



GigaDevice GD32E231C-START Arm Cortex-M23 32-bit MCU Controller User Guide

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Giga Device GD32E231C-START Arm Cortex-M23 32-bit MCU Controller



Summary

GD32E231C-START uses GD32E231C8T6 as the main controller. It uses Mini USB interface to supply 5V power. Reset, Boot, Wakeup key, LED, GD-Link, Arduino are also included. For more details please refer to GD32E231C-START-V1.0 schematic.

Function pin assignment

Table 2-1 Function pin assignment

Function	Pin	Description
LED	PA7	LED1
	PA8	LED2
	PA11	LED3
	PA12	LED4
RESET		K1-Reset
KEY	PA0	K2-Wakeup

Getting started

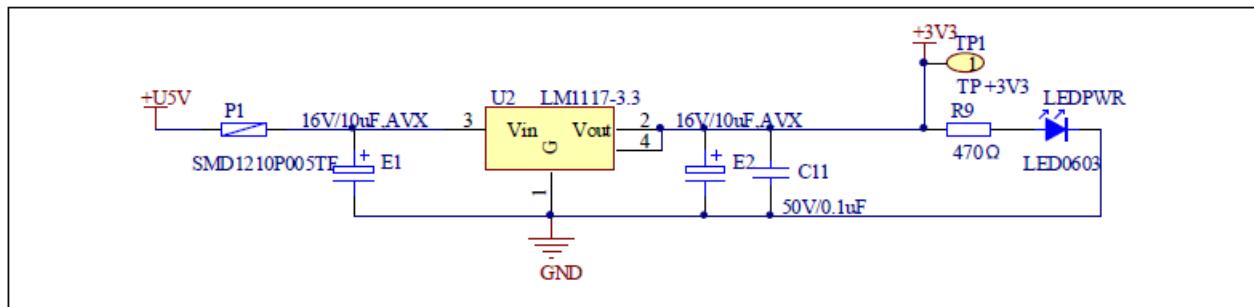
The EVAL board uses Mini USB connector to get power DC +5V, which is the hardware system normal work voltage. A GD-Link on board is necessary in order to download and debug programs. Select the correct boot mode and then power on, the LEDPWR will turn on, which indicates that the power supply is OK. There are Keil version and IAR version of all projects. Keil version of the projects are created based on Keil MDK-ARM 5.25 uVision5. IAR version of the projects are created based on IAR Embedded Workbench for ARM 8.31.1. During use, the following points should be noted:

1. If you use Keil uVision5 to open the project. In order to solve the “Device Missing (s)” problem, you can install GigaDevice.GD32E23x_DFP.1.0.0.pack.
2. If you use IAR to open the project, install IAR_GD32E23x_ADDON_1.0.0.exe to load the associated files.

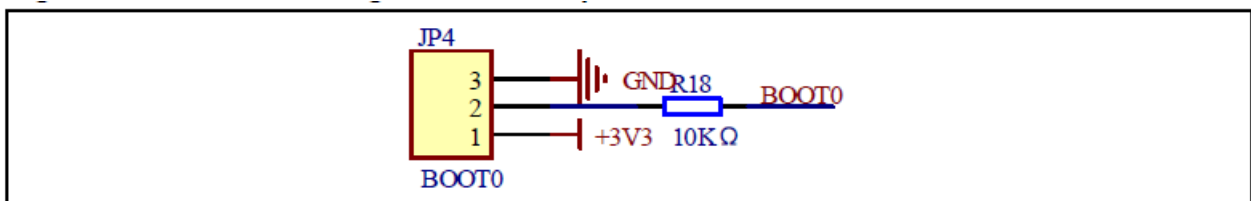
Hardware layout overview

Power supply

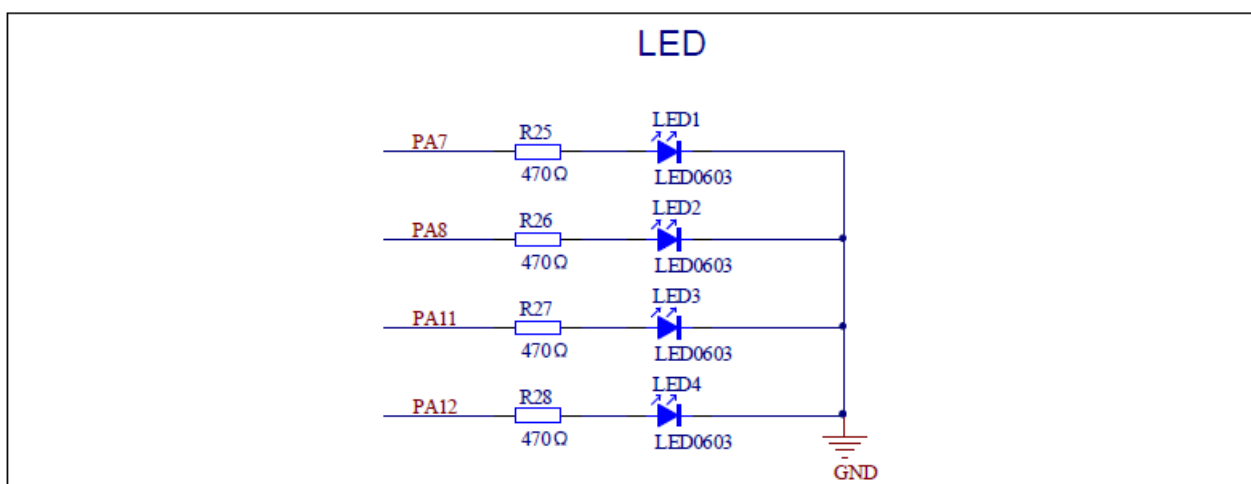
Figure 4-1 Schematic diagram of power supply



