

GigaDevice Semiconductor Inc.

GD32150R-EVAL Evaluation Board

User Manual

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1 Introduction

GD32150R-EVAL evaluation board uses GD32F150R8T6 as the main controller. As a complete development platform of GD32F1x0 value line powered by ARM® Cortex™-M3 core, the board supports full range of peripherals. It uses mini-USB interface to supply 5V power. SWD, Reset, Boot, User button key, LED, I2C, I2S, USART, RS-485, TFT-LCD, HDMI-CEC, LDR, TSI, IR LED, IR Receiver, RTC, SPI, USB, ADC, DAC and Extension Pin are also included. This document details its hardware schematic and the relevant applications.

2 Function pin assignment

Table 1. Pin assignment

Function	Pin	Description
LED	PC10	LED1
	PC11	LED2
	PC12	LED3
	PD2	LED4
RESET		K1-Reset
KEY	PA0	K2-Wakeup
	PC13	K4-Temper
	PF7	K3-User Key
BEEP	PC7	BEEP_CTL
USB	PA11	USBDM
	PA12	USBDP
	PC2	USBDP pull up pin
IR	PC6	IR_RX
	PB9	IR_TX
I2C	PB6	I2C1_SCL
	PB7	I2C1_SDA
I2S	PA4	I2S_WS
	PA5	I2S_CK
	PA7	I2S_DIN
	PA15	MSEL
	PB3	MCLK
	PB5	MDIN
	PA6	I2S_MCK
USART1	PA9	USART1_TX
	PA10	USART1_RX
RS-485	PA2	RS485_TX
	PA3	RS485_RX
	PA1	RS485_DIR

Function	Pin	Description
TSI	PB11	TSI_G6_IO1
	PB14	TSI_G6_IO4
	PB13	TSI_G6_IO3
	PB12	TSI_G6_IO2
	PC5	TSI_G3_IO1
	PB0	TSI_G3_IO2
SPI	PB3	SPI1_SCK
	PB4	SPI1_MISO
	PB5	SPI1_MOSI
	PF5	TFT_CS
	PF4	TF_CARD_CS
	PC4	TFT_RESET
ADC	PC3	ADC123_IN13
HDMI-CEC	PB8	CEC
CMP	PA1	CMP1_INP
DAC	PA4	DAC_OUT1

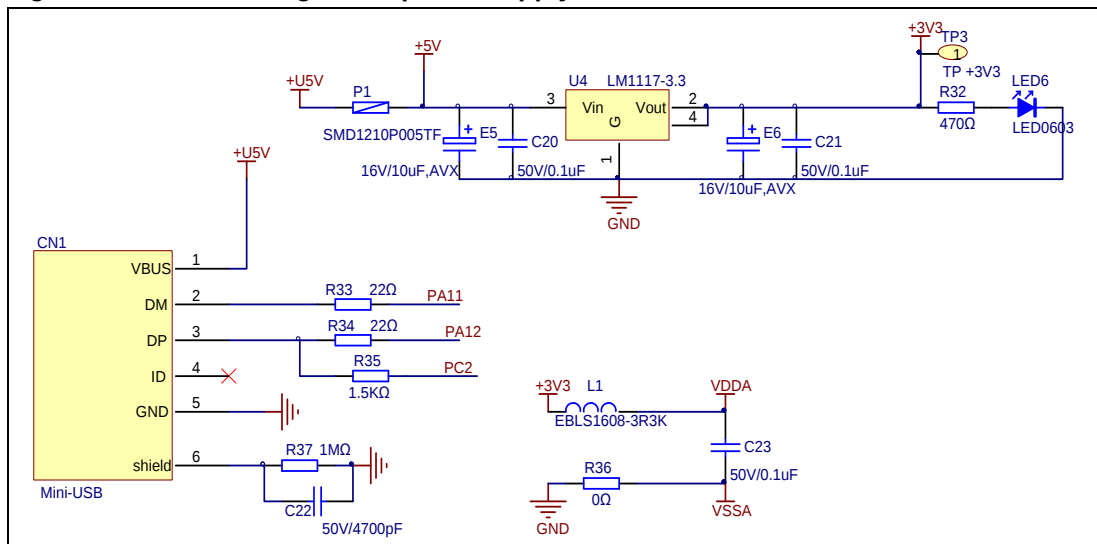
3 Getting started

The EVAL Board uses Mini USB connector to get power, the hardware system power is +3.3V. A Mini USB cable and a J-Link tool are necessary to down programs. Select the correct boot mode and then power on, the LED6 will turn on, which indicates the power supply is ready.

