

FT234 Expansion Module User Guide

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Introduction

Numato Lab's FT234 Expansion Module is a versatile product for USB to serial UART interfaces. The FTDI UART Interface and CBUS group pins supply can be configured for **3V3**, so it is compatible with microcontrollers with both TTL logic. Major advantage of this board is, it can be controlled without any USB specific firmware programming since the entire USB protocol handled on the chip itself. This module is designed to be used with Numato Lab's FPGA/Micro-controller boards featuring a 2x6 pin Expansion connector. It can also be used with other boards and connector types by using manual wiring.

Applications

- USB to RS232/RS422/RS485 Converters.
- USB Smart Card Readers.
- USB Instrumentation.
- USB Industrial Control.
- USB FLASH Card Reader and Writers.
- USB Audio and Low Bandwidth Video data transfer.

This product is compatible with the following operating systems.

- Windows XP and later
- Linux
- Mac
- And any other operating system that supports USB CDC devices

The drivers listed above are all available to download for free from <http://www.ftdichip.com/FTDrivers.htm>.

Board Features

- Single chip USB to asynchronous serial data transfer interface.
- USB 2.0 Full Speed compatible.
- Entire USB protocol handled on the chip. No USB specific firmware programming required.
- Data transfer rates from 300 baud to 3Mbaud (RS422, RS485, and RS232) at TTL levels.
- Configurable CBUS I/O pin.
- UART interface support for 7 or 8 data bits, 1 or 2 stop bits and odd / even / mark / space / no parity
- Configurable I/O pin output drive strength. 4 mA (min) and 16 mA (max).
- FTDI's royalty-free Virtual Com Port (VCP) and Direct (D2XX) drivers eliminate the requirement for USB driver development in most cases.

How to Use the Breakout

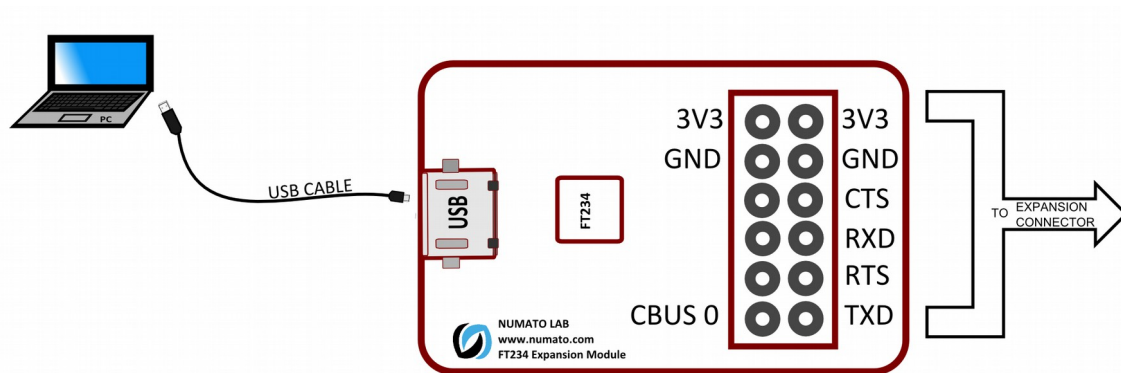
The following section describes how to use this Breakout.

Components/Tools required

Along with the module, you may need the items in the list below for easy and fast installation.

1. USB A to Micro B cable.
2. Any FPGA/Micro-controller board featuring a 2x6 pin Expansion connector.

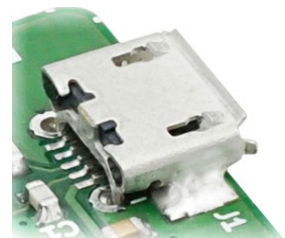
Connection Diagram



Above image shows basic connection diagram that can be used in most of the situations. The following sections identify individual connections in detail.

USB Interface

The on board full speed USB controller that helps a PC/Linux/Mac computer to communicate and control this module seamlessly. Use a USB A to Micro B cable to connect with a PC. By default, the logic section of the module is powered from USB so make sure not to overcrowd unpowered USB hubs (the picture on the right shows USB Micro B connector).



