FTDI Chip UMFT4222PROG-IC FT4222 Programmer Module

1 Introduction

The UMFT4222PROG-IC Programmer Module has been developed to aid programming OTP memory in the FT4222H.

The internal OTP memory in the FT4222H is used to store USB Vendor ID (VID), Product ID (PID), device serial number, product description string and various other USB configuration descriptors.

The UMFT4222PROG-IC Programmer Module is designed with the FTDI FT51. The FT51 downstream USB port is connected to the FT4222H programming socket.

The user places the FT4222H DUT in the socket, starts the programming application on the host PC which controls the main power and the OTP program power to the FT4222H. When the FT4222H is programmed and verified, the application turns off the main power and OTP programming power for safe removal of the FT4222H from the socket.

1.1 Features

- USB2.0 Full Speed compatible,

- Standard USB MicroB receptacle.

- Single USB power input, built-in DC-DC converter for 6.5 V OTP programming power and main operation power supply.

- Quick and easy F4222H OTP data production programming – drop in the FT4222H IC to be programmed, the application controls the power supplies, programming and power off automatically.

- Visual indicator for 6.5V programming voltage and USB bus power using LEDs

2 Module Information

2.1 Driver Support

- Microsoft Windows 10 and 10 - 64-bit

- Microsoft Windows 8.1 and 8.1 - 64-bit

- Microsoft Windows 8 and 8 - 64-bit

- Microsoft Windows 7 and Windows 7 64-bit

The drivers listed above are all available to download for free from:
http://www.ftdichip.com/Drivers/D2XX.htm

2.2 Ordering Information

The following **Error! Not a valid bookmark self-reference.** gives details of the available UMFT4222PROG-IC products

Part Number	Description
UMFT4222PROG-IC-B	FT4222H OTP memory programming module rev B

Table 2-1 UMFT4222 Product Descriptions and Part Numbers

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3 Function Description

The UMFT4222 Programmer IC Module (UMFT4222PROG-IC) is designed for production programming the FT4222H OTP memory. This module is designed with the FTDI FT51 chip. The FT51 built-in hub downstream port connects the FT4222H DUT to the host PC, while the FT51 built-in USB function manages the functional and OTP programming power (VPP) supplies to the FT4222H socket.

The operation to program the FT4222H with UMFT4222PROG-IC is as follows:

- Connect the module to the host PC - the UMFT4222H-IC is in standby mode and the power switch is turned off.
- Place a FT4222H DUT in the socket
- Close the socket cover.
- Run the free FTDI programming utility, FT_PROG, to update the FT4222H OTP data.

When FT_PROG finished the FT4222H OTP programming, the switch power should be turned off and restart a new IC programming.

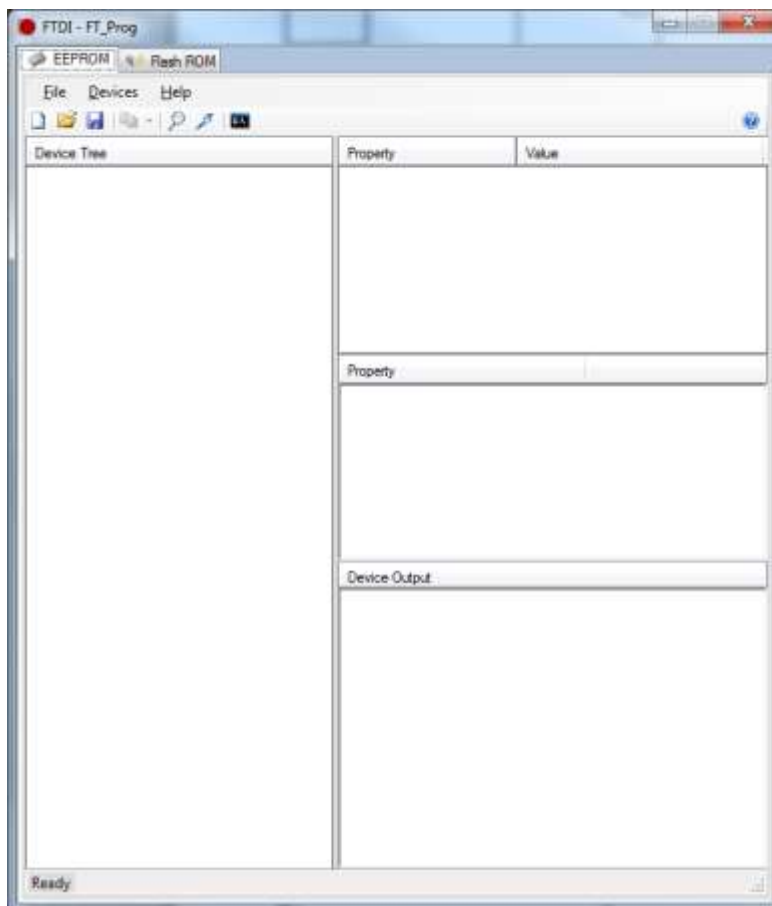For more details about FT_PROG, please refer to the utilities section of the [FTDI website](#).

