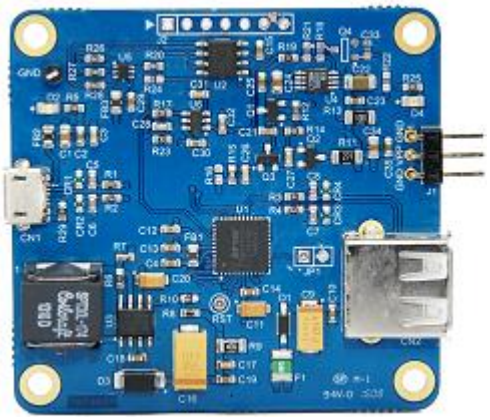
Future Technology Devices International

UMFTPD3A Datasheet

Universal programming Module



UMFTPD3A is a universal programming module for OTP memory and eFUSE programming.

1 Introduction

The UMFTPD3A Universal Programmer Module is used to provide an external programming voltage (Vpp) that covers 1.5 to 6.5V to program FTDI development modules and ICs with internal OTP memory or eFUSE (electrical poly-fuse).

The embedded OTP memory or eFUSE in the FTDI chips is used to store USB Vendor ID (VID), Product ID (PID), device serial number, product description string and chip configuration information. Users can store this vendor specific information in the OTP or eFUSE and save the cost of an external EEPROM from the BOM.

The UMFTPD3A assists the user in programming the OTP memory or eFUSE directly through a USB host controller with FTDI's programming software tool, FT_Prog.

1.1 Features

The UMFTPD3A has the following features:

- Micro USB-B connector allows the UMFTPD3A to be connected to a host system via a standard USB A to Micro B cable.
- Downstream port using USB-A type connector allows target devices to be connected to the UMFTPD3A.
- On board FTDI chip provides USB hub function
- Supports wide programming voltages from 1.5V to 6.5V for FT260 and FT4222H series.
- 3 pin connector to deliver VPP programming power
- Visual indicator for VPP programming voltage and USB bus power by using LEDs.
- USB2.0 Full Speed compatible.

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2 Driver Support

Royalty free D2XX Direct 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 above listed drivers are all available for download from http://www.ftdichip.com/FTDrivers.htm.

For driver installation instructions, refer to
http://www.ftdichip.com/Support/Documents/InstallGuides.htm

