# GigaDevice Semiconductor Inc.


# GD32330F-START
# User Manual

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# 1. Summary

GD32330F-START board uses GD32F330F8 as the main controller. As a complete development platform of GD32F3x0 powered by ARM® Cortex™-M4 core, the board supports full range of peripherals. It uses mini-USB interface to supply 5V power. SWD, Reset, Boot, User button key, LED and Extension Pin are also included. This document details its hardware schematic and the relevant applications.

# 2. Function Pin Assign

**Table 2-1 Pin assignment**

| Function | Pin | Description |
|:---:|:---:|:---:|
| LED | PA1 | LED1 |
| | PA2 | LED2 |
| KEY | PA0 | K1-User Key |
| RESET | | K2-Reset |
| USB | PA11 | USBDM |
| | PA12 | USBDP |
| | PA8 | USBCTR |

# 3. Getting started

The START Board uses mini-USB connecter to get power, the hardware system power is +3.3V. A mini-USB cable are necessary to down programs. Select the correct boot mode and then power on, the LED3 will turn on, which indicates the power supply is ready.

# 4. Hardware layout overview

## 4.1. Power supply

**Figure 4-1 Schematic diagram of power supply**
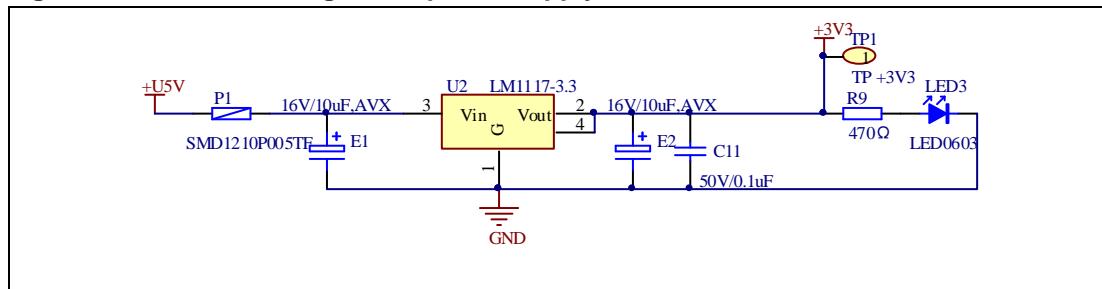
## 4.2. Boot option

**Figure 4-2 Schematic diagram of boot option**
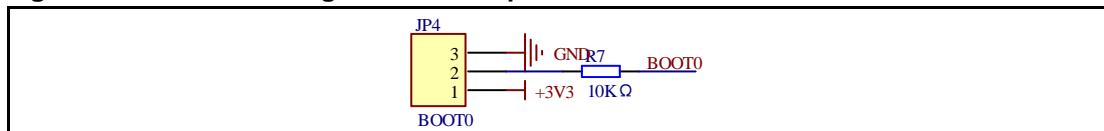


**Table 4-1 Boot configuration**

| BOOT1 | BOOT0 | Boot Mode |
|---|---|---|
| Default | 2-3 | User memory |
| | 1-2 | System memory |
| Changed by ISP | 1-2 | SRAM memory |

