

# UMFT4222PROG

## FT4222

### Programmer Module



## 1 Introduction

The UMFT4222PROG FT4222H Programmer Module is used to program OTP memory on a UMFT4222EV or devices with a 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. With this embedded OTP memory, the device can store vendor specific information and save the cost on BOM.

The 4 pin connector on the module connects directly to the FTDI UMFT4222EV. The UMFT4222PROG allows the user to program the UMFT4222EV OTP memory from a USB host controller.

### 1.1 Features

- USB2.0 Full Speed compatible
- USB bus powered
- USB Type B micro connector for connecting to a PC
- USB Type A connector for connecting to a UMFT4222EV or a device with a FT4222H
- On board FTDI chip provides USB hub function
- Visual indicator for 6.5V programming voltage and USB bus power using LEDs

## 2 Applications

- UMFT4222EV OTP Memory programming
- OTP Memory programming on custom device with FT4222H

### 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 UMFT4222 Products.

Part Number	Description
UMFT4222PROG	FT4222H OTP memory programming module
UMFT4222EV	FT4222H evaluation module.
UMFT4222EV-B	FT4222H evaluation module with B version chip.

**Table 2-1 UMFT4222 Products Descriptions and Part Numbers**

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### 3 Function Description

The FT4222H Programmer Module (UMFT4222PROG) is designed to control VPP power output (+6.5V) for programming the FT4222H OTP memory on the UMFT4222EV module or custom device with a FT4222H. This module is USB bus-powered and includes a USB 2.0 compliant full speed hub device. The VPP power is provided from the USB upstream port.

VPP power is supplied through 2 pins of the 2.54mm pitch header, JP1. There are two USB connectors: 1) CN1: USB Type B micro receptacle to a PC, 2) CN2: USB Type A receptacle to a UMFT4222EV or custom FT4222H device.

Having connected the UMFT4222PROG module, the user can perform the OTP memory programming with FT\_PROG software. FT\_PROG is a free programming utility for use with FTDI devices. For more details, please refer to the [FTDI website](http://www.ftdi.com).