4 Hardware layout overview

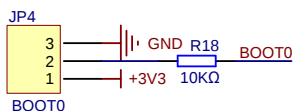
4.1 Power supply

Figure 1 Schematic diagram of power supply



4.2 Boot option

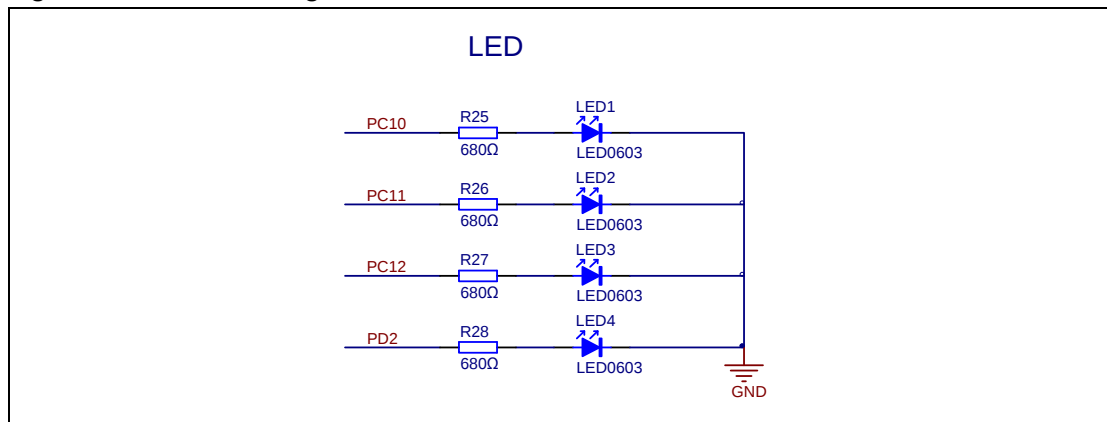
Figure 2. Schematic diagram of boot option