## 4.3. LED

**Figure 4-3 Schematic diagram of LED function**
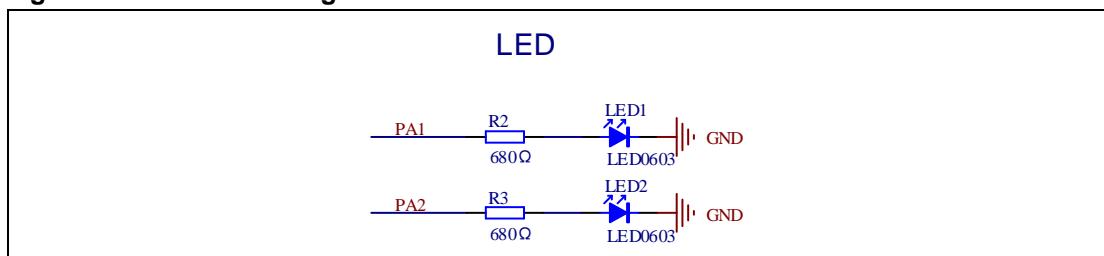


## 4.4. KEY

**Figure 4-4 Schematic diagram of Key function**
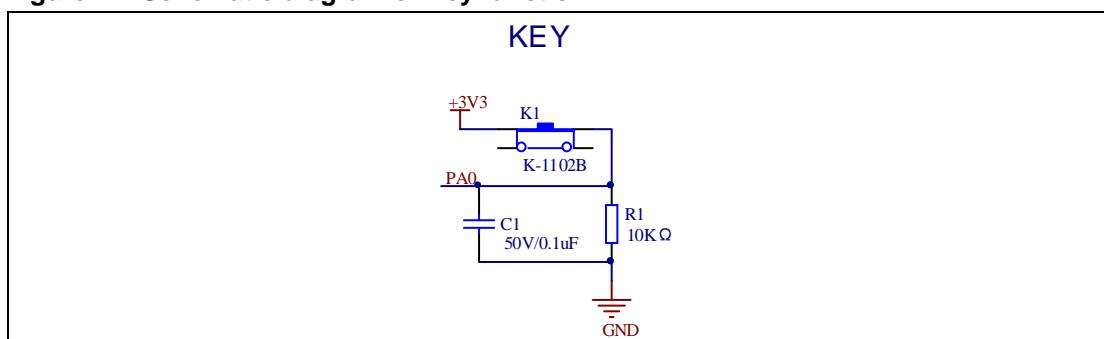
## 4.5. GD-Link

**Figure 4-5 Schematic diagram of GD-Link function**
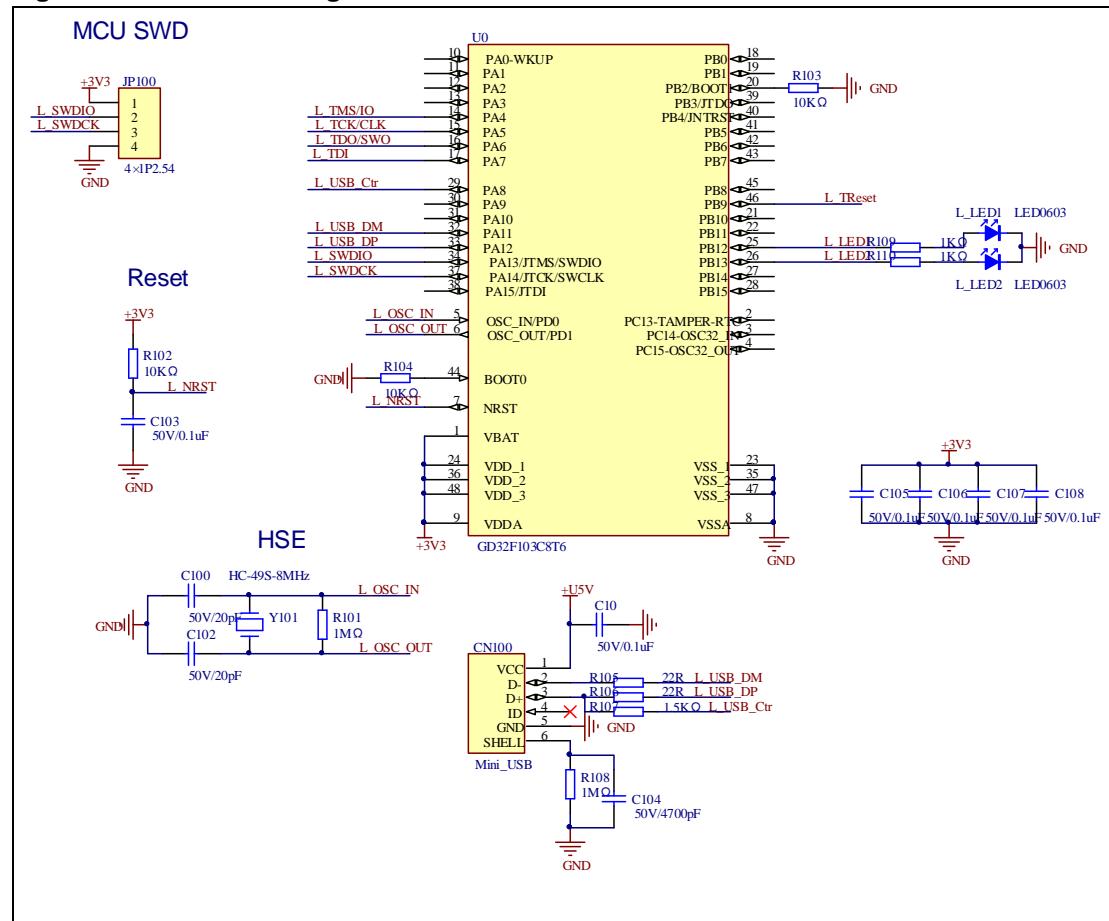


## 4.6. Extension

**Figure 4-6 Schematic diagram of Extension Pin**
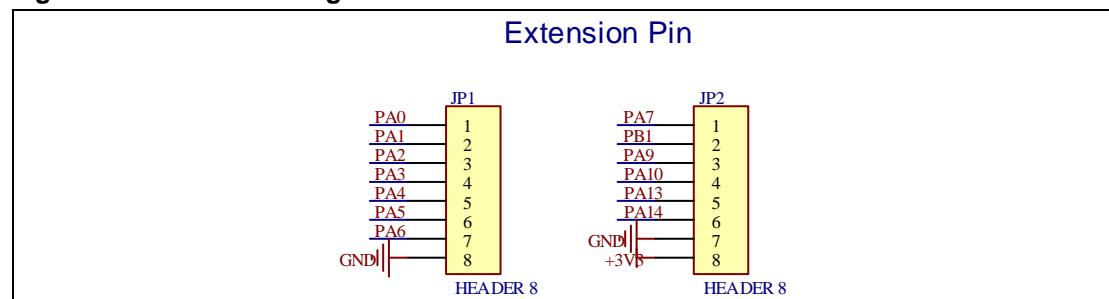
## 4.7. MCU

**Figure 4-7 Schematic diagram of MCU Pin**
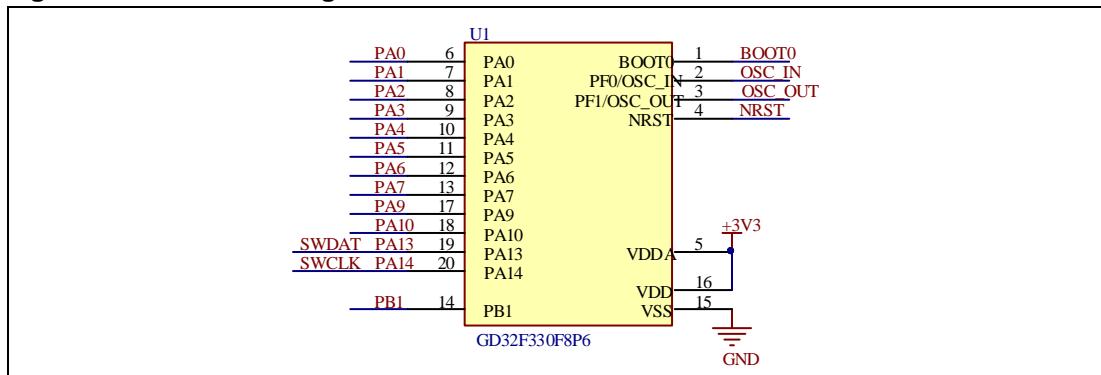


## 5. Routine use guide

## 5.1. GPIO_Runing_Led

### 5.1.1. DEMO Purpose

This Demo includes the following functions of GD32 MCU:

■ Learn to use GPIO for controlling the LED

■ Learn to use SysTick to generate 1ms delay

GD32330F-START board has two LEDs. The LED1 and LED2 are controlled by GPIO. This demo will show how to light the LED.

### 5.1.2. DEMO Running Result

Download the program <01_GPIO_Runing_Led> to the board, the states of LED1 and LED2 are toggled every 1s.

## 5.2. GPIO_KeyBoard_Polling_mode

### 5.2.1. DEMO Purpose

This Demo includes the following functions of GD32 MCU:

■ Learn to use GPIO control the LED and the KEY

■ Learn to use SysTick to generate 1ms delay

GD32330F-START board has two keys and two LEDs. The two keys are Reset key and User key. The LED1 and LED2 are controlled by GPIO.

