

PY32F403(LQFP48)-Start Kit

User Guide



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1. Introduction

The development board uses the PY32F403 as the main controller. The board provides a simple hardware development environment for the Puya chip with 32 bits ARM® Cortex®-M0+ CPU core. The board uses the mini-USB interface for power supply. Peripheral resources such as SWD, Reset, Boot, User button key, Reset key, LED, etc. are provided, including expansion pins. This document provides detailed hardware schematics and guidelines for using the associated applications.

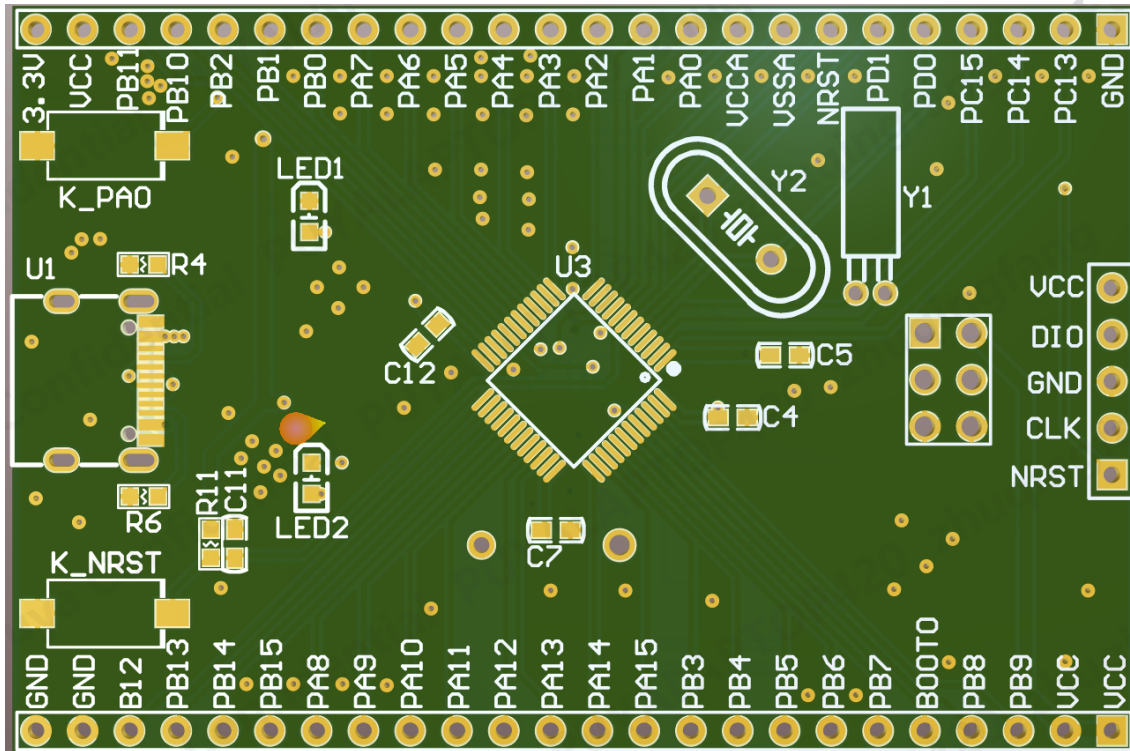


Figure 1-1 PY32F403 Start Kit

2. Functional pin assignment

Table 2-1 Pin Assignment

Function	Pin	Description	Note
LED	\	LED1	Power LED
	PA1	LED2	LED
KEY	PA0	KEY1	User Key
	NRST	K1	Reset Key

3. Getting Started Guide

The development board uses a mini-USB to LDO to provide 3.3V power. In order to download the program to the development board, a mini-USB cable is required. We need to select the correct boot mode and connect the USB cable, if LED1 is lit, the power supply is connected in the correct way. The routines are provided for the Keil version only.