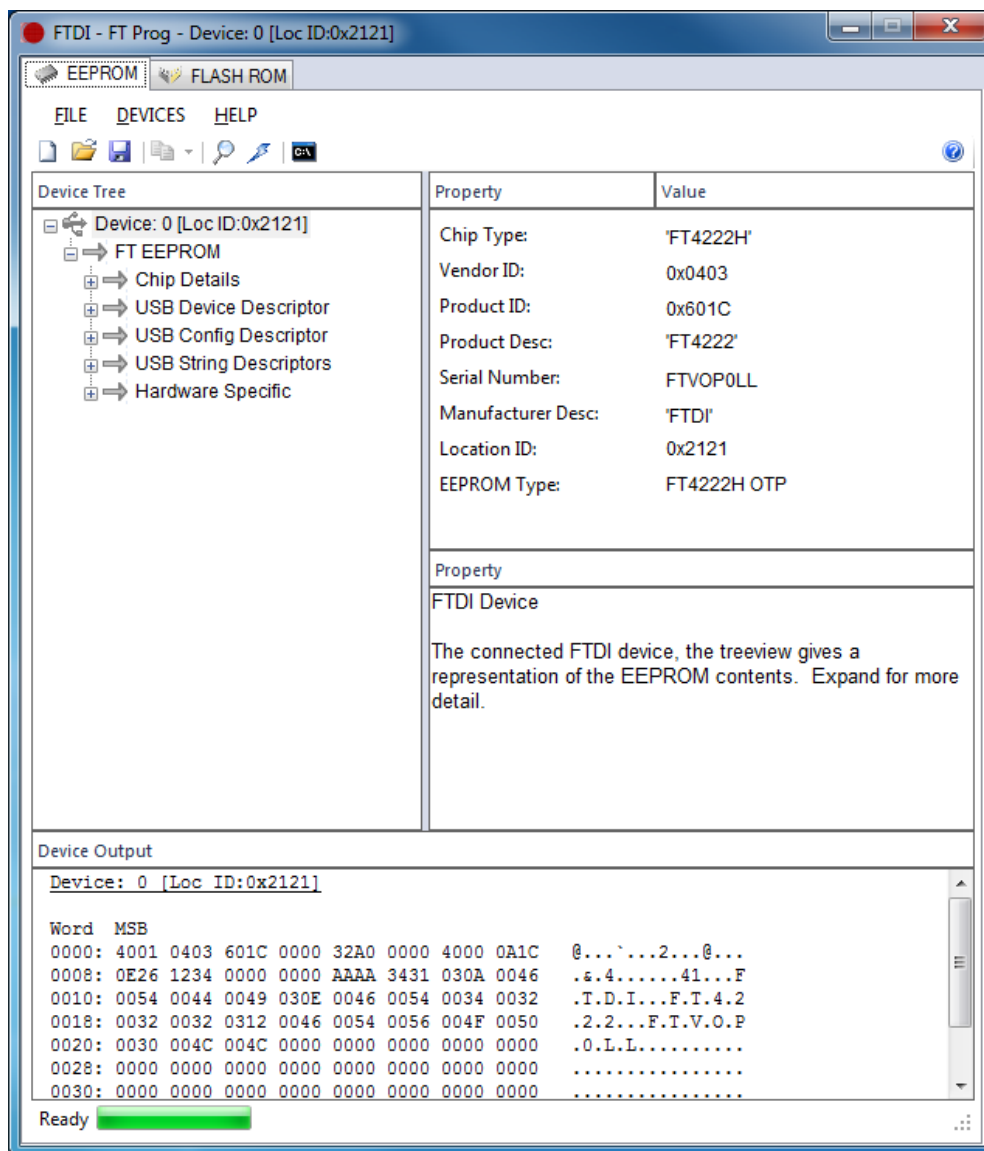


Figure 3-1 UMFT4222PROG connection example

### 3.1 Connection with UMFT4222EV

The UMFT4222EV module has a 4-pin (populated at pin 3 and 4 positions), 2.54mm pitch male connector JP1 for connecting to the UMFT4222PROG JP1. The details of connect configuration are listed below.

1. UMFT4222PROG JP1 Pin3 to UMFT4222PROG JP1 Pin3
2. UMFT4222PROG JP1 Pin4 to UMFT4222PROG JP1 Pin4
3. UMFT4222PROG CN2 to UMFT4222EV CN1
4. UMFT4222PROG CN1 to PC

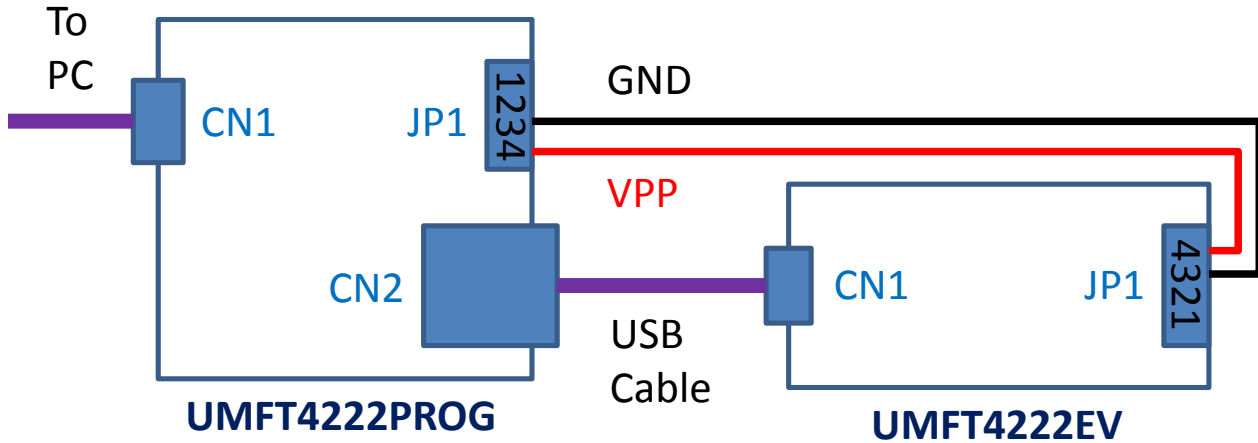


Figure 3-2 Example connection of UMFT4222PROG to UMFT4222EV

### 3.2 Connection with Custom FT4222H design

Custom designs using the FT4222H hardware, should expose a VPP and GND pin on the design PCB for OTP memory programming if required. The details of connect configuration are listed below.

