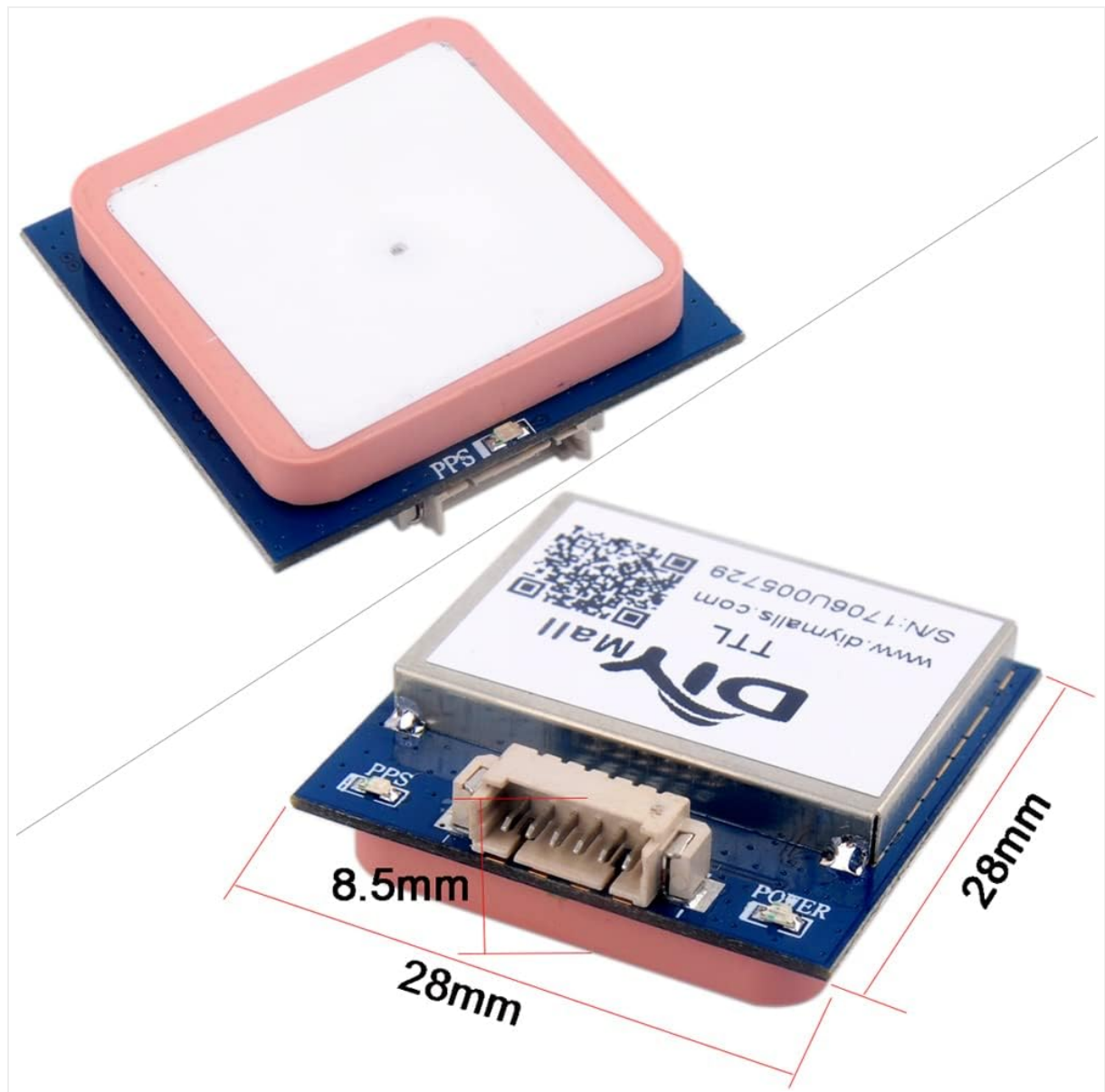
## 3. PACKAGE CONTENTS

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- 1x G28U7FTTL GPS Receiver Module
- 3x Connection Cables