This demo will show how to use the User key to control the LED1. When press down the User Key, it will check the input value of the IO port. If the value is 1, wait for 50ms. Then check the input value of the IO port again. If the value is still 1, indicates that the button is pressed down successfully, and light the four LED1.

### 5.2.2. DEMO Running Result

Download the program <02_GPIO_KeyBoard_Polling_mode> to the board, first of all, all the LEDs will be flashed once for test. Then press down the User Key, LED1 will be turned on. Press down the User Key again, LED1 will be turned off.

## 5.3. GPIO_KeyBoard_Interrupt_mode

### 5.3.1. DEMO Purpose

This Demo includes the following functions of GD32 MCU:
- Learn to use GPIO to control the LED and the KEY
- Learn to use EXTI to generate external interrupt

GD32330F-START board has two keys and two LEDs. The two keys are Reset key and User key. The LED1 and LED2 are controlled by GPIO.

This demo will show how to use EXTI interrupt line to control the LED1. When press down the User Key, it will produce an interrupt. In the interrupt service function, the demo will toggle LED1.

### 5.3.2. DEMO Running Result

Download the program <03_GPIO_KeyBoard_Interrupt_mode> to the board, first of all, all the LEDs will be flashed once for test. Then press down the User Key, LED1 will be turned on. Press down the User Key again, LED1 will be turned off.

# 6. Revision history

**Table 6-1 Revision history**

| Revision No. | Description | Date |
|---|---|---|
| 1.0 | Initial Release | Oct.30, 2017 |