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

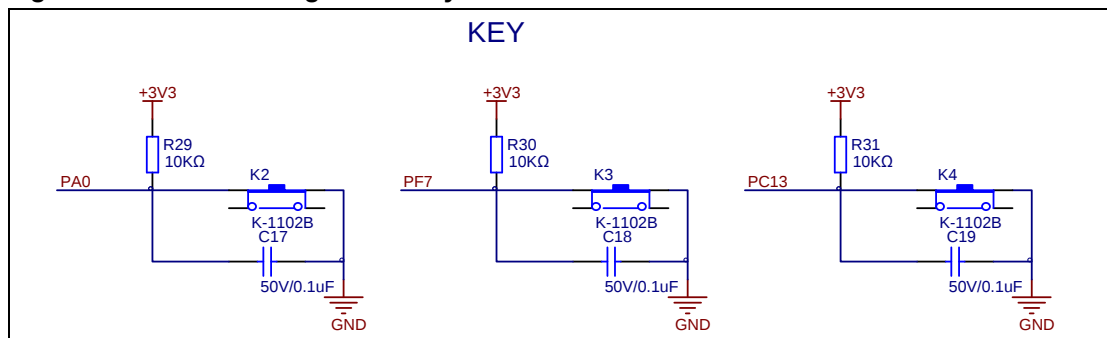
4.3 LED

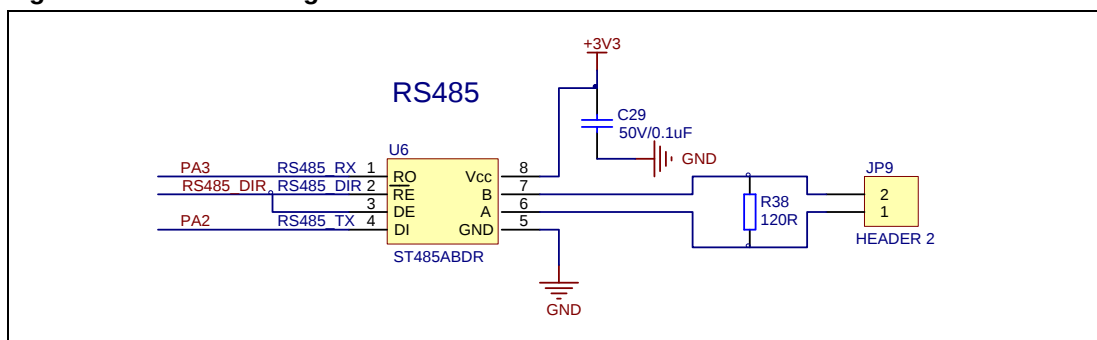
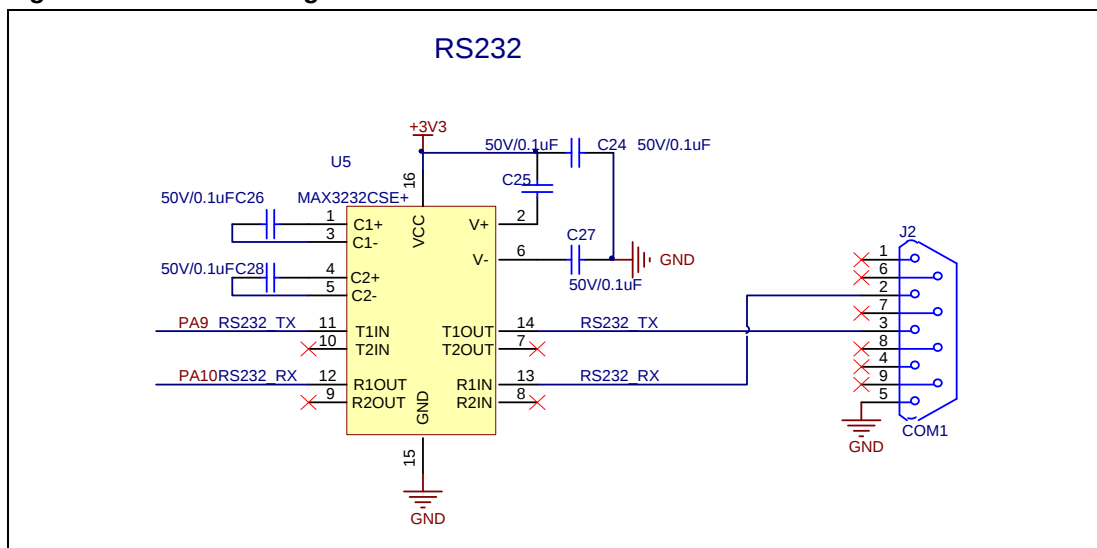
Figure 3. Schematic diagram of LED function



4.4 Key

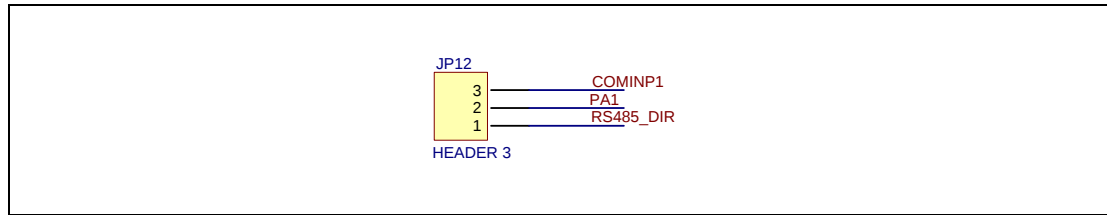
Figure 4. Schematic diagram of Key function





