



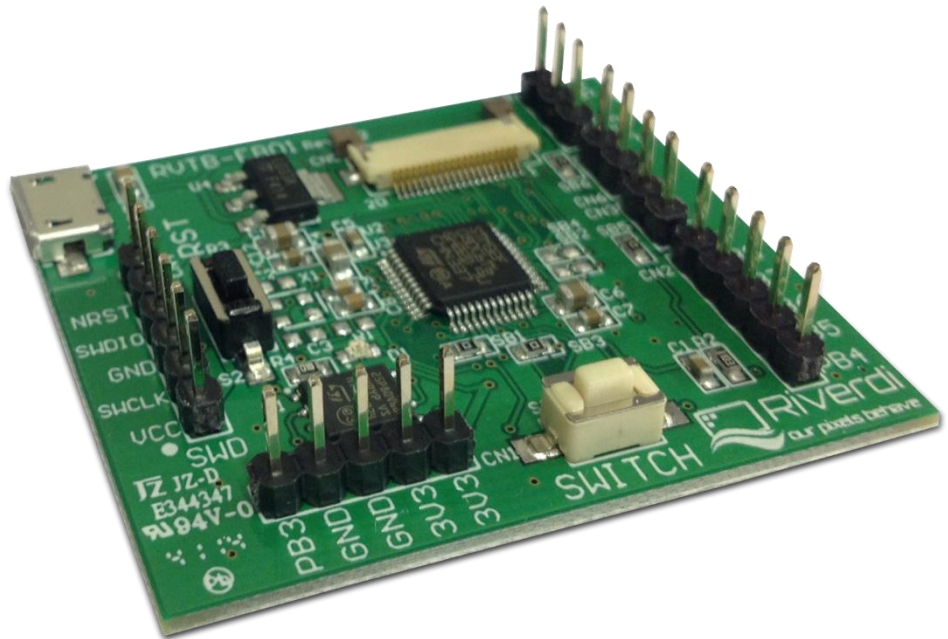
# Revelation Board

## User Manual

Rev.1.1  
2015-02-10

### Introduction

The Revelation board is an evaluation tool which is designed to help to start working with Riverdi TFT panels with FT800 and FT801 controllers. It can also be used as a platform to build your own application. Board is based on STM32F0 family MCU. There is also 8 Mb flash memory on board.





## REVISION RECORD

REVNO.	REVDATE	CONTENTS	REMARKS
1.0	2015-01-30	Initial Release	
1.1	2015-02-10	Add development kit information	

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## 1. QUICK START

Our Revelation Boards are preprogrammed in factory, so to evaluate Riverdi TFT modules with FT800 or FT801 controllers, just follow these steps:

1. Connect TFT module via 20 pin 0.5mm FFC to CN8.
2. Connect micro USB 5V power supply to CN7.
3. Press S1 to choose size and type of evaluated TFT.

Visit [www.riverdi.com/revelation](http://www.riverdi.com/revelation) to download more examples available on Revelation Board.

## 2. DEVELOPMENT KIT SET

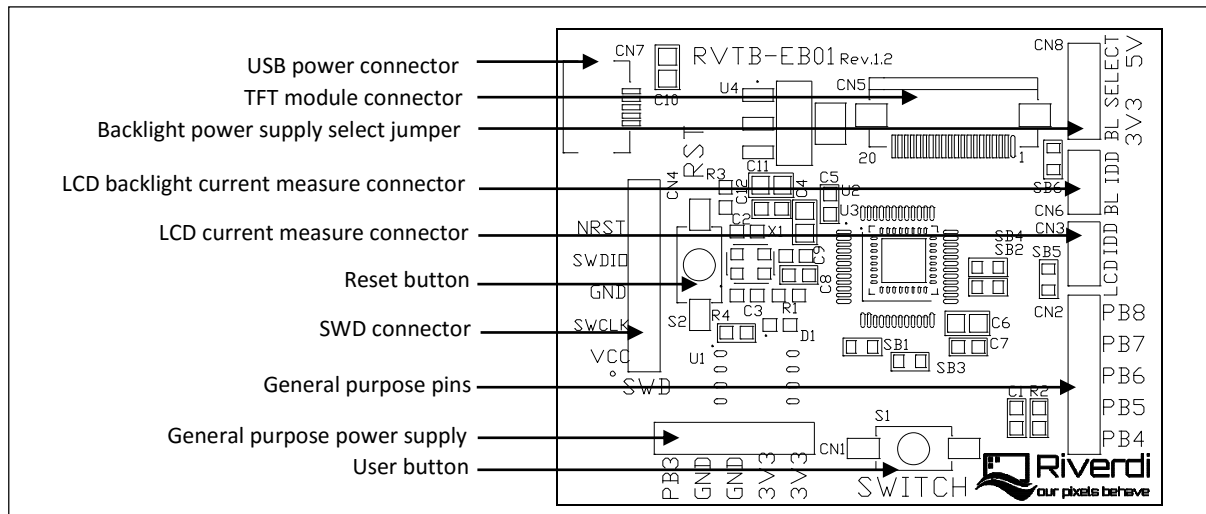
Revelation Board kit contains:

- Revelation Board,
- 20 pin, 0.5mm, 15 cm length FFC
- 1.5 m Micro USB cable

## 3. BOARD DESCRIPTION

Revelation Board is designed using STM32F0 family microcontroller. See STM32F031C6 or STM32F031K6 datasheet for more details. There is also 8 Mb flash memory available on board. This memory can be used to store user's extra graphics. Unused pins of MCU are available on pinheaders. Figure 1 shows Revelation Board significant parts.

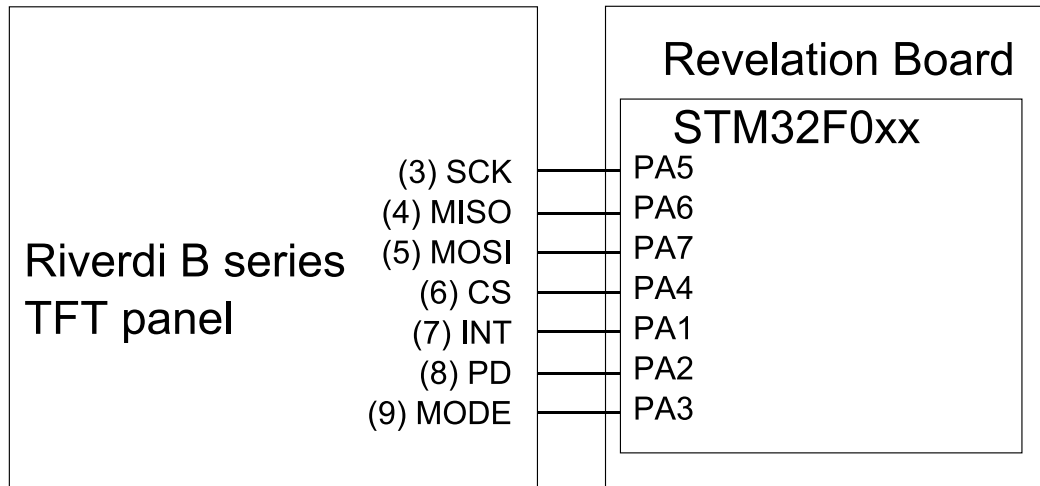
Figure 1. Board layout



### 2.1 TFT connection to MCU

TFT module is connected to MCU using SPI interface (it is also possible to set I2C as a main interface, by changing SB1 – SB4 shorts). Figure 2 shows TFT connection diagram. For more information see Riverdi B-series TFT panels datasheet and STM32F031C6 datasheet.

Figure 2. Connection TFT panel to MCU



## 2.2 Board programming

The Revelation Board is based on STM32F0 family MCU. Board can be programmed using STMicroelectronics ST-Link. There is SWD connector (6-pin male header) on board which pins are described on Table 1. ST-Link is not a part of Revelation Board.