## 4. SPECIFICATIONS

Feature	Value
Model Name	G28U7FTTL
Item Weight	0.352 ounces
Product Dimensions	1.1 x 1.1 x 0.33 inches (28 x 28 x 8.5 mm)
Operating Voltage	3.3V-5V
Baud Rate	9600bps (configurable)
Update Rate	1Hz (configurable)
Output Protocol	NMEA-0183
Antenna Type	25x25x4mm High-Sensitivity Ceramic Antenna
Special Features	Built-in LNA signal amplifier, Flash for configuration saving
Connectivity Technology	USB (via adapter)
Operating System Compatibility	Windows



## 5. SETUP GUIDE

### 5.1 Pinout Diagram

Understand the pin assignments for proper connection:

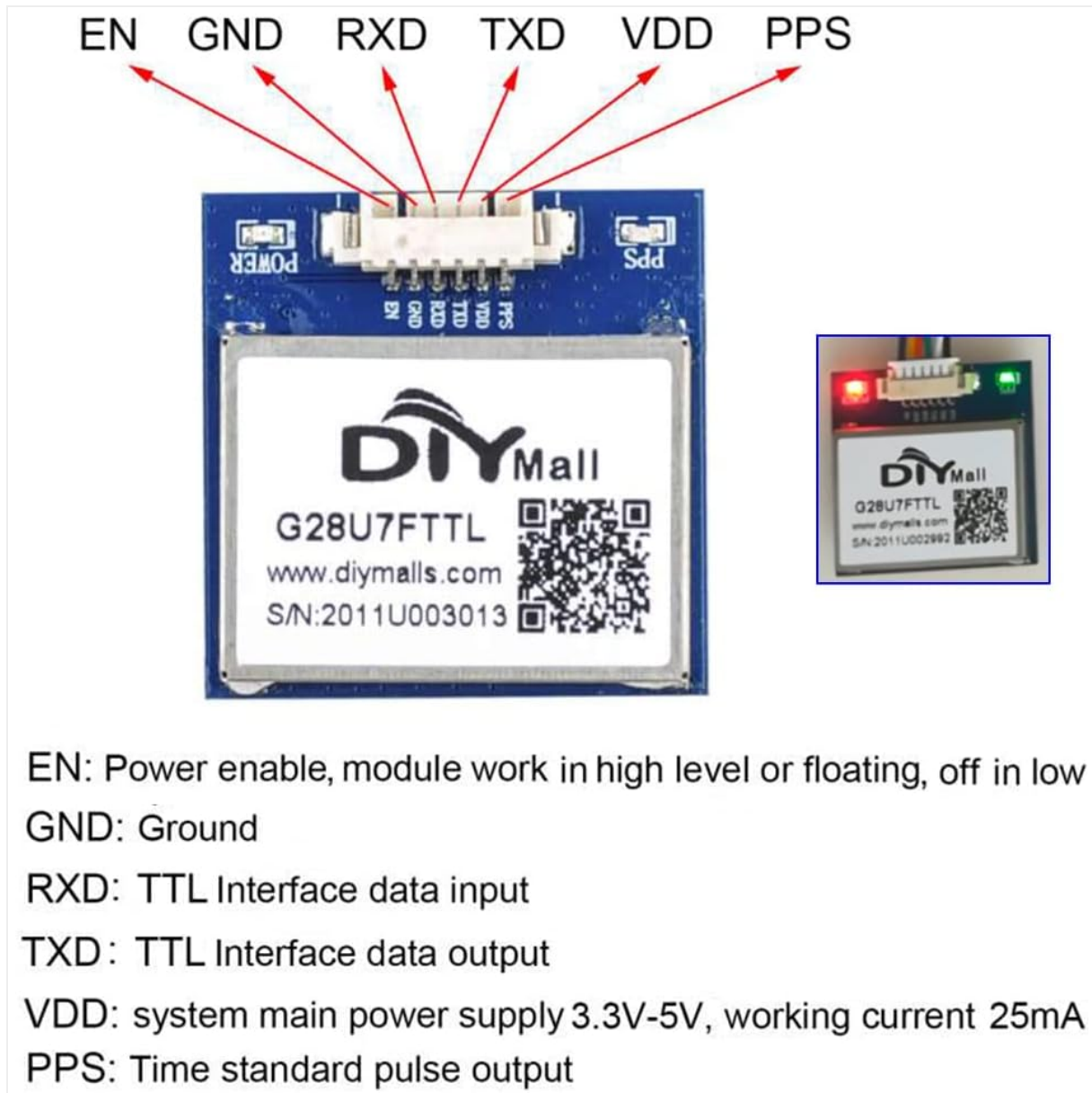


Figure 3: Pinout diagram for the G28U7FTTL module. EN: Power enable (high level or floating for ON, low for OFF), GND: Ground, RXD: TTL Interface data input, TXD: TTL Interface data output, VDD: System main power supply 3.3V-5V (working current 25mA), PPS: Time standard pulse output.

