

# Future Technology Devices International Ltd

## FTPD-1 FTDI Programmer Debugger 1 Module Datasheet



*FTPD-1 is a module used for programming and debugging.*

### 1. Introduction

The FTPD-1 is a module with a FT230X USB to UART converter and a dual buffer. The FTPD-1 utilises these components to generate a single line half-duplex UART signal with no handshake which can be used to program several of FTDI's MCU devices, predominantly FT51A.

This module also provides a switched 5V power supply to the target device and is configured such that it does not infringe USB compliance regulations for supplying bus power.

FTPD-1's board dimensions are the same as a credit card; however the fitted components give it additional height. The module is supplied with a berg connector ribbon cable; however it is compatible for operation with pogo pin cables.

All components used, including the FT230X are Pb-free (RoHS compliant).

### 1.1 Features

The FTPD-1 has the following features:

- Full-Speed USB to UART converter
- Single half-duplex UART data pin input/output
- Two dedicated GPIOs to control Reset# and Prog# outputs
- TXDEN line to control the direction of the half-duplex UART data
- PWREN# line to control the power supply
- 2X3 way 2.54mm pitch shrouded male header
- 150mm ribbon cable with Female to Female 2.54mm pitch 2x3 way connectors
- Protected by resettable fuse with 0.5A hold current and schottky diode on the output power line.
- Pogo pin compatible
- Power output available, indication LED

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## 2 Driver Support

### Royalty-Free Drivers (USB Drivers + DLL S/W Interface):

- Windows 10 32,64-bit
- Windows 8.1 32,64-bit
- Windows 8 32,64-bit
- Windows 7 32,64-bit

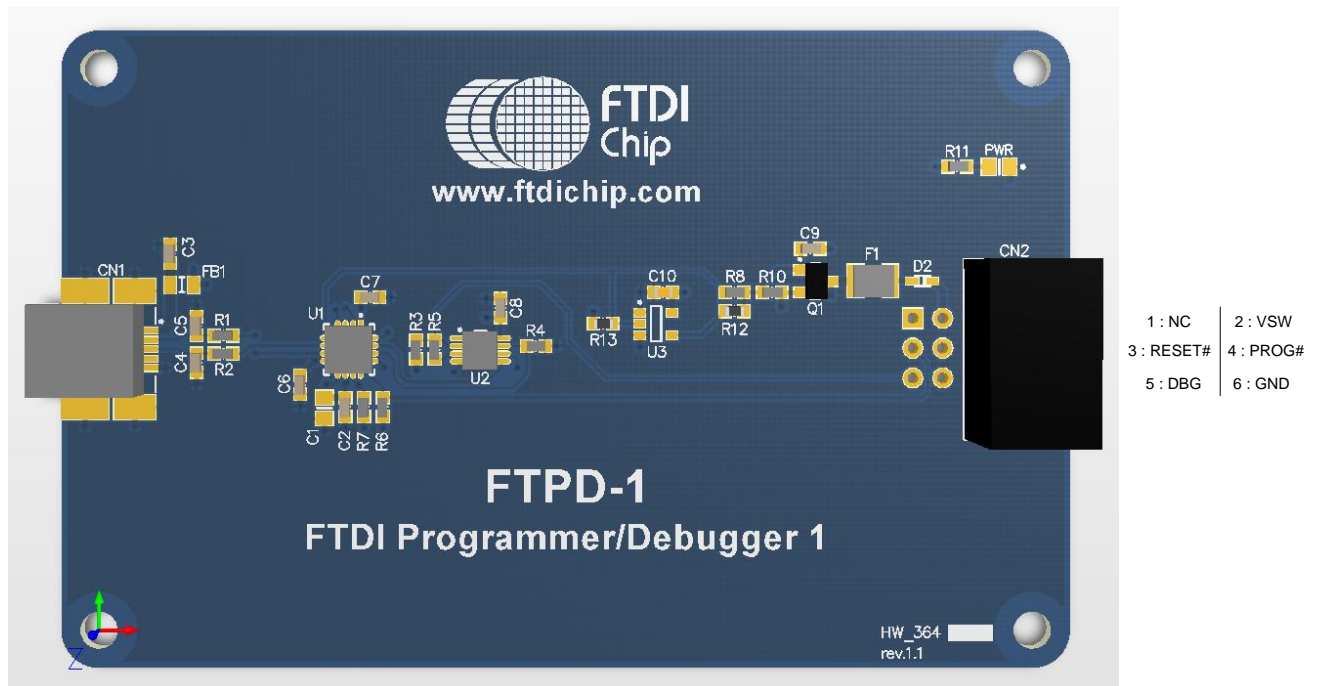
The drivers listed above are all available to download for free from [www.ftdichip.com](http://www.ftdichip.com).