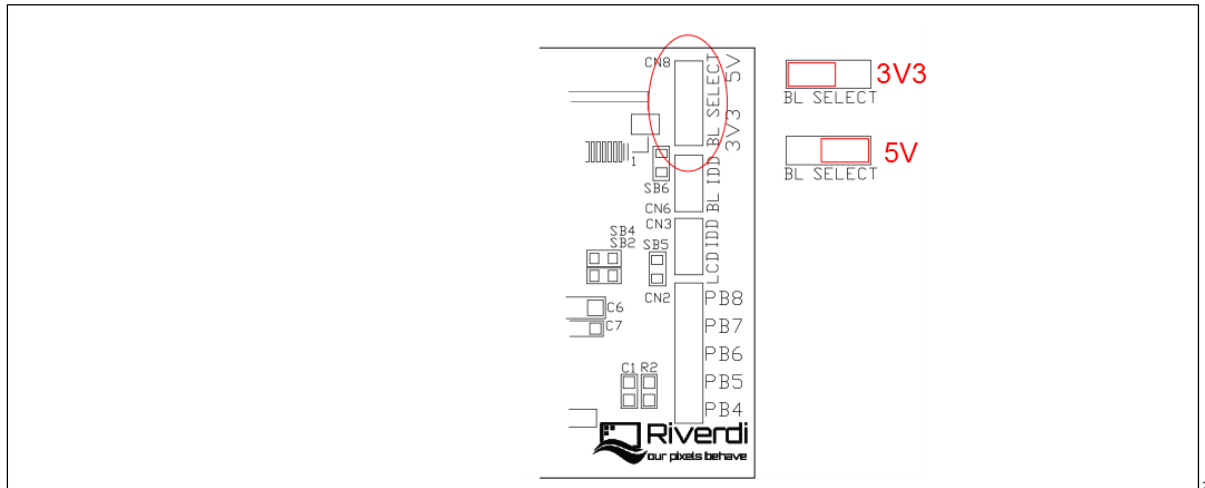
Table 1. CN4 pinout

Pin number (CN4)	Pin name
1	VCC
2	SWCLK
3	GND
4	SWDIO
5	NRST
6	N/C

## 2.3 Power supply and current measurement

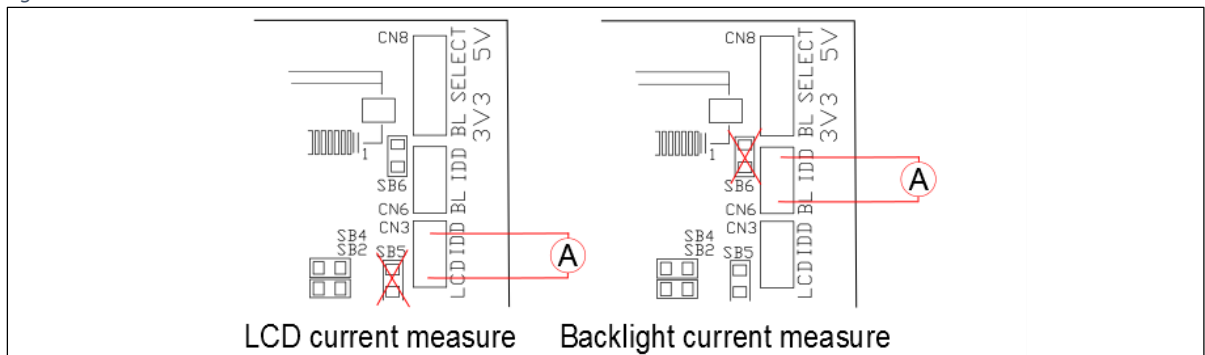
The Revelation Board is powered with 5V from micro USB plug. MCU power supply voltage is 3.3V from internal voltage regulator. User can choose LCD TFT inverter backlight power supply by selecting it on CN8 jumper (5V or 3.3V), see Figure 3. S2 button is a reset button connected to NRST pin of MCU.

Figure 3. Backlight power selection



Board also allows to measure two current values. The LCD current measure (FT800/FT801 current + LCD TFT current + Touch Panel (if mounted)) is available on CN3. The backlight current measure is available on CN6. Before measure LCD current you should unsolder SB5, and before measure backlight current you should unsolder SB6, see Figure 4.

Figure 4. Current measure method



## 2.4 User application

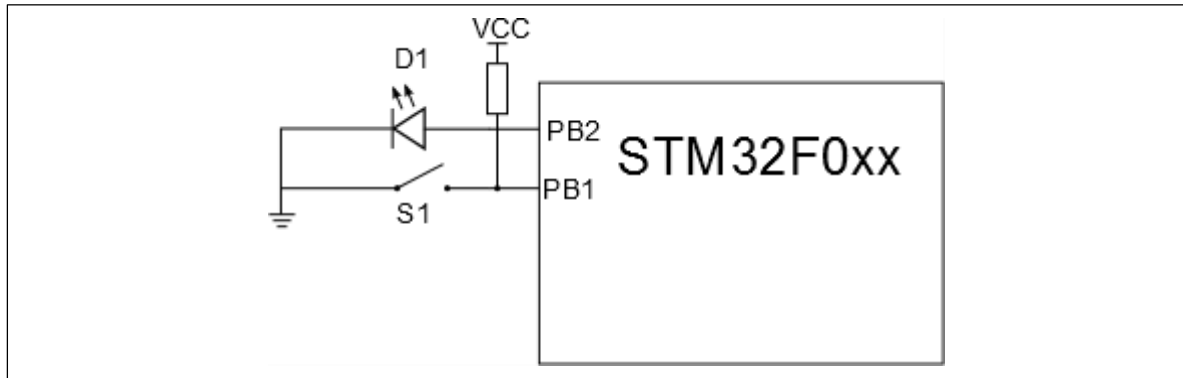
Revelation Board allows to build user own application on board. Unused pins of MCU are available on two 5 pin male headers CN1 and CN2. See Table 2 for pin description.