1. UMFT4222PROG JP1 Pin3 to FT4222H GND Pin
2. UMFT4222PROG JP1 Pin4 to FT4222H VPP Pin
3. UMFT4222PROG CN2 to FT4222H USB D+/D-
4. UMFT4222PROG CN1 to PC

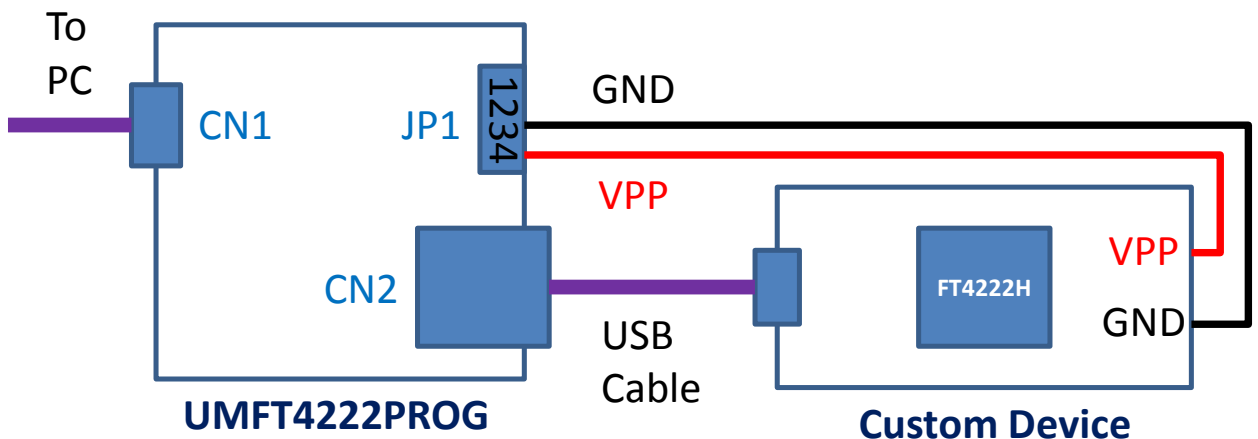
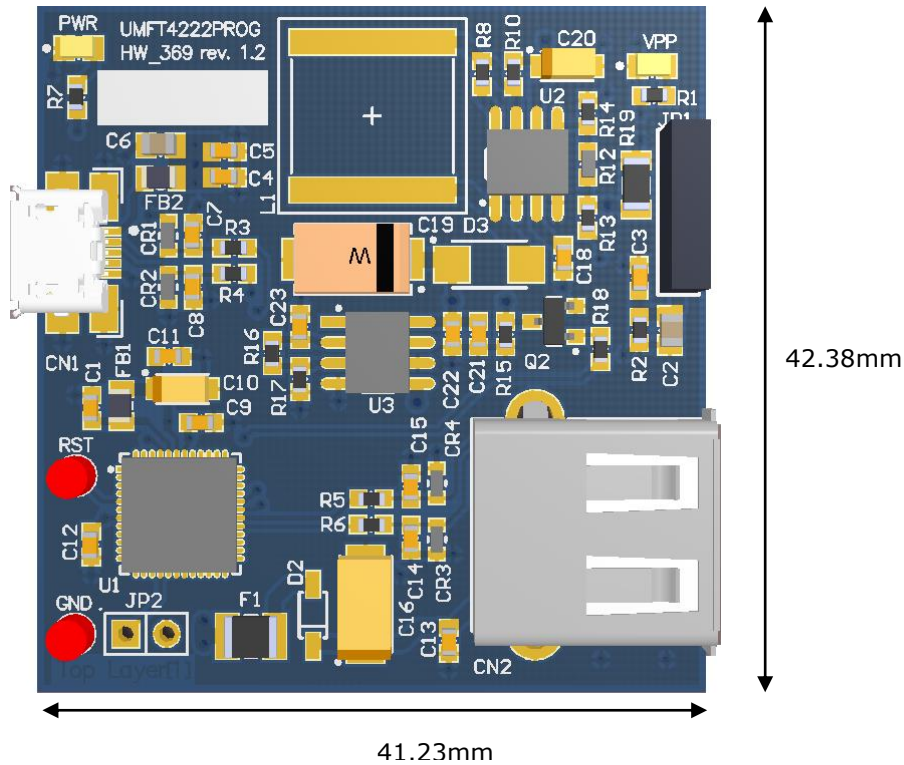


Figure 3-3 UMFT4222PROG to FT4222H Custom Device

## 4 UMFT4222PROG module connection and Mechanical Details

Figure 4-1, shows the UMFT4222PROG module layout. The module is 42.38mm x 41.23mm dimension.



**Figure 4-1 UMFT4222PROG module layout**

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

Pin No.	Name	Type	Description
JP1-1	No Signal	NA	Not populated on PCB
JP1-2	No Signal	NA	Not populated on PCB
JP1-3	GND	PWR	Ground
JP1-4	VPP	PWR	6.5V Voltage supply

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

The following Table 4-1 shows the USB Connector of UMFT4222PROG module.