### 3 Ordering Information

Module Code	Description
FTPD-1	FTDI Programmer / Debugger Module

## 4 FTDP-1 Signals

### 4.1 FTPD-1 Pin Out



**Figure 1 – Module Pin Out**

Figure 1 illustrates the signals available on the 6 pin header of the FTPD-1.

## 4.2 Signal Descriptions

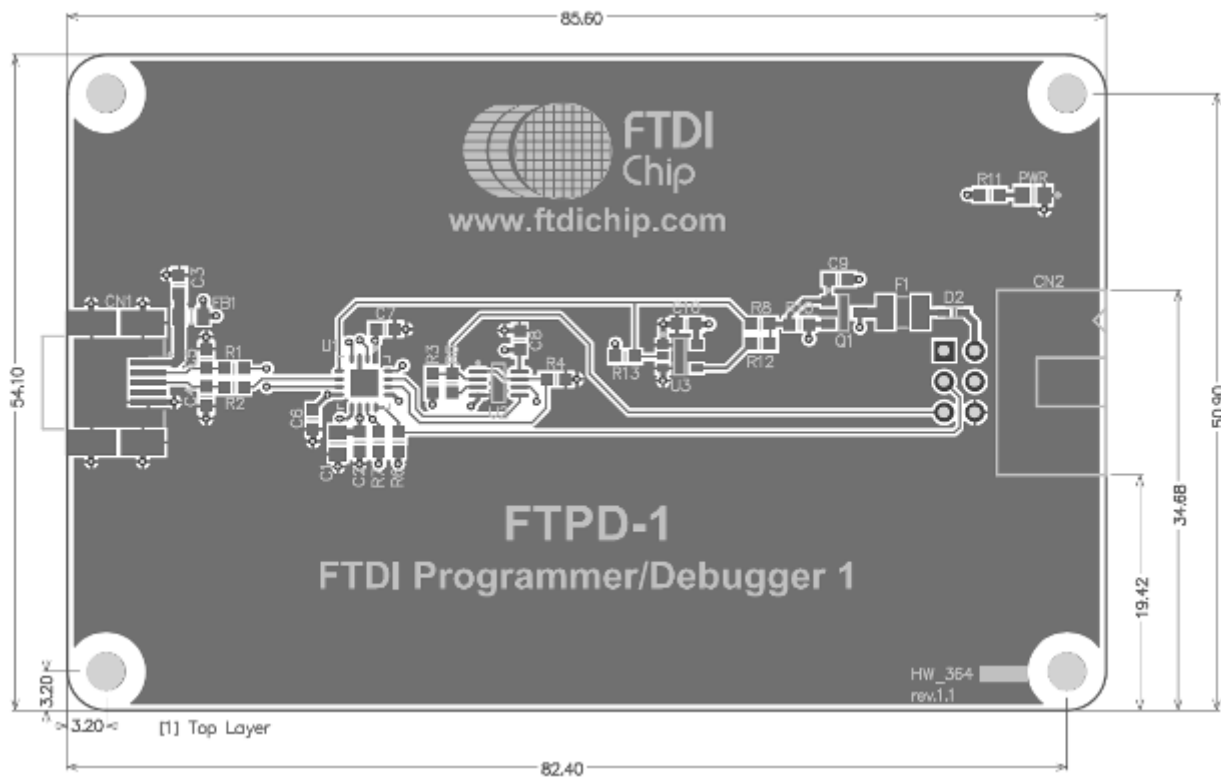
Pin No.	Name	Type	Description
CN2-1	NC	Not Connected	Floating pin.
CN2-2	VSW	Power Out	5 volt power output. Outputs power sources from the USB bus when the FT230X has enumerated.
CN2-3	RESET#	Signal Output	Active low reset output.
CN2-4	PROG#	Signal Output	Active low PROG# output..
CN2-5	DBG	Signal Input/output	Half-duplex UART data pin.
CN2-6	GND	Ground	0V Ground.