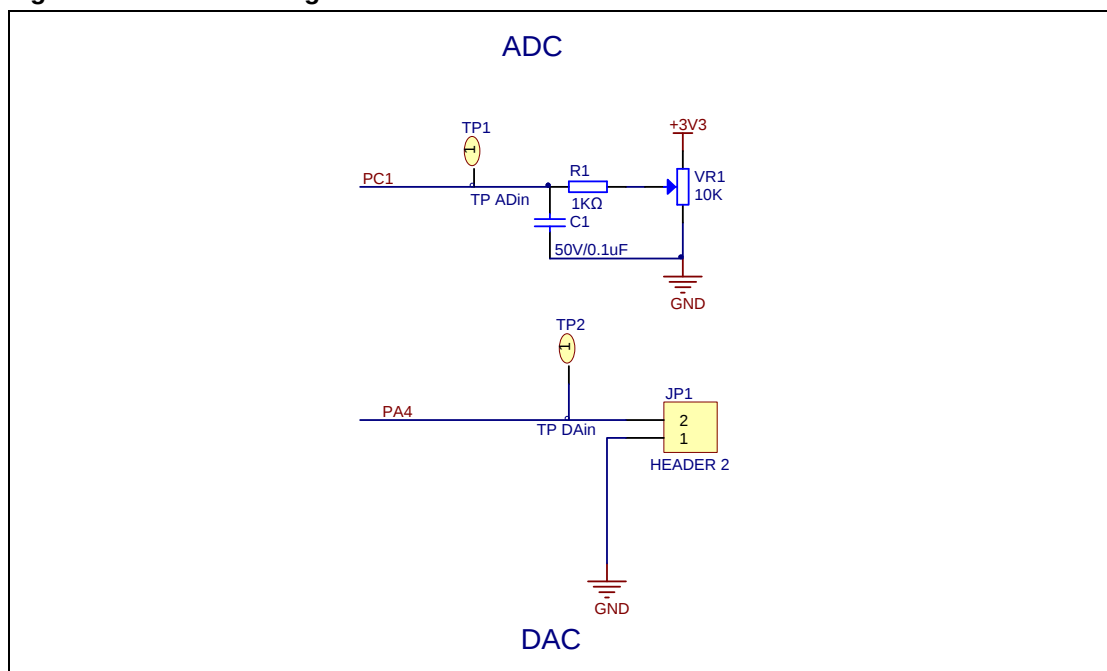
4.7 RS485_CMP_SELECT

Figure 7. Schematic diagram of RS485_CMP_SELECT function



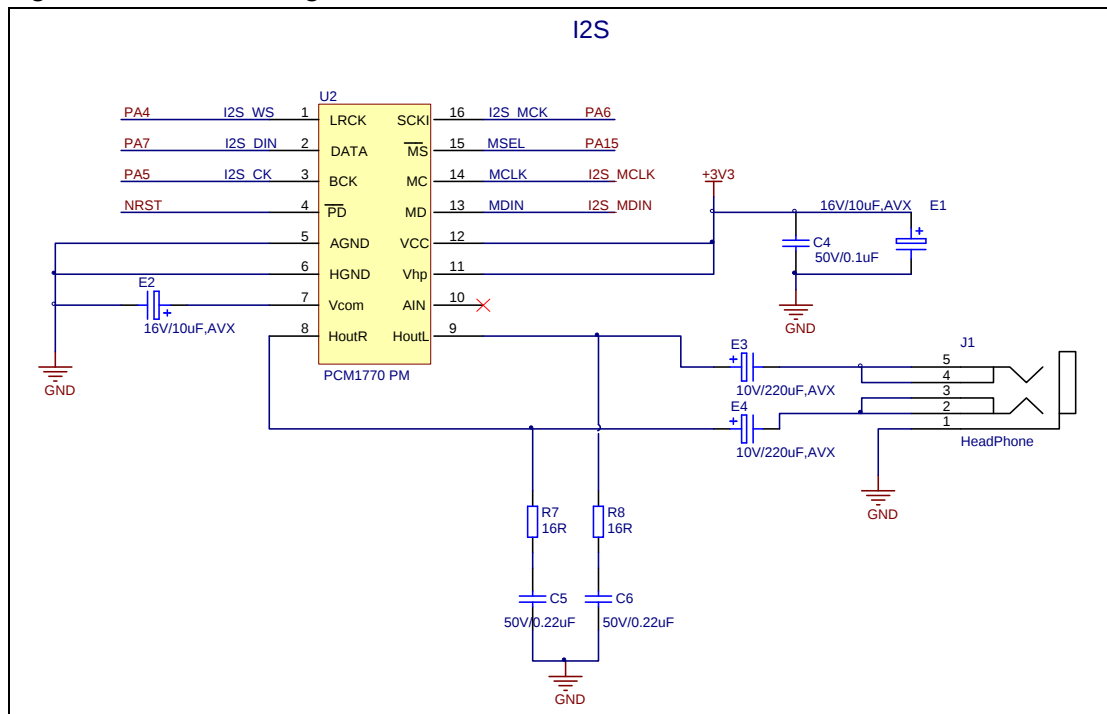
4.8 ADC/DAC

Figure 8. Schematic diagram of ADC/DAC function