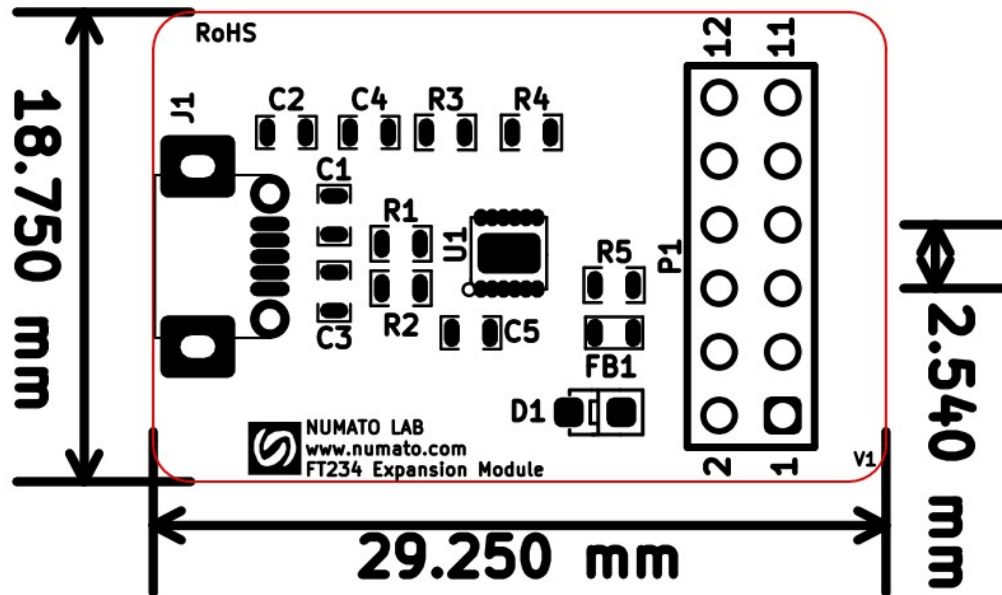
Visit <http://numato.com/cables-accessories>. to buy cables and accessories for this product.

Connection Details

Header P1

Header Pin No.	Pin Details
1	TXD
2	CBUS0
3	RTS
4	NC
5	RXD
6	NC
7	CTS
8	NC
9	GND
10	GND
11	VCC3V3
12	VCC3V3

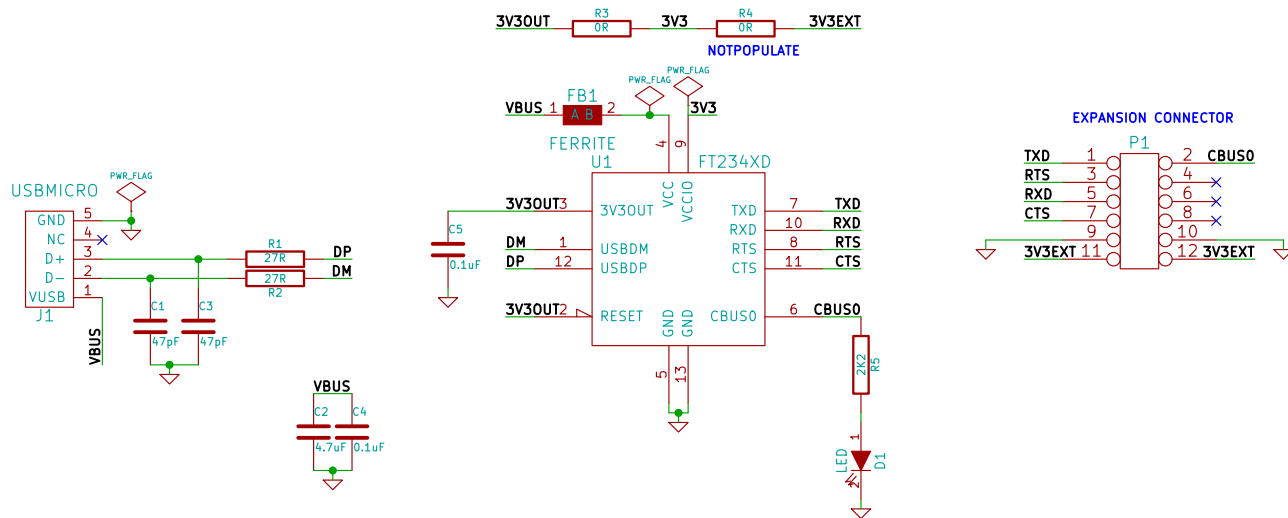
Physical Dimensions



L x W x H : 29.250 mm x 18.750 mm x 14 mm

Schematics

See next page.



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