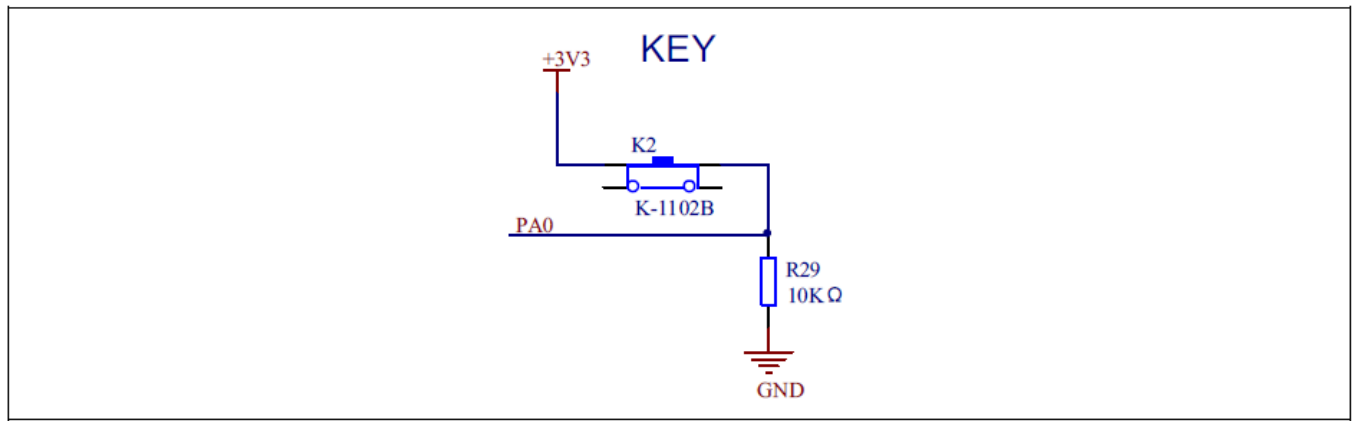
Boot option



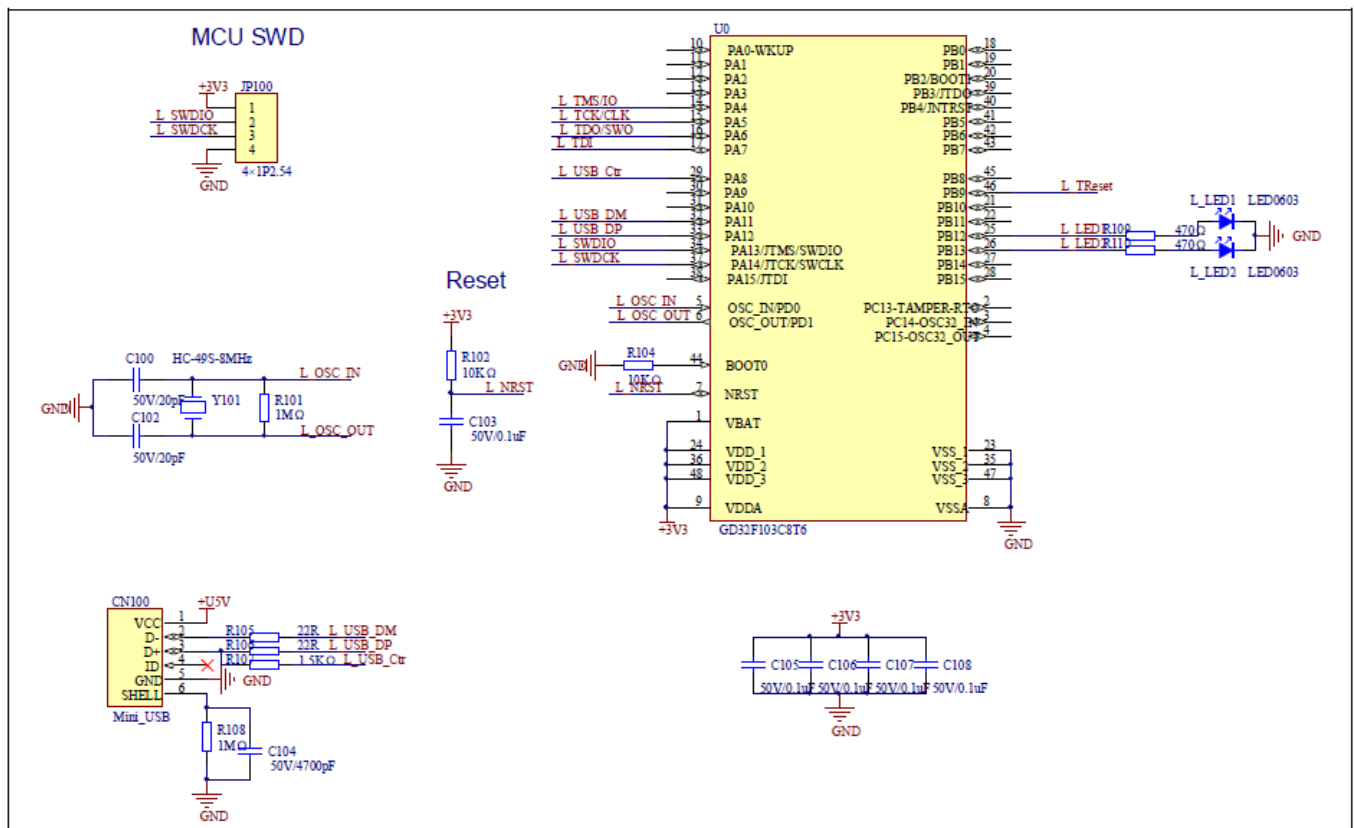
LED



KEY



GD-Link



MCU

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

GD32E231C-START board has two keys and four LED. The two keys are Reset key and Wakeup key. The LED1 are controlled by GPIO. This demo will show how to use the Wakeup key to control the LED1. When press down the Wakeup Key, it will check the input value of the IO port. If the value is 1 and will wait for 50ms. Check the input value of the IO port again. If the value still is 1, it indicates that the button is pressed successfully and toggle LED1.

DEMO running result

Download the program < 02_GPIO_Key_Polling_mode > to the EVAL board, all the LEDs are flashed once for test and LED1 is on, press down the Wakeup Key, LED1 will be turned off. Press down the Wakeup Key again, LED1 will be turned on.

EXTI_Key_Interrupt_mode

DEMO purpose

This demo includes the following functions of GD32 MCU:

- Learn to use GPIO control the LED and the KEY
- Learn to use EXTI to generate external interrupt

GD32E231C-START board has two keys and four LED. The two keys are Reset key and Wakeup key. The LED1 are controlled by GPIO. This demo will show how to use the EXTI interrupt line to control the LED1. When press down the Wakeup Key, it will produce an interrupt. In the interrupt service function, the demo will toggle LED1.

DEMO running result

Download the program < 03_EXTI_Key_Interrupt_mode > to the EVAL board, all the LEDs are flashed once for test and LED1 is on, press down the Wakeup Key, LED1 will be turned off. Press down the Wakeup Key again, LED1 will be turned on.