Figure 3-1 UMFT4222PROG-IC connection example

3.1 Connection with UMFT4222PROG-IC

The FT4222H supports +5V to +3.3V output from an integrated LDO regulator.
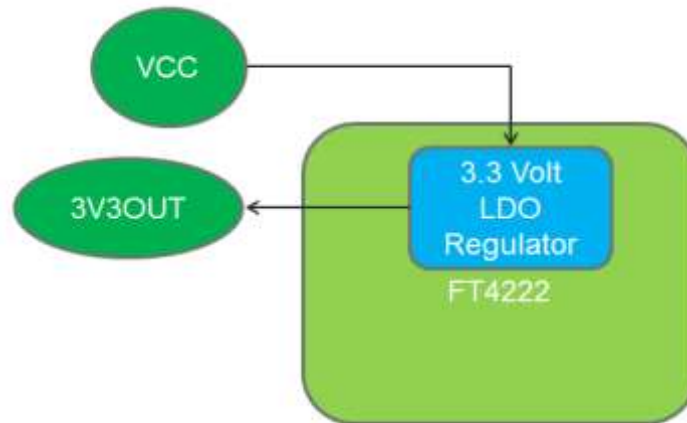

Figure 3-2 Example Function block of FT4222H integrated LDO regulator

3.2 LED Indicators

The UMFT4222PROG-IC programmer has 1 LED. Table 3.1 describes the function of the LEDs.

LED NAME	Color	LED OFF	LED ON
D2	Red	No indication	Burn in user data to FT4222 OTP block.

Table 3-1 UMFT4222PROG-IC LED Indication

4 UMFT4222PROG-IC module connection and Mechanical Details

The following

Figure 4-1 UMFT4222PROG-IC module **layout** shows the UMFT4222PROG-IC module layout. The module dimensions are 76.42mm x 44.48mm.
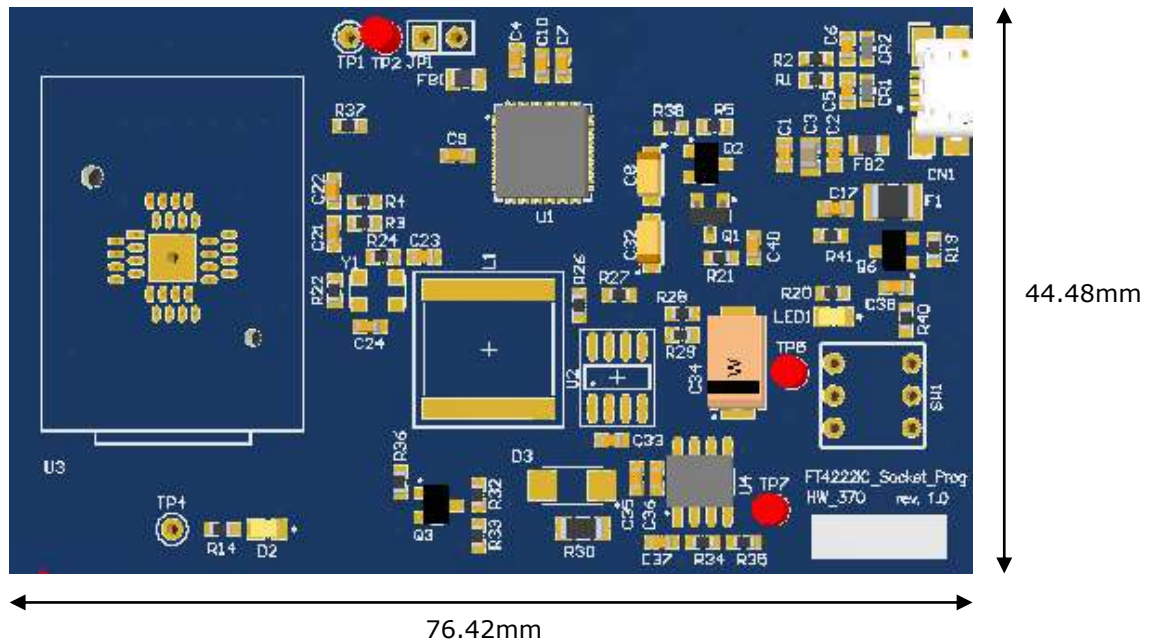

Figure 4-1 UMFT4222PROG-IC module layout

The following Table 4-1 UMFT4222PROG shows the module signals for these signals on the UMFT4222PROG-IC module.