### 5.2 Connecting to Arduino

To connect the G28U7FTTL module to an Arduino board, follow these connections:

- **VDD** (GPS) to **5V** (Arduino)
- **GND** (GPS) to **GND** (Arduino)
- **TXD** (GPS) to Digital Pin **4** (Arduino)
- **RXD** (GPS) to Digital Pin **3** (Arduino)

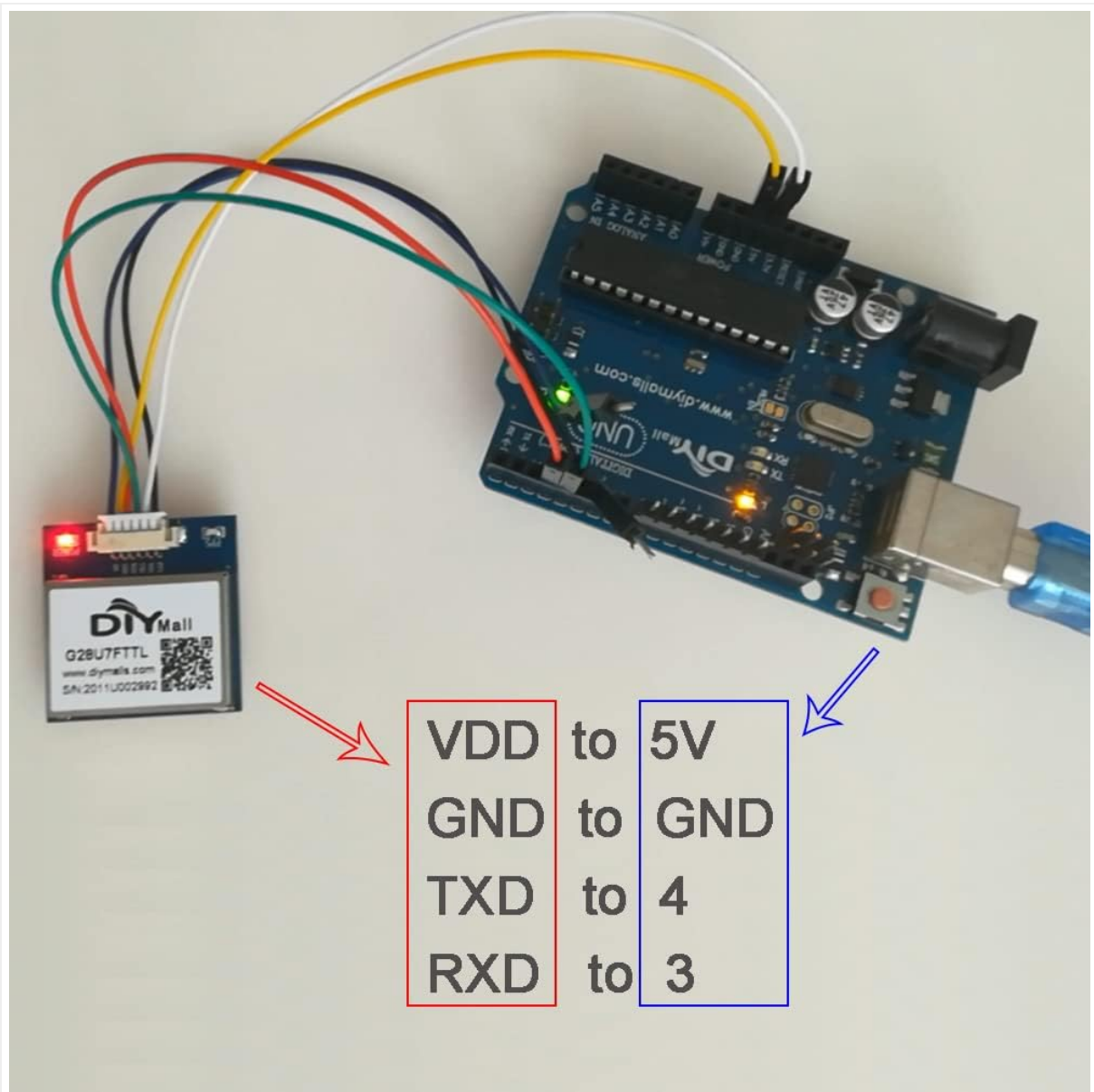


Figure 4: G28U7FTTL module wired to an Arduino board.