TIMER_Key_EXTI

This demo includes the following functions of GD32 MCU:

- Learn to use GPIO control the LED and the KEY
- Learn to use EXTI to generate external interrupt
- Learn to use TIMER to generate PWM

GD32E231C-START board has two keys and four LED. The two keys are Reset key and Wakeup key. The LED1 are controlled by GPIO. This demo will show how to use the TIMER PWM to trigger EXTI interrupt to toggle the state of LED1 and EXTI interrupt line to control the LED1. When press down the Wakeup Key, it will produce an interrupt. In the interrupt service function, the demo will toggle LED1.

DEMO running result

Download the program < 04_TIMER_Key_EXTI > to the EVAL board, all the LEDs are flashed once for test, press down the Wakeup Key, LED1 will be turned on. Press down the Wakeup Key again, LED1 will be turned off. Connect PA6(TIMER2_CH0) and PA5


Revision history

Revision No.	Description	Date
1.0	Initial Release	Feb.19, 2019
1.1	Modify document header and homepage	Dec. 31, 2021

Important Notice

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Documents / Resources

 <p>GigaDevice Semiconductor Inc. GD32E231C-START Arm® Cortex-M23 32-bit MCU</p> <p>User Guide Version 1.1 Dec. 2021</p>	GigaDevice GD32E231C-START Arm Cortex-M23 32-bit MCU Controller [pdf] User Guide GD32E231C-START, Arm Cortex-M23 32-bit MCU Controller, Cortex-M23 32-bit MCU Controller, 32-bit MCU Controller, MCU Controller, GD32E231C-START, Controller
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