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3 Ordering Information

Module Code	Description
UMFTPD3A	Universal FTDI programmer module

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4 UMFTPD3A Signals

4.1 UMFTPD3A Pin Out and connectors

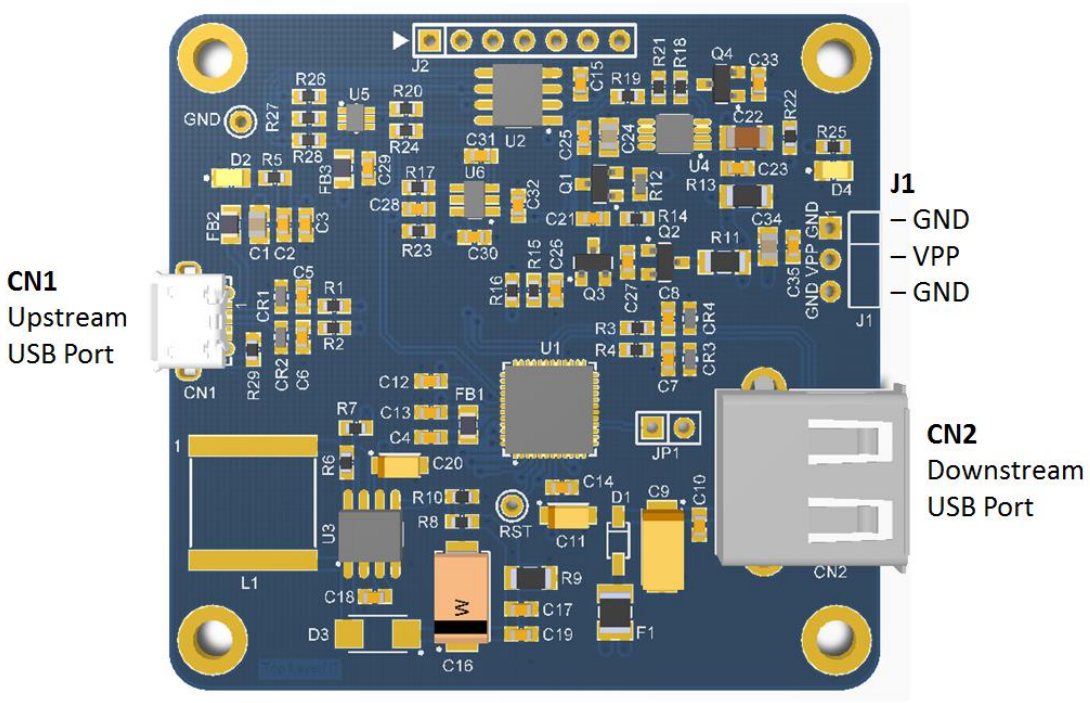


Figure 4.1 Module Pin Out and connectors

4.2 J1 Signal Descriptions

Connector Pin	Name	Type	Description
J1-1	GND	Ground	Ground 0 volts.
J1-2	VPP	Power	Programming voltage output
J1-3	GND	Ground	Ground 0 volts.

Table 4.1 J1 Pin Out Description

4.3 USB Connectors Descriptions

UMFTPD3A provides two USB connectors:

Connector No.	Description
CN1	Upstream USB port connect to the USB Host
CN2	Downstream USB port connect to the device under programming

Table 4.2 USB connectors Description

4.4 LED Descriptions

There are two LED indicators on the UMFTPD3A:

LED No.	Description
D2	USB VBUS Supply from Upstream Port
D4	VPP Power Supply

Table 4.3 LED Description

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5 Hardware Setup Guide

5.1 Module Connect to PC with USB Host

The first time the UMFTPD3A module is connected to a Windows PC, the USB device drivers need to be installed. Windows will install the driver automatically via Windows Update if a network is connected or the driver installation package may be downloaded from the FTDI Website for manual installation.

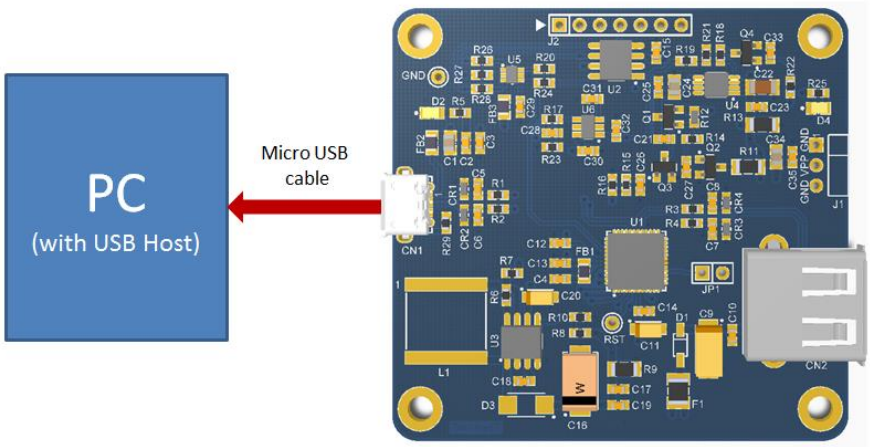


Figure 5.1 Module connected to PC with USB host

5.2 Module Connect to Device under programming

Figure 5.2 shows the connection between a UMFTPD3A and a target device with an FTDI chip. The UMFTPD3A is designed to control VPP power output for programming the OTP memory or eFUSE on the target board with an FTDI chip.

VPP power is supplied through the 3 pin header with 2.54mm pitch, J1.