Table 2. CN1 and CN2 pinout

Pin number (CN1)	Pin name	Pin number (CN2)	Pin name
1	<b>PB3</b> (SPI1_SCK)	1	<b>PB4</b> (SPI1_MISO)
2	<b>GND</b>	2	<b>PB5</b> (SPI1_MOSI)
3	<b>GND</b>	3	<b>PB6</b> (I2C1_SCL, USART1_TX)
4	<b>3.3 V</b>	4	<b>PB7</b> (I2C1_SDA, USART1_RX)
5	<b>3.3 V</b>	5	<b>PB8</b> (I2C1_SCL)

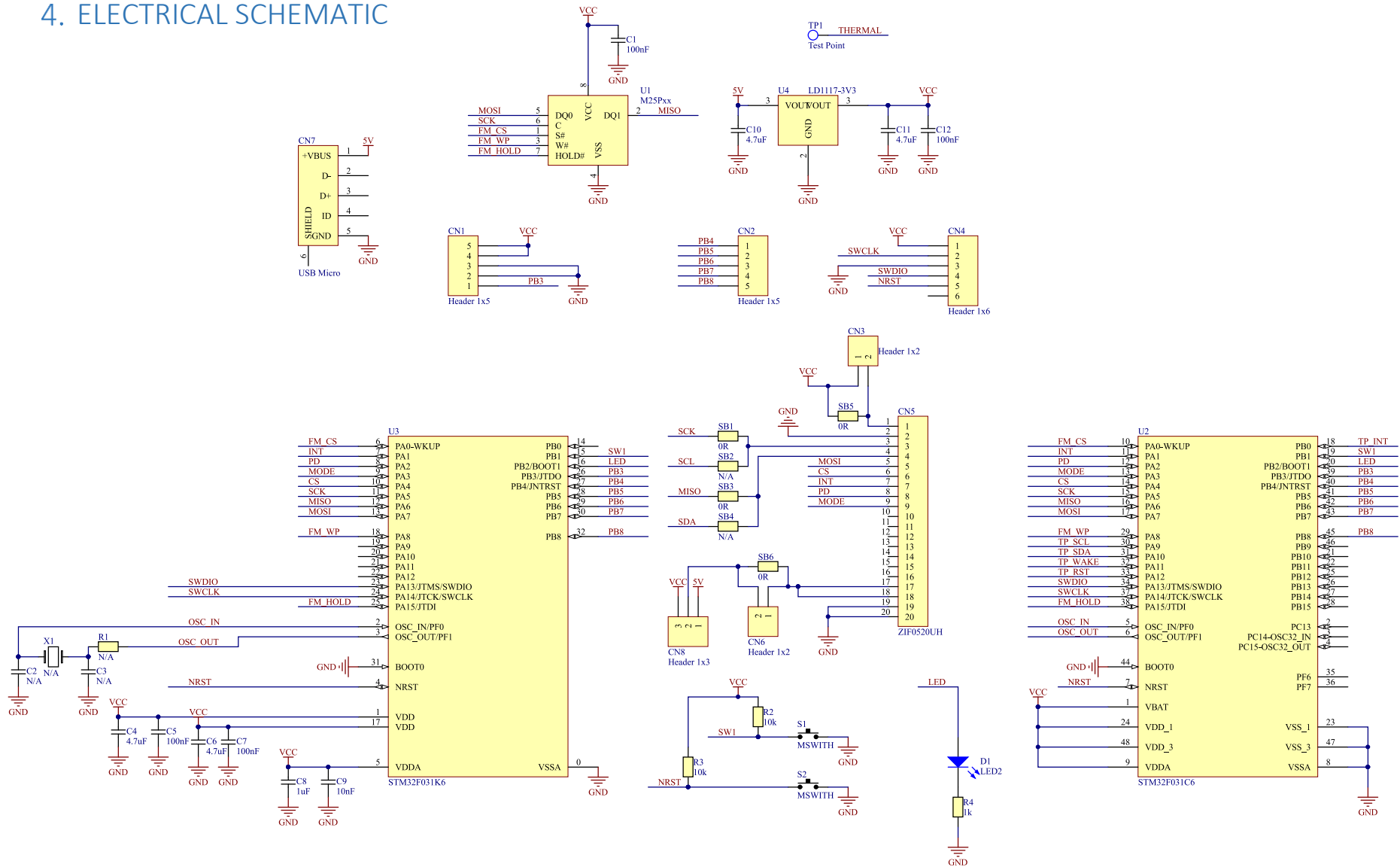
There is one general purpose button S1 connected to PB1 and one red LED D1 connected to PB2, see Figure 5.

Figure 5. S1 and D1 connection diagram



U1 is a 8 Mb flash memory. Connected to MCU via SPI interface. Flash memory is not required to use Riverdi FT800/FT801 displays. It is an additional element which can be used in user application. For example to storage graphics elements.

### 4. ELECTRICAL SCHEMATIC



## 5. LEGAL INFORMATION

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