### 5.3 Connecting to PC via USB to TTL Module

For PC communication and configuration, use a USB to TTL module. Connect as follows:

- **VDD** (GPS) to **5V** (USB to TTL)
- **GND** (GPS) to **GND** (USB to TTL)
- **TXD** (GPS) to **RXD** (USB to TTL)
- **RXD** (GPS) to **TXD** (USB to TTL)

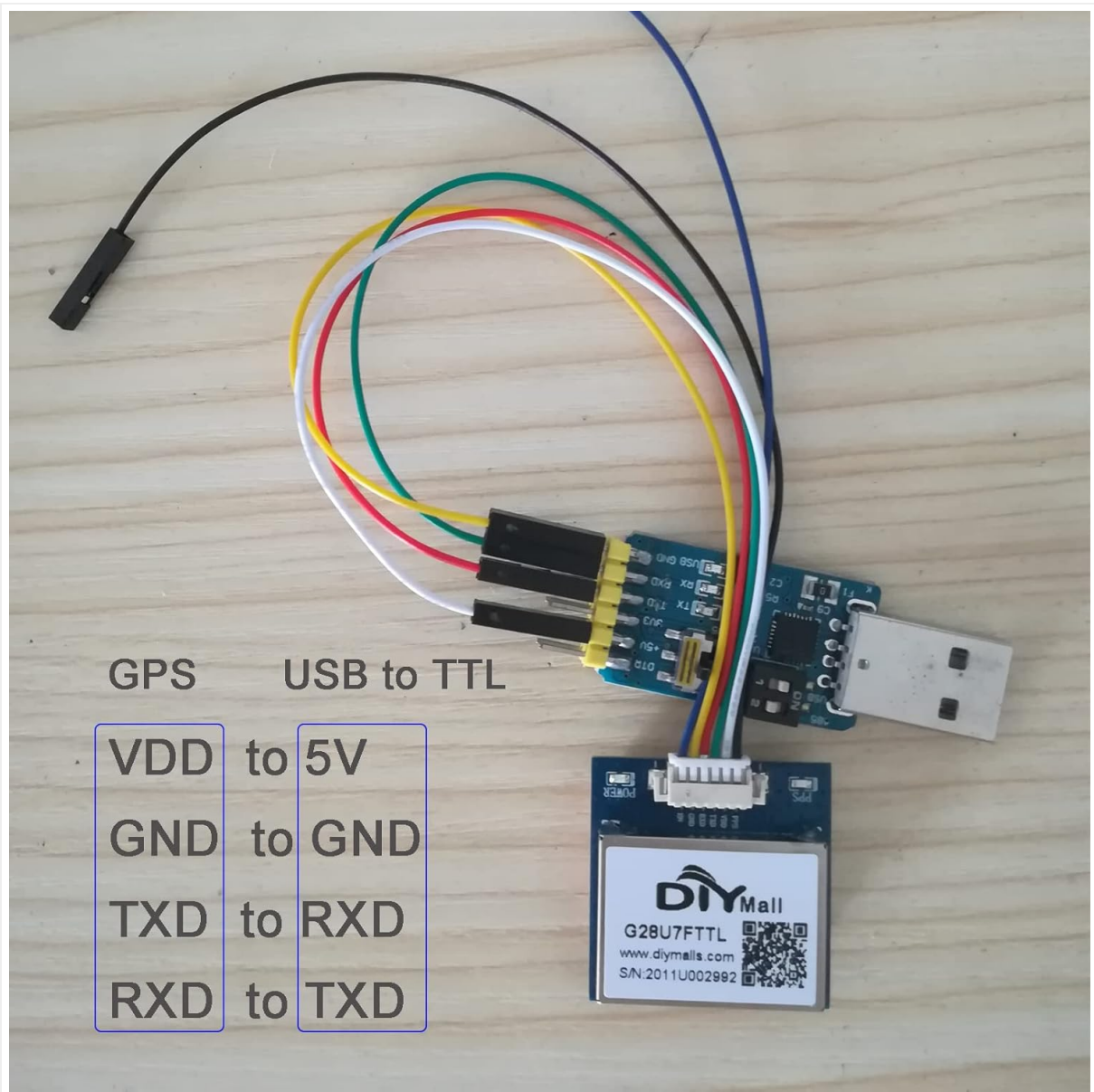


Figure 5: G28U7FTTL module connected to a USB to TTL adapter.

