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› Gearmo USB to TTL Serial Adapter Cable 5V (Model SS-TTL5VT) Instruction Manual

Gearmo SS-TTL5VT

Gearmo USB to TTL Serial Adapter Cable 5V (Model SS-TTL5VT) Instruction Manual

Model: SS-TTL5VT | Brand: Gearmo

1. INTRODUCTION

The Gearmo USB to TTL Serial Adapter Cable is designed to convert a standard USB Type-A port into a UART serial COM port. This enables seamless connection between your computer and various embedded systems, microcontrollers, and logic-level serial interfaces operating at 5V TTL. The cable integrates an FTDI FT232QR chip for reliable data transfer and broad operating system compatibility.



Image 1.1: The Gearmo USB to TTL Serial Adapter Cable, featuring the USB-A connector with a transparent housing that allows visibility of the internal FTDI chip and activity LEDs.

2. KEY FEATURES

- **USB-to-Serial TTL Conversion:** Converts a USB Type-A port to a standard UART serial COM port for 5V TTL serial interfaces.
- **FTDI FT232QR Chip:** Utilizes the reliable FTDI FT232QR chip for stable and efficient serial communication.
- **6-Pin Header Connector:** Features a 2.54mm (0.1 inch) pitch wire-to-board female connector for versatile connections.
- **Adjustable Communication Protocols:** Supports asynchronous serial data transfer with adjustable data bits, stop bits, and parity.
- **Built-In Activity LEDs:** Transmit (Tx) and Receive (Rx) LEDs provide visual monitoring of data flow and power status.
- **USB Powered:** Supplies up to +5V (max 450 mA) from the USB port to power connected target logic devices.
- **High Data Transfer Rates:** Supports UART communication from 300 baud up to 3 Mbaud.
- **Wide OS Compatibility:** Compatible with Windows 11, 10, 8, 7, macOS, and Linux systems.

3. SETUP AND DRIVER INSTALLATION

The Gearmo USB to TTL Serial Adapter Cable is designed for plug-and-play functionality on most modern operating systems. It is typically recognized as a standard COM port, often requiring no complex driver installation for basic serial communication.

3.1. Driver Installation (If Required)

1. **Automatic Installation:** On Windows 10/11, macOS, and recent Linux distributions, the necessary FTDI drivers are often installed automatically when the cable is first connected to a USB port.
2. **Manual Installation:** If the device is not recognized or functions incorrectly, manual driver installation may be necessary.
 - Visit the official FTDI website (ftdichip.com/drivers/) to download the latest VCP (Virtual COM Port) drivers for your specific operating system.
 - Follow the installation instructions provided by FTDI.
3. **Verification:** After installation, verify the device in your operating system's Device Manager (Windows) or equivalent system information utility (macOS/Linux) to ensure it appears as a "USB Serial Port" or similar.

3.2. Connecting the Cable

1. Connect the USB Type-A end of the cable to an available USB port on your computer.
2. Connect the 6-pin female socket header to your target device's corresponding 6-pin male header. Ensure correct pin alignment to prevent damage.



Image 3.1: The Gearmo USB to TTL Serial Adapter Cable connected to a laptop, illustrating the USB-A end plugged into the computer and the 6-pin header ready for connection to a target device.

Your browser does not support the video tag.

Video 3.1: An official video demonstrating the Gearmo USB Serial Cable, showcasing its features and potential applications. This video provides a visual overview of the product and its connectivity.

4. OPERATING INSTRUCTIONS

4.1. 6-Pin Header Assignment

The 6-pin header provides the necessary connections for TTL serial communication and power. Refer to the pinout below for correct wiring:

Pin Number	Function	Description
1	GND	Ground connection.
2	CTS	Clear To Send (Hardware Flow Control).
3	VCC	+5V power output (max 450 mA) from USB.
4	TXD	Transmit Data (output from adapter, input to target).
5	RXD	Receive Data (input to adapter, output from target).
6	RTS	Request To Send (Hardware Flow Control).