4. Overview of Hardware Design

4.1 Power supply

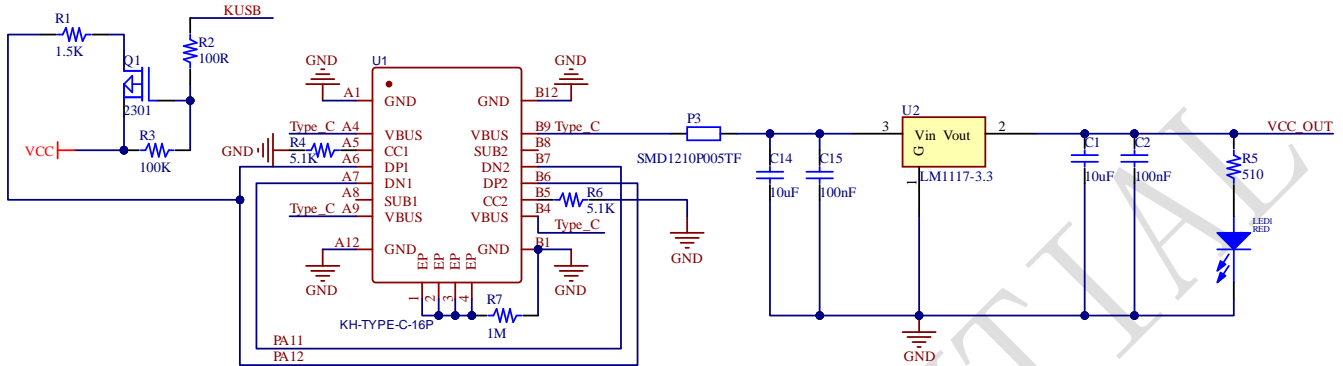


Figure 4-1 Power supply schematic

4.2 Boot Mode Selection

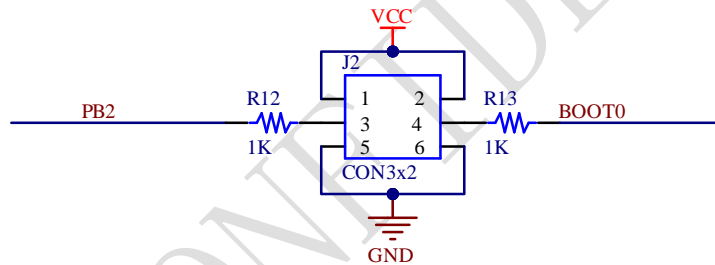


Figure 4-2 Boot mode selection schematic

With the BOOT0 pin and the boot configuration bit nBOOT1 (stored in the Option bytes), three different boot modes can be selected, as shown in the following table.

Table 4-1 Boot mode configuration

nBOOT1 bit	BOOT0 pin	Boot Mode
X	0	Select Main flash as the boot area
1	1	Select System memory as the boot area
0	1	Select SRAM memory as the boot area

4.3 LED indicator light

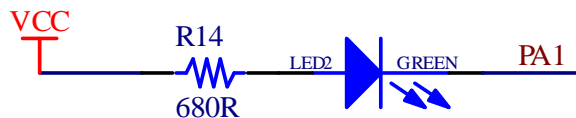


Figure 4-3 LED Functional schematic

4.4 Keys

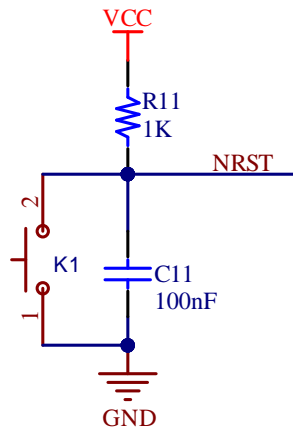


Figure 4-4 Reset key function schematic

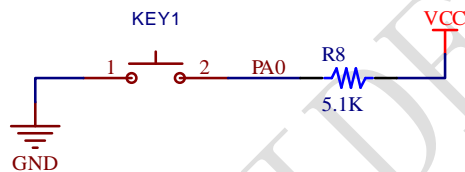


Figure 4-5 User Key function schematic

5. Guide to Using the Example

5.1 GPIO Toggle

5.1.1 Purpose of the Example

This sample program includes the following functions of the MCU:

- Learn to control LEDs using GPIOs
- Learn to use SysTick to generate time delays

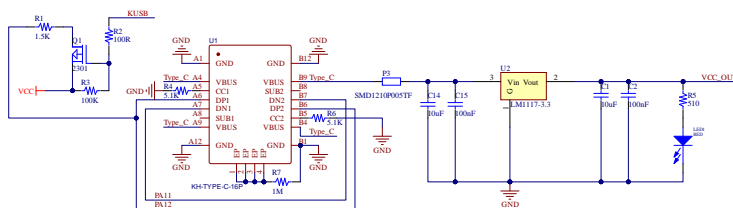
There is one LED on the development board, the LED is controlled by GPIO. This sample program will tell how to light up the LED.

5.1.2 Execution Results

Download the program <GPIO_Toggle> to the development board and you will see the LED blinking.

6. Schematic

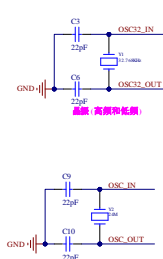
Power



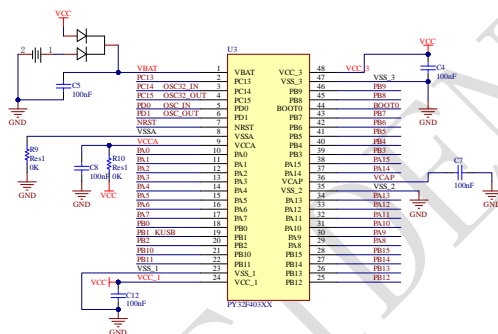
Extension Pin

	J_1	J_2
GND	1	VCC
PC13	2	VCC
PC14 - OSC32_IN	3	DB0
PC15 - OSC32_OUT	4	DB1
PD0 - OSC_IN	5	DB00IO
PD1 - OSC_OUT	6	PB5
	7	PB6
NB1	8	PB7
VSSA	9	PB8
VCCA	10	PB9
PA0	11	PB10
PA1	12	PB11
PA2	13	PB12
PA3	14	PB13
PA4	15	PB14
PA5	16	PB15
PA6	17	PB16
PA7	18	PB17
PB0	19	PB18
PB1	20	PB19
PC10 - K10SB	21	PB20
PB2	22	PB21
PC11	23	PB22
PC12	24	PB23
VCC_OUT	25	GND
	26	GND

OSC



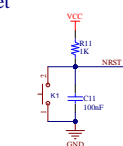
Mcu



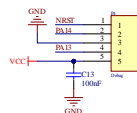
Key



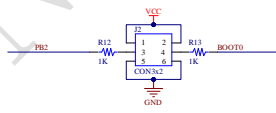
Reset



Debug



Boot



LED



7. Updated History

Version	Content	Date
V1.0	Initial version	2024/03/13
V1.1	Updated the picture	2024/05/16



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