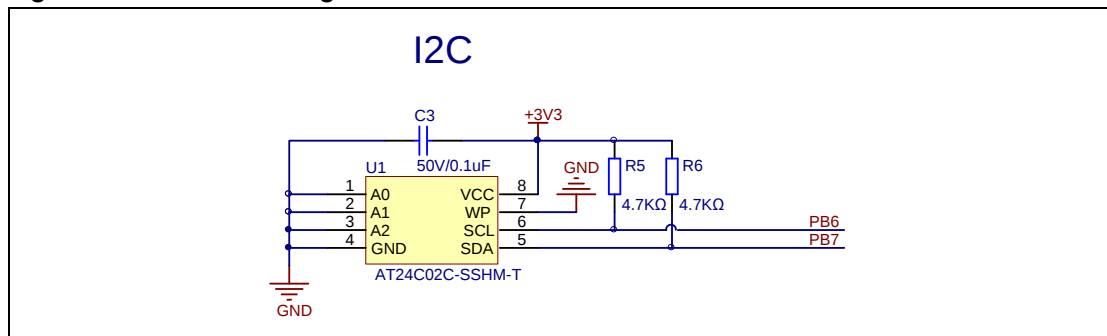
4.9 I2S

Figure 9. Schematic diagram of I2S function



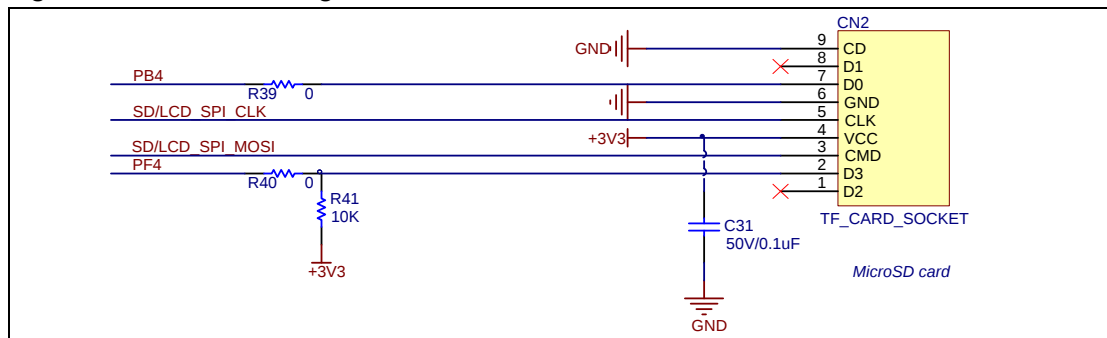
4.10 I2C

Figure 10. Schematic diagram of I2C function



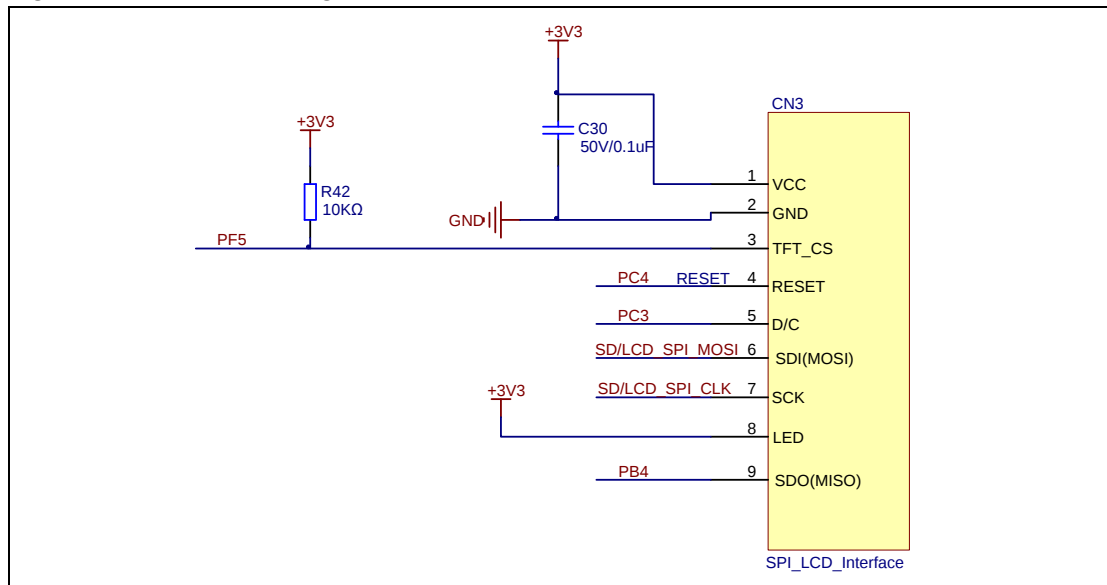
4.11 SPI-TF CARD