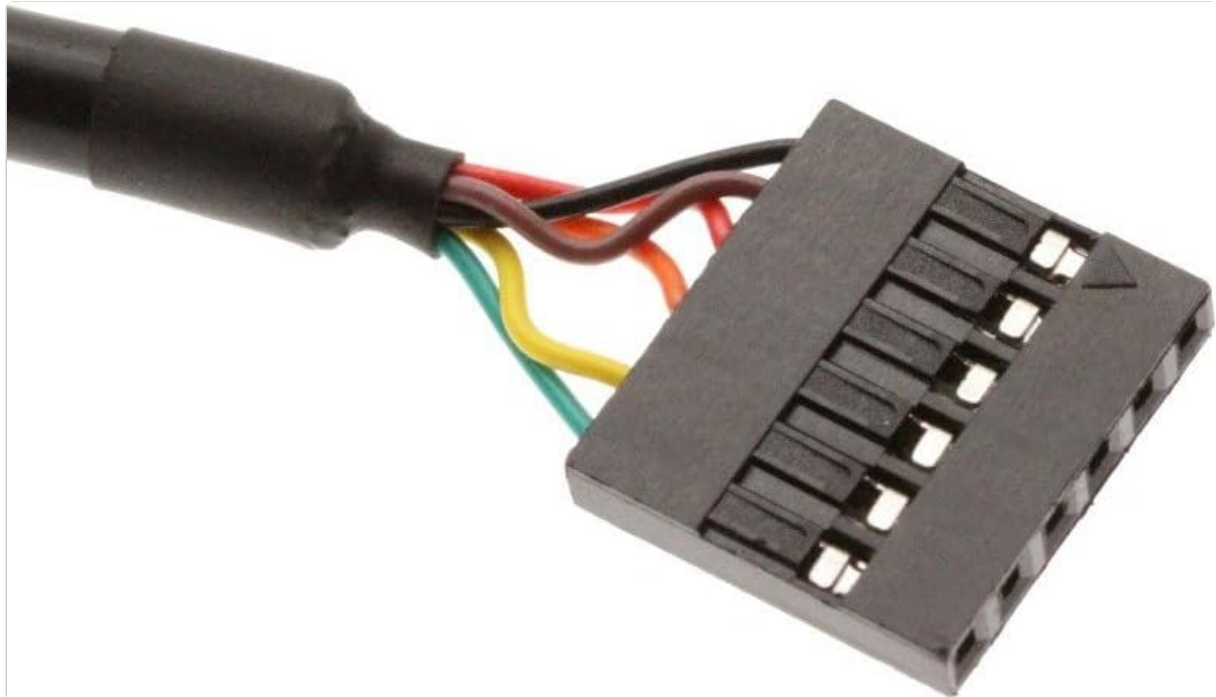


Image 4.1: A detailed view of the 6-pin female socket header, showing the individual colored wires connected to each pin, corresponding to the pinout table.

4.2. Data Communication

- Use a serial terminal program (e.g., PuTTY, Tera Term, Arduino Serial Monitor) on your computer to communicate with the connected device.
- Configure the serial port settings (baud rate, data bits, stop bits, parity, flow control) to match those of your target device. The cable supports baud rates from 300 to 3 Mbaud.
- The translucent USB jacket allows you to observe the Tx (transmit) and Rx (receive) LEDs, which indicate active data transfer.

5. MAINTENANCE

To ensure the longevity and optimal performance of your Gearmo USB to TTL Serial Adapter Cable, follow these maintenance guidelines:

- **Storage:** Store the cable in a cool, dry place away from direct sunlight and extreme temperatures. Avoid tightly coiling the cable to prevent internal wire damage.
- **Cleaning:** Use a soft, dry cloth to clean the cable and connectors. Do not use liquid cleaners or solvents.
- **Handling:** Always grasp the connectors when plugging or unplugging the cable, rather than pulling

on the cable itself. Avoid bending the cable sharply, especially near the connectors.

- **Environmental Use:** The cable is suitable for both indoor and outdoor use, but protect it from excessive moisture and physical stress.



Image 5.1: The Gearmo USB to TTL Serial Adapter Cable coiled, demonstrating its durable design suitable for various environments.

6. TROUBLESHOOTING

If you encounter issues with your Gearmo USB to TTL Serial Adapter Cable, consider the following troubleshooting steps:

- **Device Not Recognized:**
 - Ensure the cable is securely plugged into a functional USB port.
 - Verify that the correct FTDI drivers are installed for your operating system. Refer to Section 3.1.
 - Try a different USB port or another computer to rule out port or system-specific issues.
- **No Data Transfer / Communication Errors:**
 - Check that the serial port settings (baud rate, data bits, stop bits, parity, flow control) in your terminal program exactly match those of your target device.
 - Confirm the 6-pin header is correctly wired to your target device, paying close attention to TXD, RXD, and GND connections. A common mistake is swapping TXD and RXD.
 - Observe the Tx/Rx LEDs on the USB connector. If they are not flashing during communication attempts, it indicates no data flow.
- **No +5V Output at VCC Pin:**

- Ensure the USB port provides sufficient power. Some older or unpowered USB hubs may not supply enough current.
- Test the cable with a multimeter to confirm voltage presence at the VCC pin (Pin 3) relative to GND (Pin 1) when connected to a computer. If no voltage is present, the cable may be defective.

- **Intermittent Connection:**

- Check for loose connections at both the USB and 6-pin header ends.
- Ensure the cable is not subjected to excessive bending or strain.

7. SPECIFICATIONS

Feature	Detail
Brand	Gearmo
Model Name	SS-TTL5VT
Connector Type	USB Type A, 6-Pin Female Socket (2.54mm pitch)
Chipset	FTDI FT232QR
Output Voltage (VCC)	+5V (max 450 mA)
Data Transfer Rate	300 baud to 3 Mbaud
Cable Length	3 feet (approx. 0.91 meters)
OS Compatibility	Windows 11, 10, 8, 7, macOS, Linux
Compliance	RoHS
Item Weight	3.2 ounces (approx. 90.7 grams)

8. WARRANTY AND SUPPORT

For warranty information and technical support, please refer to the official Gearmo website or contact their customer service directly. Details regarding product registration, warranty claims, and support resources can typically be found on the manufacturer's support pages.

Note: This manual provides general instructions. Specific applications may require additional configuration or software.