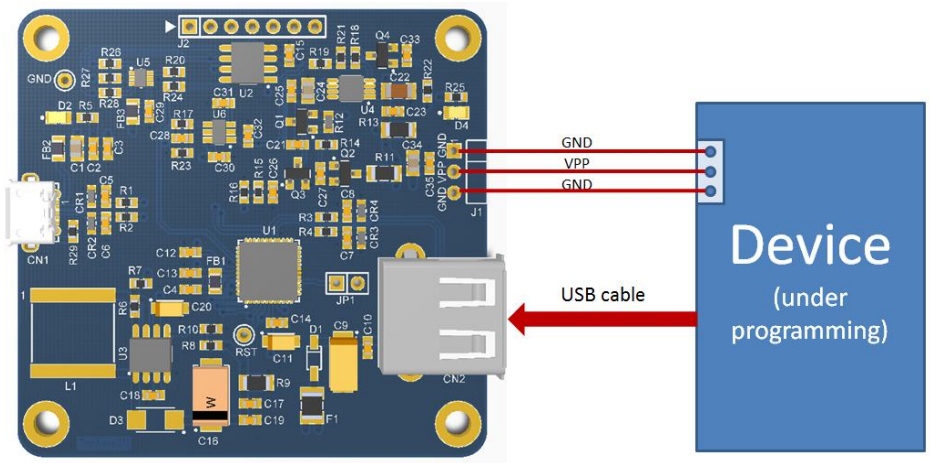


Figure 5.2 Module connected to device under programming

Warning: The programming connector definition may differ between FTDI development modules and 3rd party design. Please check FTDI development module datasheet or documentation for 3rd party designs before wiring the VPP connection.

Warning: The UMFTPD3A is only allowed to connect and program one FTDI chip at a time.

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5.3 FT_PROG Programming Utility

Having connected the UMFTPD3A module, the user can perform the OTP memory or eFUSE programming with the FT_PROG utility. The FT_PROG will detect the ICs via USB and configure the UMFTPD3A programing voltage by itself. FT_PROG is a free programming utility for use with FTDI devices. For more details, refer to the FTDI website.