Figure 11. Schematic diagram of SPI-TF CARD function



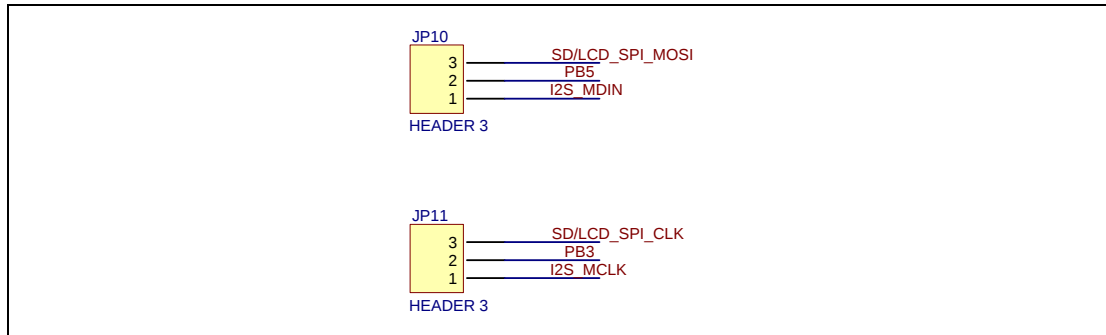
4.12 SPI-TFT LCD

Figure 12. Schematic diagram of SPI-TFT LCD function



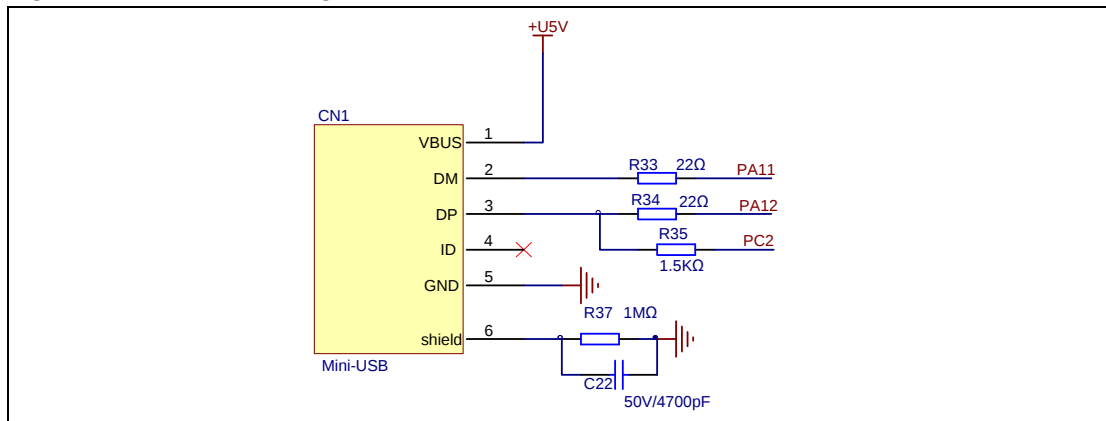
4.13 TFCARD-I2S-Select