Connector No.	Name	Description
CN1	USB upstream port, Micro-B type receptacle	Connect to a PC
CN2	USB downstream port, Standard A type receptacle	Connect to an UMFT4222EV evaluation board.

**Table 4-2 UMFT4222PROG module USB Connectors**

## 5 Module PCB Circuit Schematic

The circuit schematics for the UMFT4222PROG board, are shown in Figure 5-1 .

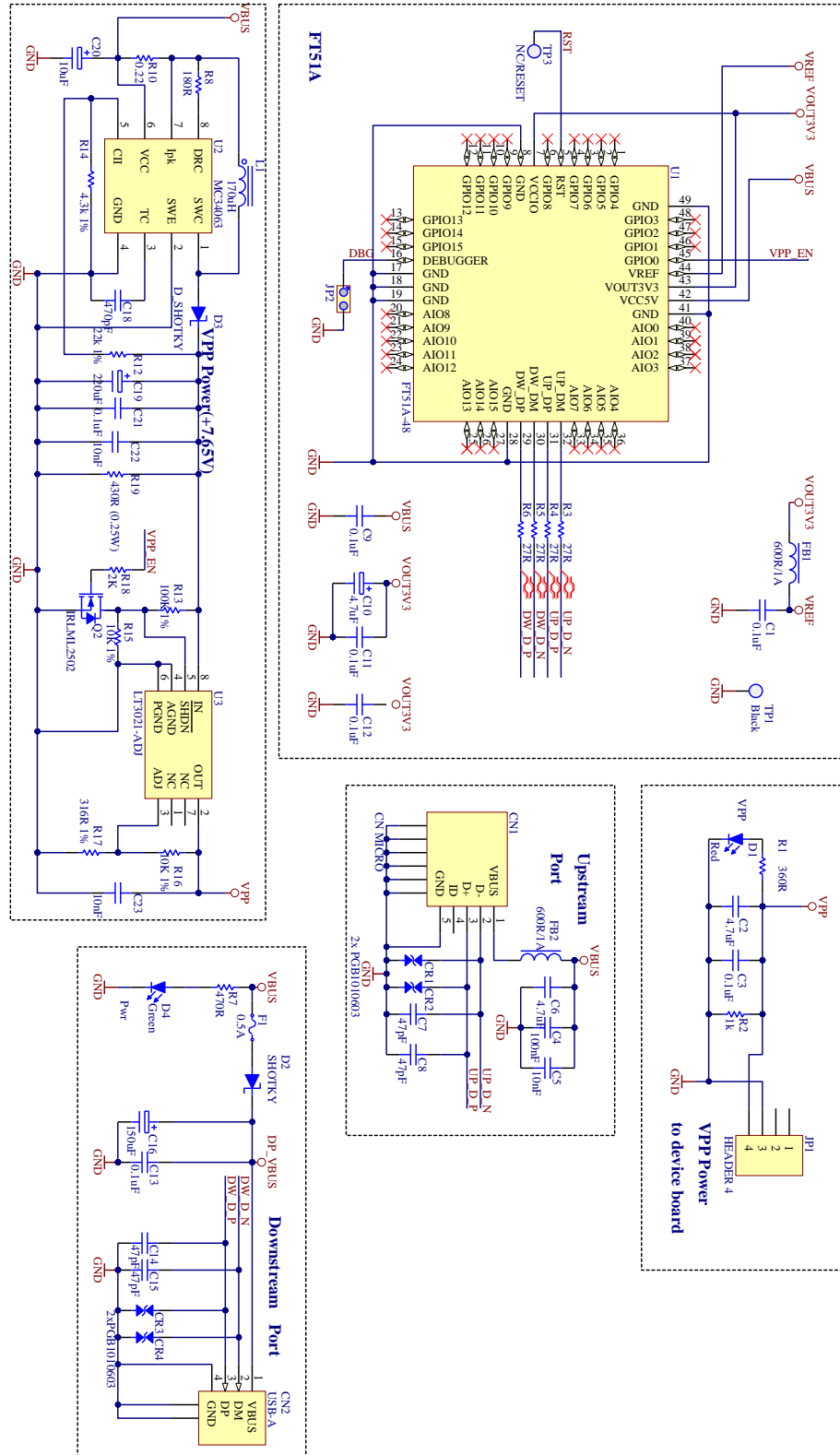


Figure 5-1 Circuit Schematic of UMFT4222PROG

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