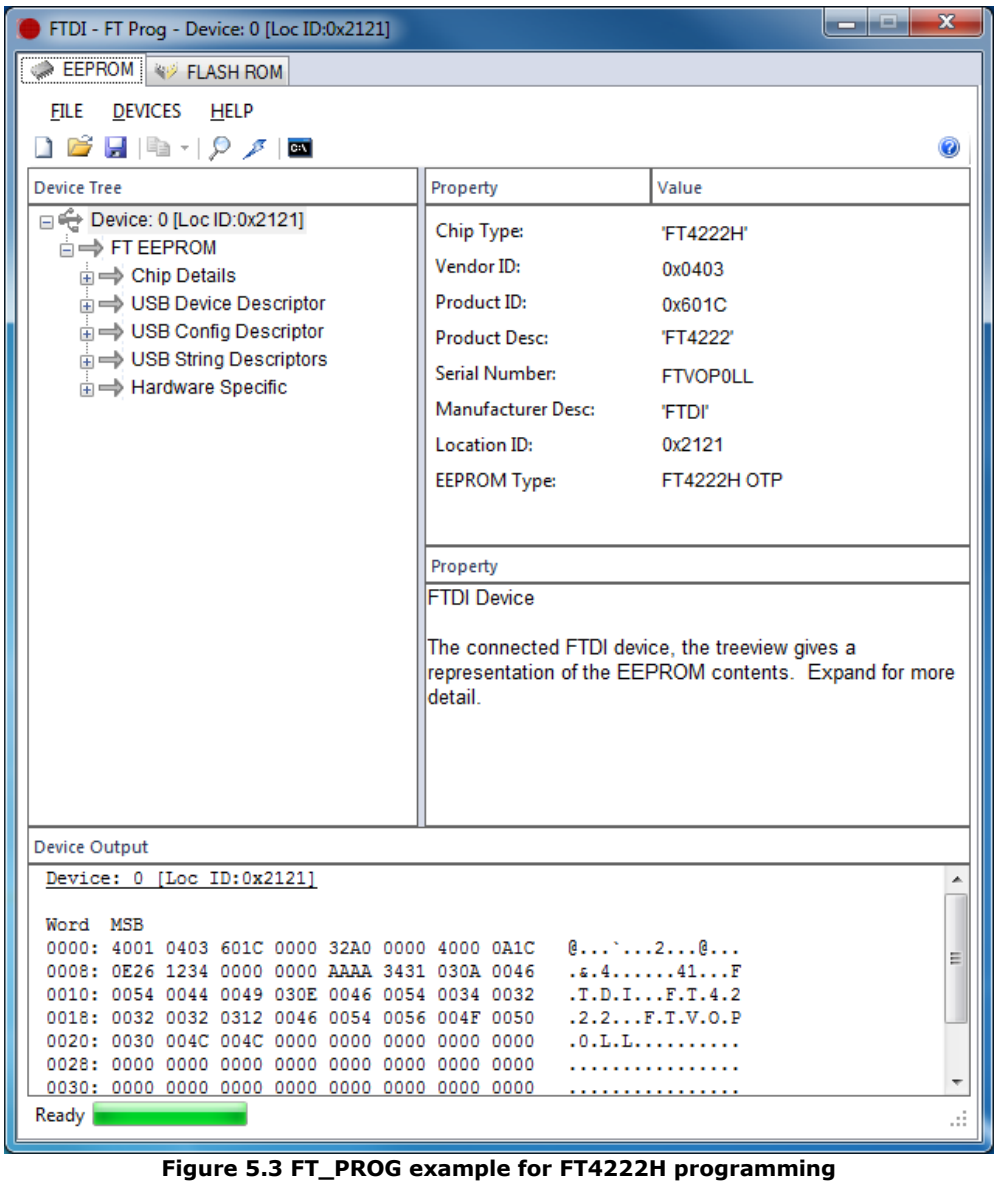


Figure 5.3 FT_PROG example for FT4222H programming

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6 Support Chips List

The FTDI Chips compatible with UMFTPD3A are listed below.

FTDI Chip	Memory Type	Programming voltage	Development Module
FT4222H	OTP	6.5V	UMFT4222EV
FT260	eFUSE	3.8V	UMFT260EV1A

Table 6.1 Compatible Devices list

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7 Module Dimensions

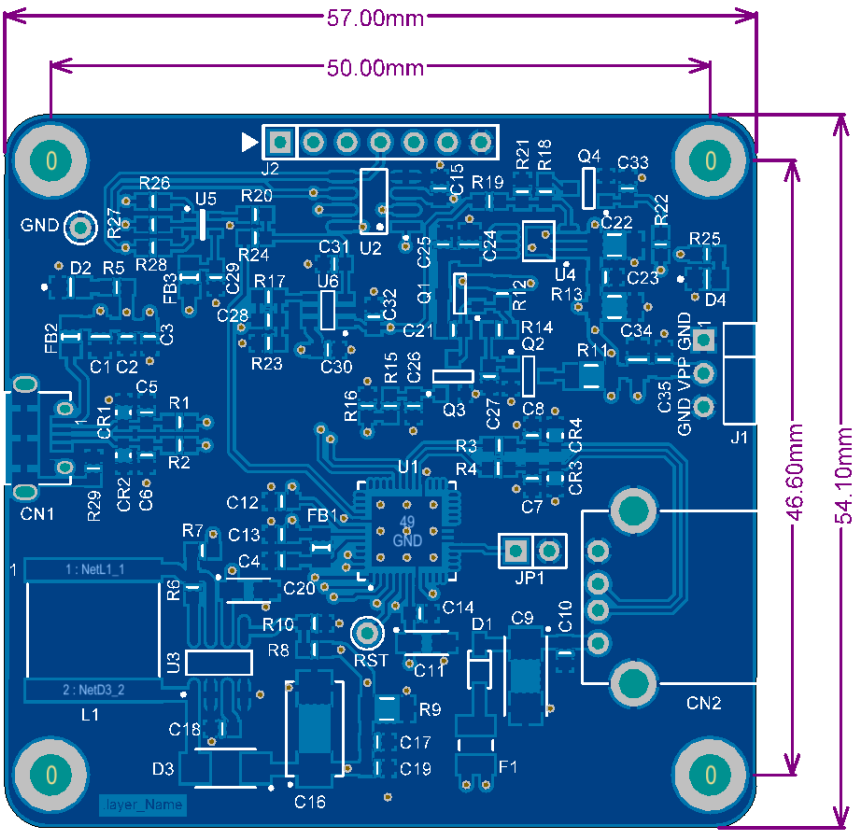


Figure 7.1 UMFTPD3A Module Dimensions

All dimensions are given in millimetres.

The UMFTPD3A module exclusively uses lead free components, and is fully compliant with European Union directive 2002/95/EC.