Pin No.	Name	Type	Description
SW1	VBUS	PWR	Control U3 Main Power
TP5	DP_VBUS	PWR	Support U3 Main Power
TP1,TP7	GND	PWR	Ground
TP4	VPP	PWR	6.5V Voltage supply

Table 4-1 UMFT4222PROG module Connections (numbers refer to pad numbers on the PCB)

5 Module PCB Circuit Schematic

The circuit schematics for the small electronic board, utilising the FTDI FT51, are shown in **Error! Reference source not found.**.
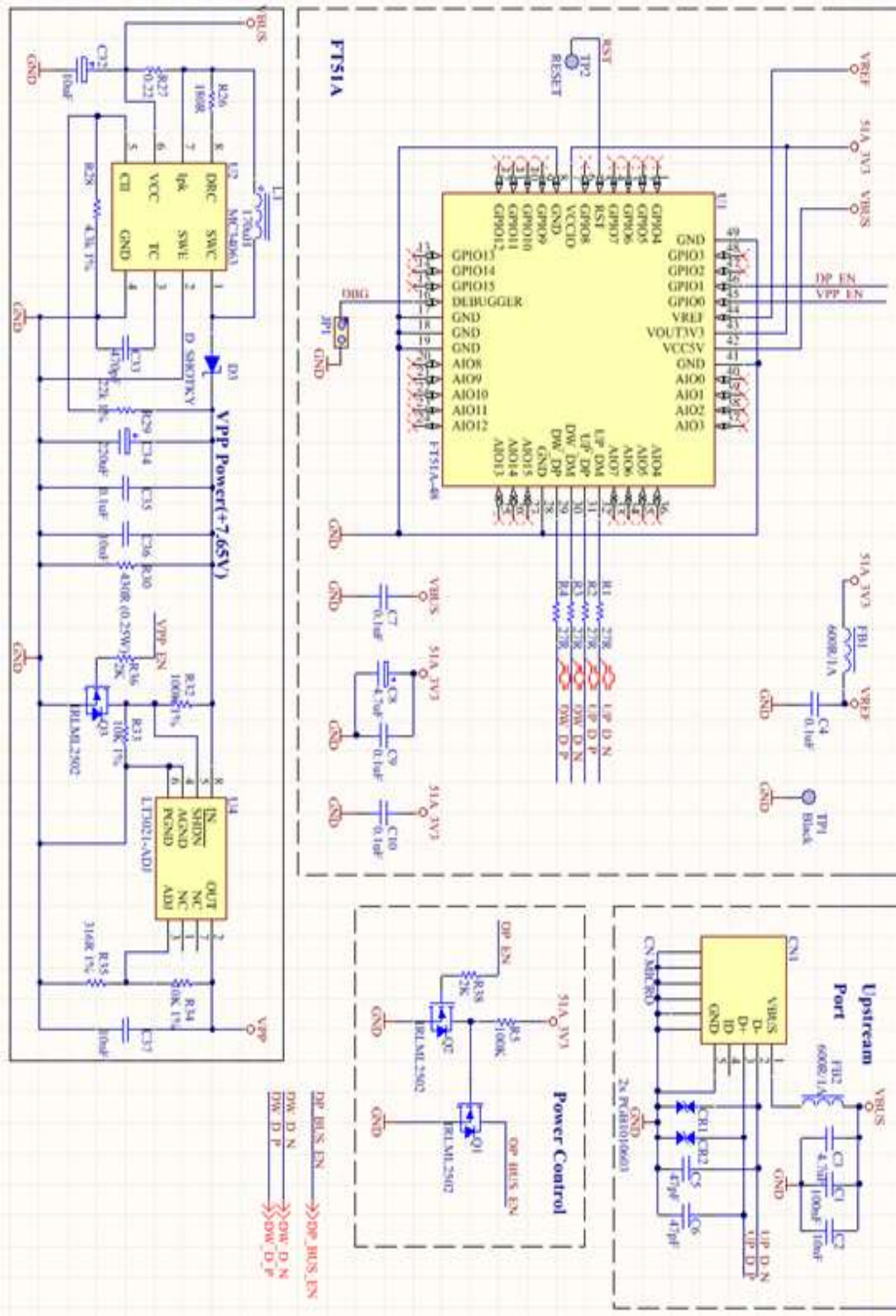
Figure 5-1 Circuit Schematic of UMFT4222PROG-IC
