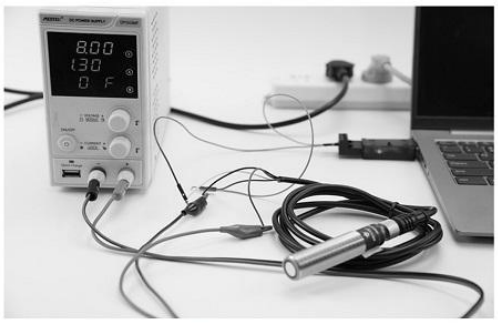
Introduction

RainbowLink is an advanced USB protocol converter designed for efficient multi-channel serial communication and power output, tailored for IoT and industrial applications. Featuring **4 independent channels—RS485, RS232, and 2 TTL channels**—RainbowLink serves as an all-in-one solution for engineers managing multiple communication protocols in IoT ecosystems. The device **supports Windows and Linux** operating systems, and it is compatible with devices like LattePanda and Raspberry Pi. RainbowLink is driver-free for most setups; however, installing the optional drivers enhances functionality by assigning unique device identifiers, making it even easier to manage.

With simultaneous 12V, 5V, and 3.3V power outputs, RainbowLink eliminates the need for multiple converters and external power supplies, making it ideal for testing and development across diverse industrial, agricultural, and laboratory environments.

