

Crius FTDI FT232RL Basic 6-pin Breakout Board

The **Crius FTDI FT232RL Basic 6-pin Breakout Board** is a compact and widely-used USB-to-Serial (UART) converter based on the **FTDI FT232RL** chip. It is primarily used to program and communicate with microcontrollers or development boards like **Arduino Pro Mini**, **ESP8266**, **ESP32**, or other devices that lack native USB connectivity.

Key Features:

- **Chipset:** FTDI FT232RL (from FTDI – Future Technology Devices International)
 - **Interface:** USB to UART (Serial)
 - **6-pin header:** GND, CTS, VCC, TXD, RXD, DTR
 - **Selectable Voltage Output:** 3.3V or 5V logic level (jumper or solder bridge)
 - **USB Interface:** Standard mini-USB or micro-USB port (depends on board variant)
 - **Status LEDs:** May include power and TX/RX LEDs for debugging
 - **Driver support:** Available for Windows, macOS, Linux
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Pinout (Standard 6-pin Header):

<i>Pin</i>	<i>Function</i>
GND	Ground
CTS	Clear To Send
VCC	Voltage (3.3V/5V)
TXD	Transmit Data
RXD	Receive Data
DTR	Data Terminal Ready

Applications:

- Programming boards like Arduino Pro Mini or ATmega328
- Debugging serial communication
- Connecting embedded systems to PC
- Firmware uploads to microcontrollers
- Serial data logging

How It Works:

- The board converts USB signals to UART (TTL level).
- When connected to a PC, it appears as a COM port.
- The **DTR pin** can automatically reset microcontrollers during upload, enabling seamless programming (very useful for Arduino IDE).
- Drivers need to be installed (often FTDI VCP drivers from [FTDI's official website](#)).

Advantages:

- Reliable and widely supported FTDI chipset
- Supports automatic reset with DTR
- Compatible with various operating systems
- Available in compact form factor

Disadvantages:

- Typically more expensive than alternatives (like CH340 or CP2102)
 - May not include voltage selector on some versions
 - Some versions may be counterfeits (always buy from trusted sources)
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References:

1. FTDI Chip Official Website – FT232RL Datasheet: <https://ftdichip.com/products/ft232rl/>
2. Arduino Documentation – Uploading Code with FTDI: <https://docs.arduino.cc/hardware/pro-mini>
3. SparkFun FTDI Basic Breakout (Similar Product): <https://www.sparkfun.com/products/9873>
4. Adafruit FTDI Friend Guide: <https://learn.adafruit.com/ftdi-friend/overview>
5. OSHWLAB Project: <https://oshwlab.com/rindeal/cruius-ft232rl>