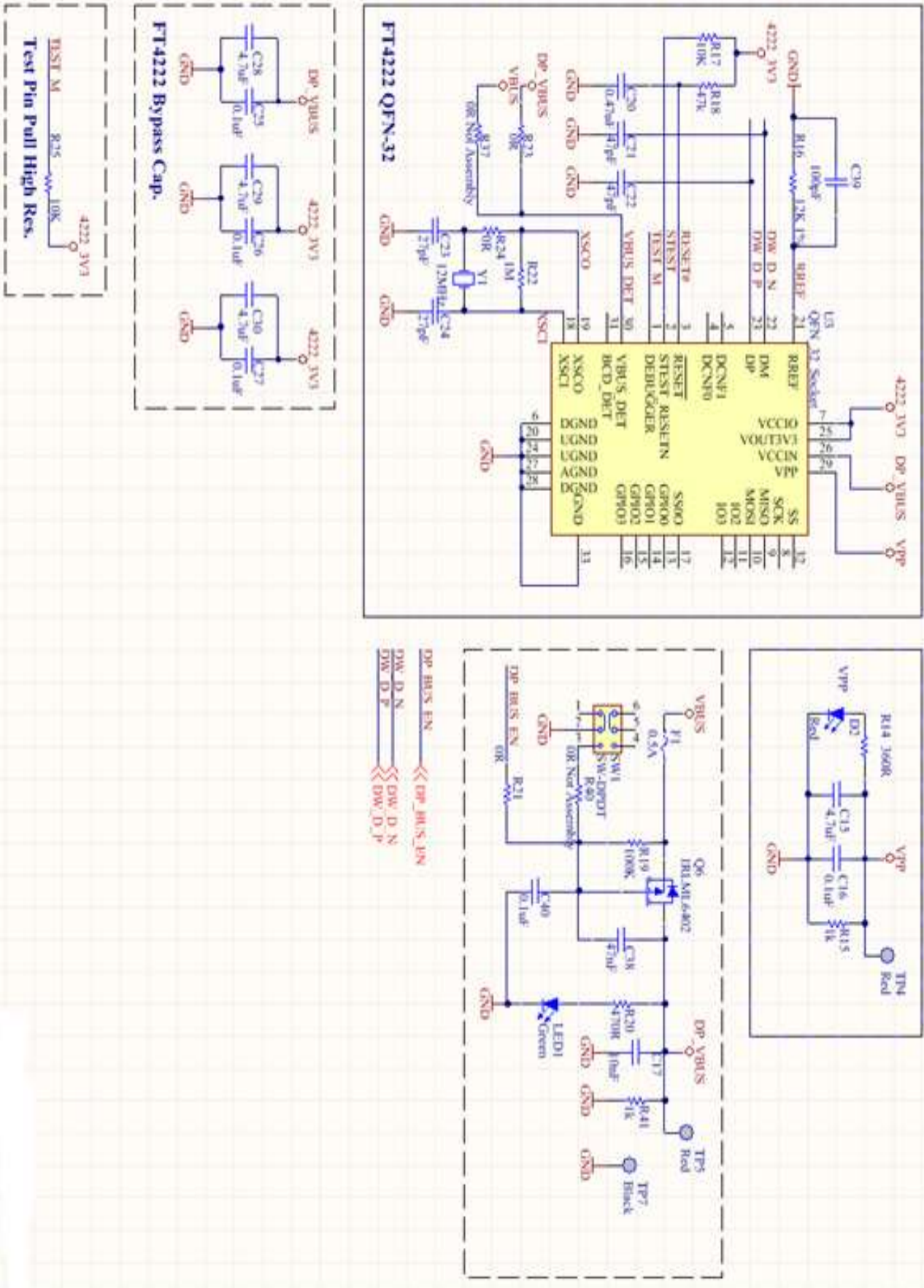
Figure 5-2 Circuit Schematic of UMFT4222PROG-IC

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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.

Appendix A – References

Document References

[FT4222H Datasheet](#)

Acronyms and Abbreviations

Terms	Description
DUT	Device Under Test
IC	Integrated Circuit
LED	Light Emitting Diode
OTP	One Time Programmable
USB	Universal Serial Bus

Appendix B –List of Figures and Tables

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