**Table 1 - Module Pin Out Description**

Pin No.	Name	Type	Description
CN1-1	VBUS	Power	5 volt power input.
CN1-2	DM	Signal Input/Output	USB Data - from upstream device
CN1-3	DP	Signal Input/Output	USB Data + from upstream device
CN1-4	GND	Ground	0 volt ground.

**Table 2 - Upstream USB Port Pin Out Description**

## 5 Module Dimensions



**Figure 2 – FTPD-1 Module Dimensions**

All dimensions are given in millimetres.

The FTPD-1 module exclusively uses lead free components, and is fully compliant with European Union directive 2002/95/EC.





## 7 Hardware Setup Guide

The FTPD-1 is designed to be used with FTDI's microcontroller chips for firmware programming and debugging purposes. It allows direct connection with FT51A modules such as UMFT51A-EVM and UMFT51AA, with the 6-way ribbon cable assembly provided in the package.

### 7.1 Connecting to MCU board



Figure 4 - FTPD-1 connection to UMFT51A-EVM

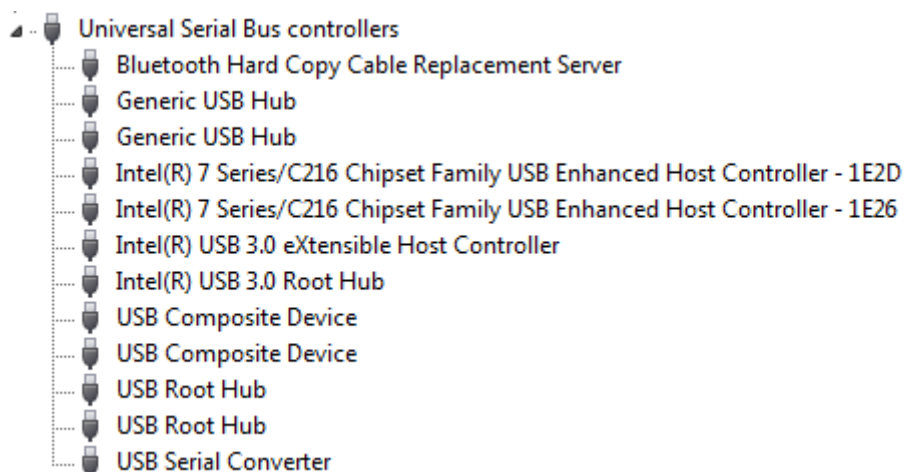


**Figure 5 - FTPD-1 connection to UMFT51AA-1**

## 7.2 Connecting to PC

The FTPD-1 has a mini-USB connector for the host connection. The first time the FTPD-1 module is connected to a Windows PC, the USB device drivers need to install. This should happen automatically if the PC is connected to the internet. Alternatively users can download the D2XX driver from the [FTDI website](#) and install the driver manually.

Successful installation will result in a new device appearing in the Device manager under universal Serial Bus Controllers



**Figure 6 - FTPD-1 successful driver installation**

It is labelled "USB Serial Converter" – the text coming from the driver file.

## 8 Contact Information

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<http://ftdichip.com>

### Distributor and Sales Representatives

Please visit the Sales Network page of the [FTDI Web site](#) for the contact details of our distributor(s) and sales representative(s) in your country.

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## Appendix B – Revision History

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Revision	Changes	Date
Version 1.0	Initial Release	2015-12-07

## Revision History

Revision history (internal use only, please clearly state all changes here before saving the file)

Revision	Date YYYY-MM-DD	Changes	Editor
Draft	2014-07-14	Initial Datasheet Created	John Quinn
1.0	2015-11-04	Reviewed with edits, more edits required	G Lunn
1.0	2015-11-09	Added Chapter 7 hardware Setup Guide. Other minor edits.	D Wang
1.0	2015-11-09	Reviewed. Some changes and comments added. Old document template.	D Paterson
1.0	2015-11-11	Updated to comment.	D Wang
1.0	2015-11-12	Assuming everyone is happy with the reference to VNC2. (personally would not) then the doc is recommended for approval	G Lunn
1.0	2015-11-16	Changed FT231X to FT230X	D Wang
1.0	2015-11-18	Deleted all reference to Vinculum after discussion with R&D Recommend for approval	G Lunn
1.0	2015-12-07	Approved LCE	L Subramanian