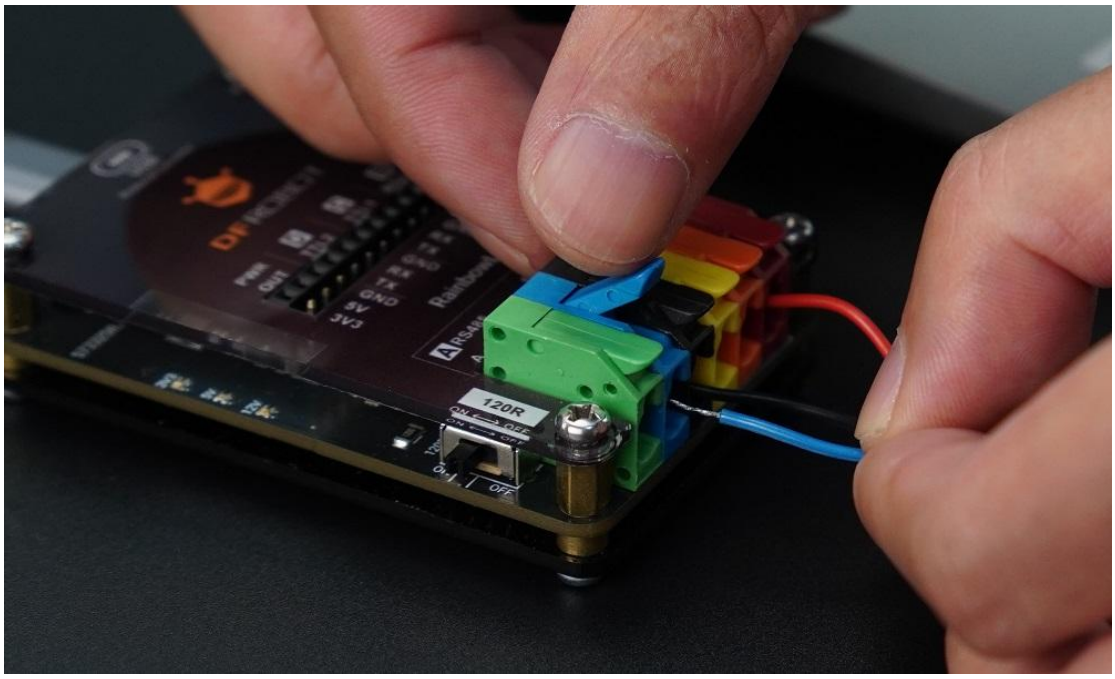
All-in-One Convenience



Multiple Converters
Messy Connections

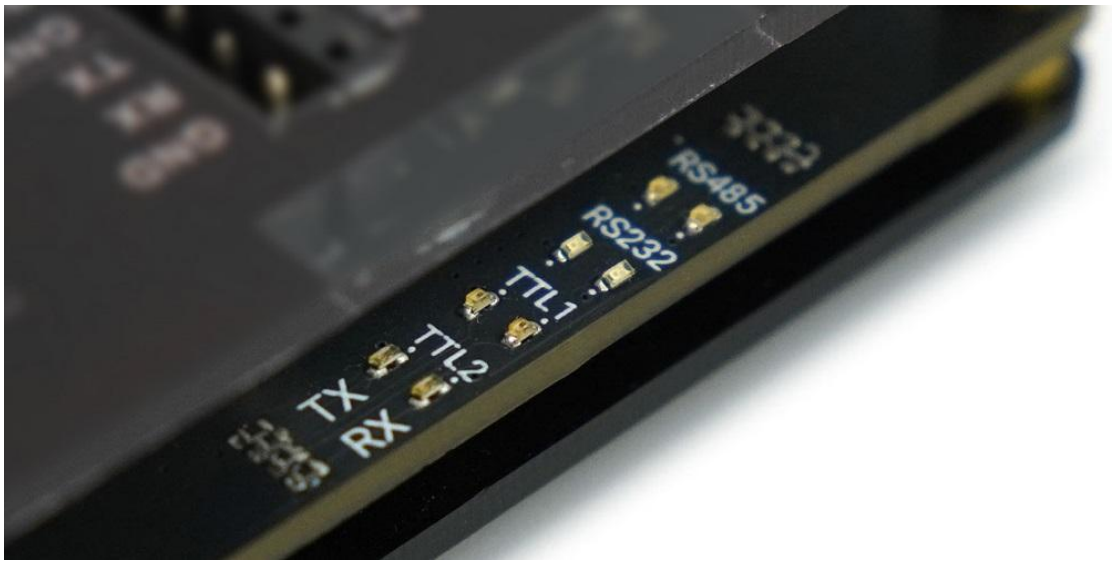
Quick-Connect Lever Terminals for Easy Wiring

RainbowLink features lever-type quick-connect terminals, allowing for rapid, reliable wiring without the need for tools or connectors. This innovative design supports over 2000 connect-disconnect cycles and fits both pin headers and sockets, ensuring maximum flexibility. The result is a clean, organized setup that reduces preparation time and minimizes the risk of loose connections, essential for reliable test environments.



4 Independent Channels in 1 Device

RainbowLink combines four isolated communication channels—1×RS485, 1×RS232, and 2×TTL—within a single device. This setup allows engineers to replace multiple converters, streamlining configurations and reducing clutter on workstations. Each channel operates independently, enabling simultaneous monitoring and control of multiple serial devices, greatly simplifying complex multi-protocol setups.



Flexible Power Output Options

Supporting a range of testing needs, RainbowLink provides three voltage outputs: 12V (800mA), 5V (2A), and 3.3V (200mA). This versatile power solution ensures compatibility with various sensors and devices, especially in field testing where power sources are limited. With RainbowLink, external power supplies are no longer necessary, allowing for quick and convenient sensor testing even in remote or outdoor environments.

Applications

Industrial Sensor Testing and Debugging

Multi-Protocol Device Debugging

Laboratory and Development Board Debugging

Figure: Wiring RS485 soil sensor and RainbowLink Converter to Detect Soil Moisture

Specification

USB Interface: Type-C

Input Voltage: 5V

Baud Rate: 2400 - 128,000 bps

TTL Level: 3.3V

TTL Channels: 2

RS485 Channel: 1

RS232 Channel: 1

Output Voltage:

3.3V: Rated current 200mA

5V: Directly connected to the Type-C interface (Max 2A when connected to a Type-C port on a computer; Max 500mA when connected to a USB-A port)

12V: Rated current 800mA

Compatibility: Supports Windows and Linux; compatible with LattePanda and Raspberry Pi.

Driver Requirements: Driver-free for basic functionality; installing drivers enhances performance with unique device identifiers.

Dimensions: 72mm x 47mm x 23mm

Documents

Product Wiki

Function Indication Diagram

Question and Answer

Driver (WINDOWS)

Driver (MAC)

Shipping List

RainbowLink 4 Channel USB to Serial Converter (RS485 / RS232 / TTL) x1