8 UMFTPD3A Module Circuit Schematic

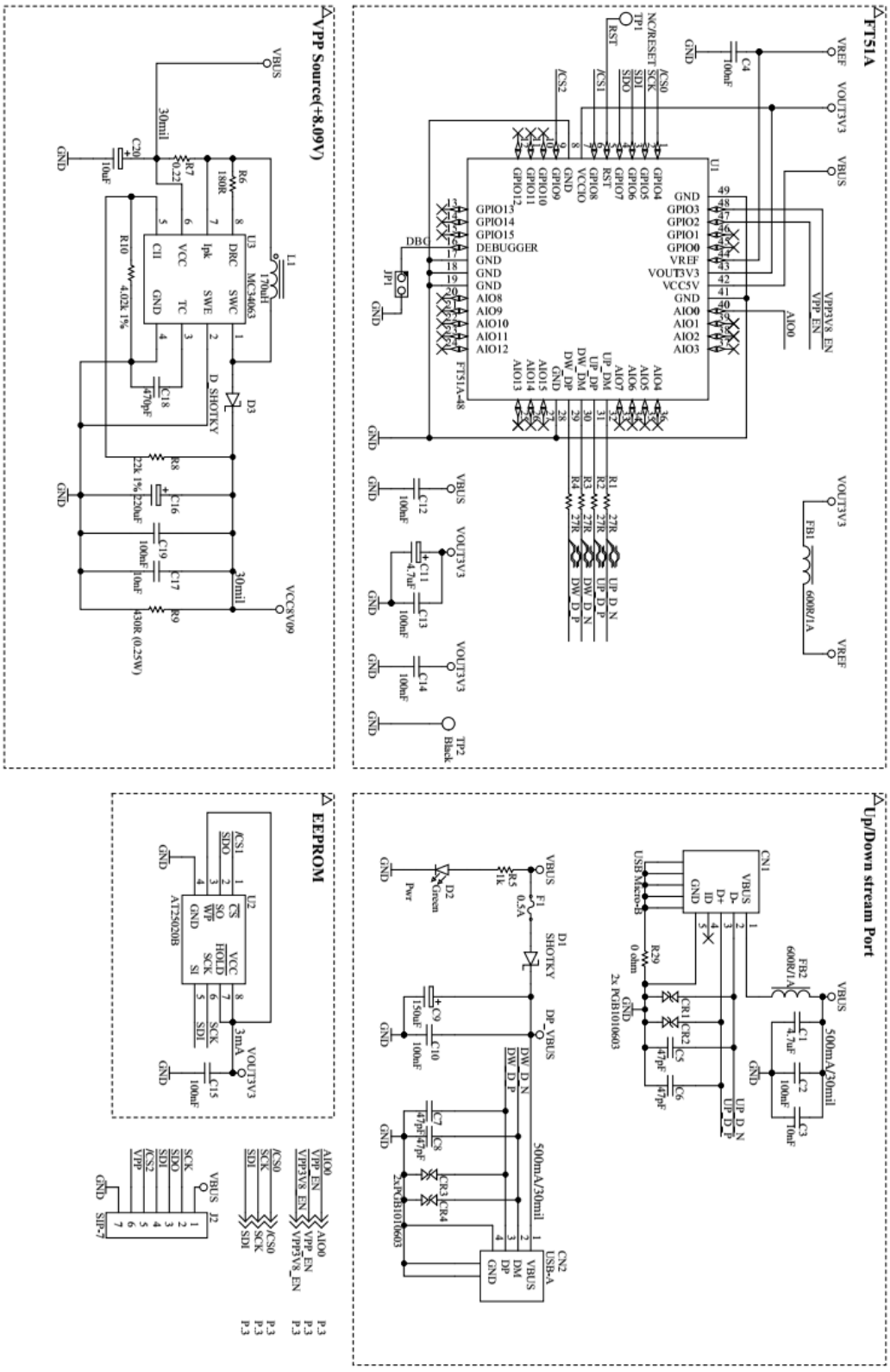


Figure 8.1 Module Circuit Schematic

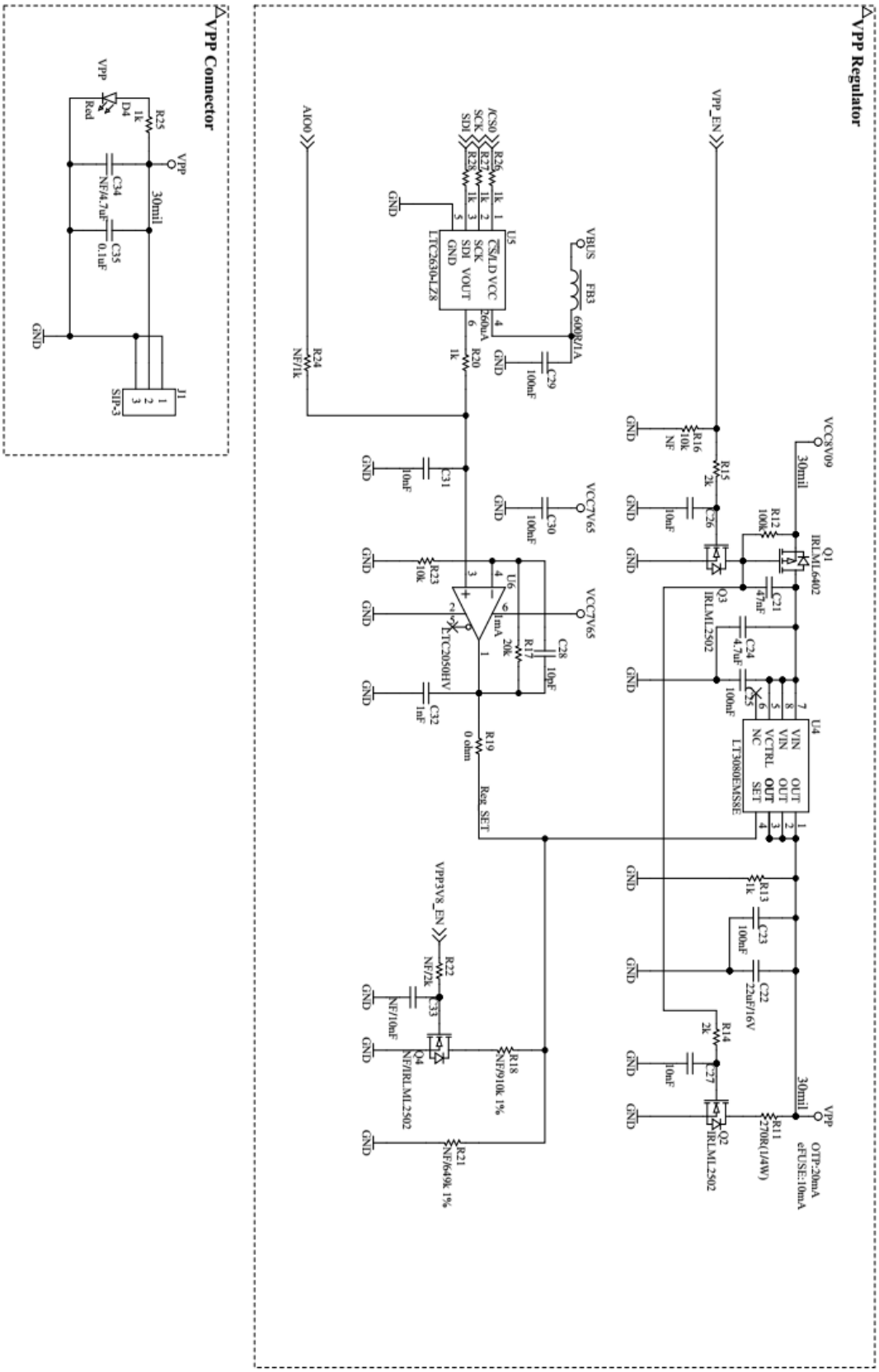


Figure 8.2 Module Circuit Schematic (Cont'd)

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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 A – References

Document References

Application Notes

AN_124 User Guide for FTDI FT_Prog Utility

Datasheets

DS_FT4222H

DS_UMFT4222EV

DS_FT260

DS_UMFT260EV

FT_PROG Utility

http://www.ftdichip.com/Support/Utilities.htm#FT_Prog

Acronyms and Abbreviations

Terms	Description
eFUSE	Electrical poly fuse
OTP	One Time Programming
USB	Universal Serial Bus

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Appendix C – Revision History

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