Figure 13. Schematic diagram of TFCARD-I2S-Select function



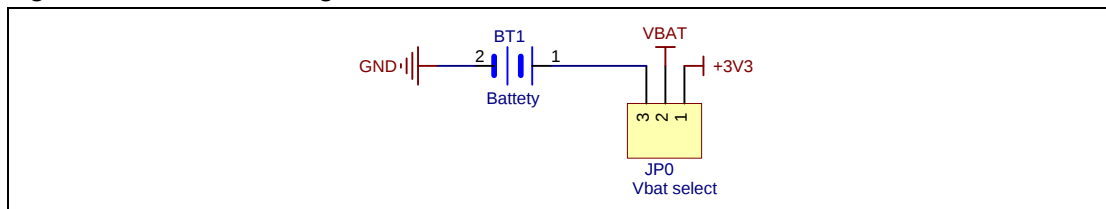
4.14 USB

Figure 14. Schematic diagram of USB function



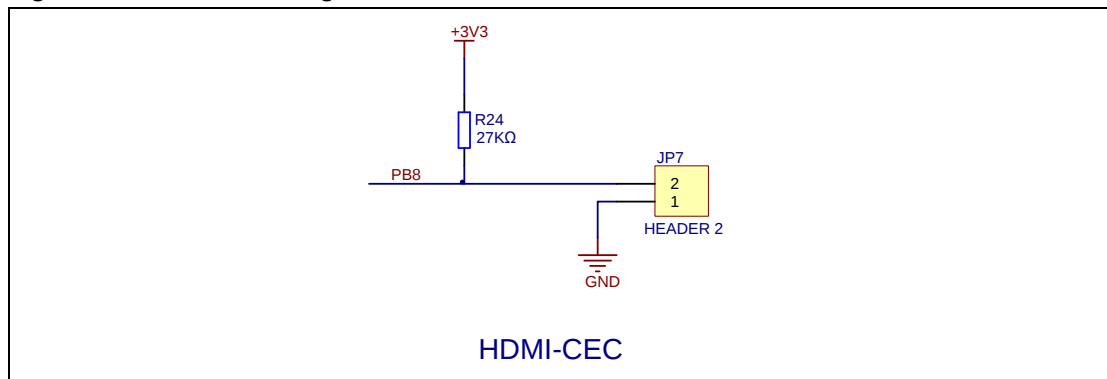
4.15 COMPARATOR