After connecting, plug the USB to TTL module into your computer. A driver may be required for Windows to recognize the USB to TTL module.

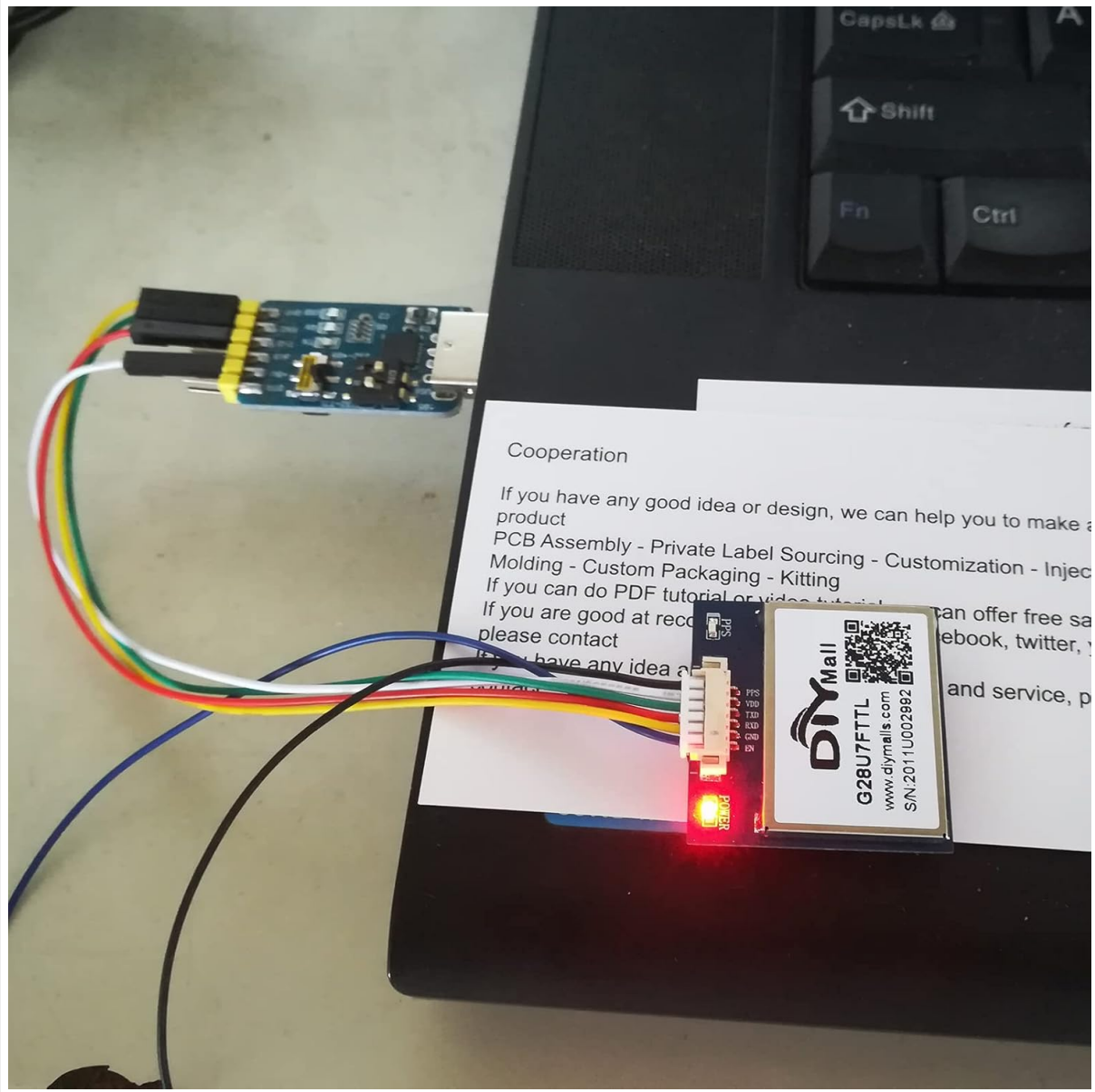


Figure 6: G28U7FTTL module connected to a laptop, ready for software configuration.

## 6. OPERATING INSTRUCTIONS

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### 6.1 LED Indicators

- **Red LED:** Indicates power supply. It should be steadily lit when the module is powered.
- **Green LED (PPS):** Indicates GPS fix status. It will flash once a satellite fix is acquired.

### 6.2 U-center Software Configuration

The G28U7FTTL module can be configured using u-blox's U-center software. This software allows you to change parameters such as baud rate, update rate, and enabled GNSS constellations.

1. **Install U-blox Driver and U-center Software:** Download and install the necessary drivers and U-center software from the official u-blox website. Ensure you select the correct drivers for your operating system.



Figure 7: U-center software download page. Download the appropriate version for M9 products and below.

2. **Install CP210X Driver:** If using a USB to TTL converter, install the CP210X driver on your computer.



Figure 8: U-center driver installation, ensure Windows USB Serial Driver is selected.

3. **Connect Module:** Connect the G28U7FTTL module to your PC using the USB to TTL adapter as described in Section 5.3.
4. **Open U-center:** Launch U-center, select the correct COM port for your USB to TTL adapter, and set the baud rate to 9600.



Figure 9: U-center displaying NMEA data from the GPS module.

#### 5. Configure Baud Rate:

- Open the menu bar **View** -> **Configuration View** -> **PRT (Ports)**.
- Enter the desired baud rate (e.g., 115200) and click **Send**.
- After changing the baud rate, you must switch to the new baud rate in U-center to continue receiving data.

#### 6. Configure Update Rate:

- Open the menu bar **View** -> **Configuration View** -> **RATE (Rates)**.
- Enter the desired measurement period (e.g., 100 ms for 10Hz update rate) and click **Send**.

#### 7. Save Configuration:

To save your changes permanently to the module's flash memory:

- Open the menu bar **View** -> **Configuration View** -> **CFG (Configuration)**.
- Select **Save current configuration** and choose **FLASH** under Devices.

- Click **Send** to save the modifications.

## 6.3 Video Tutorial: GPS Receiver Configuration in U-center

Your browser does not support the video tag.

Video 1: A detailed guide on configuring the DIYmalls GPS Receiver using U-center software. This video demonstrates how to set up the module and view data.

## 7. MAINTENANCE

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- Keep the module clean and free from dust and moisture.
- Avoid exposing the module to extreme temperatures or direct sunlight for prolonged periods.
- Handle with care to prevent physical damage to the ceramic antenna or PCB.
- Ensure proper ventilation if enclosed in a casing to prevent overheating.

## 8. TROUBLESHOOTING

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- **No Power (Red LED Off):**
  - Check power connections (VDD and GND) to ensure they are correctly wired and receiving 3.3V-5V.
  - Verify the power source is active.
- **No GPS Fix (Green PPS LED Not Flashing):**
  - Ensure the module has a clear view of the sky. Indoor use or obstructions can prevent satellite acquisition.
  - Allow sufficient time (several minutes) for the module to acquire a fix, especially during the first use or after a long period of inactivity (cold start).
  - Check antenna orientation; the ceramic antenna should generally face upwards.
  - Verify that the GNSS constellations are enabled in U-center software (refer to Section 6.2).
- **No Data Output / Incorrect Data:**
  - Confirm RXD and TXD connections are correctly cross-wired (TXD of GPS to RXD of receiver, RXD of GPS to TXD of receiver).
  - Ensure the baud rate set in your software (e.g., Arduino Serial Monitor, U-center) matches the module's baud rate (default is 9600bps).
  - Check for driver installation issues if connecting via USB to TTL.
  - Verify that the NMEA-0183 protocol is enabled in U-center.
- **Module Not Recognized by PC:**
  - Reinstall the USB to TTL driver (e.g., CP210X).
  - Try a different USB port or cable.
  - Ensure the USB to TTL module itself is functioning correctly.

## 9. WARRANTY

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This DIYmalls G28U7FTTL GPS Receiver Module comes with a 30-day warranty. For warranty claims or returns, please contact the seller or refer to the purchase platform's return policy.

## 10. SUPPORT

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For further assistance, technical support, or additional resources, please visit the official DIYmalls store or website:

- DIYmalls Store: [DIYmalls Amazon Store](#)
- General Inquiries: Refer to the product page or contact the seller directly for specific inquiries.