Figure 15. Schematic diagram of RTC function



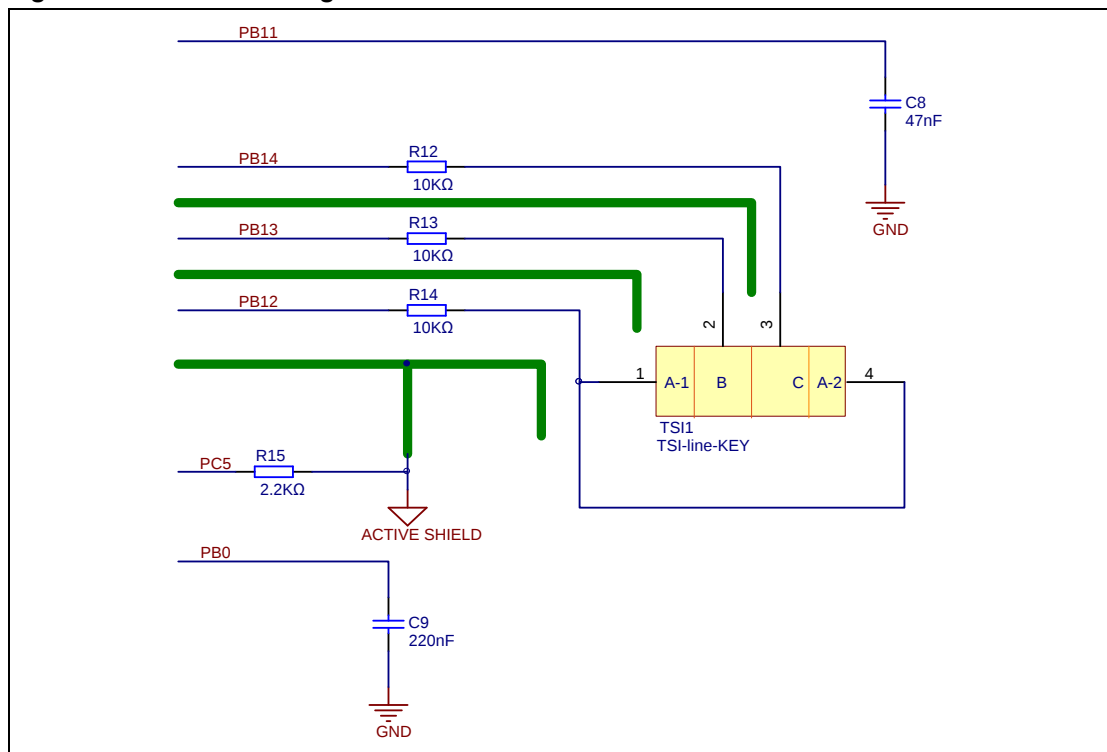
4.16 HDMI-CEC

Figure 16. Schematic diagram of HDMI-CEC function



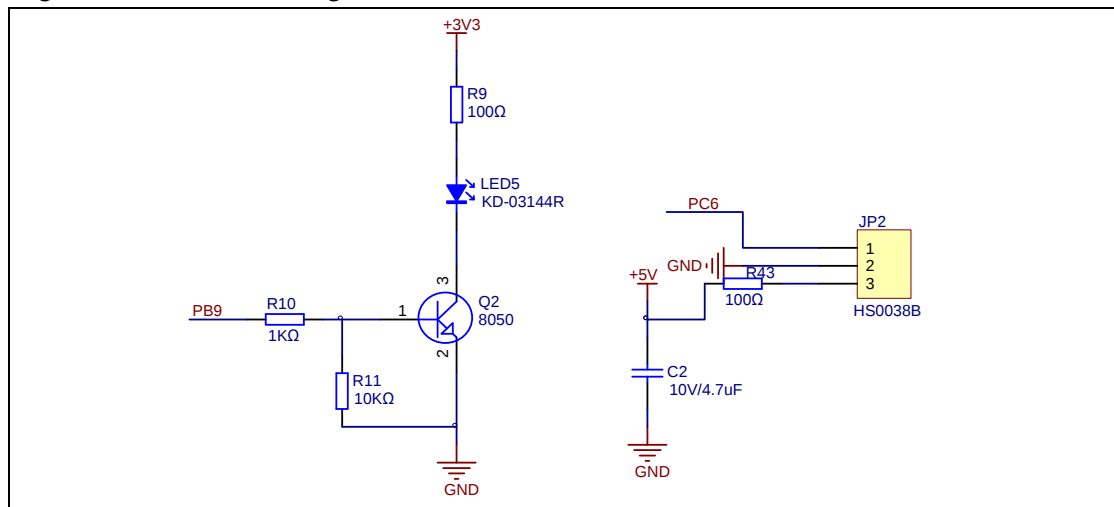
4.17 TSI

Figure 17. Schematic diagram of TSI function



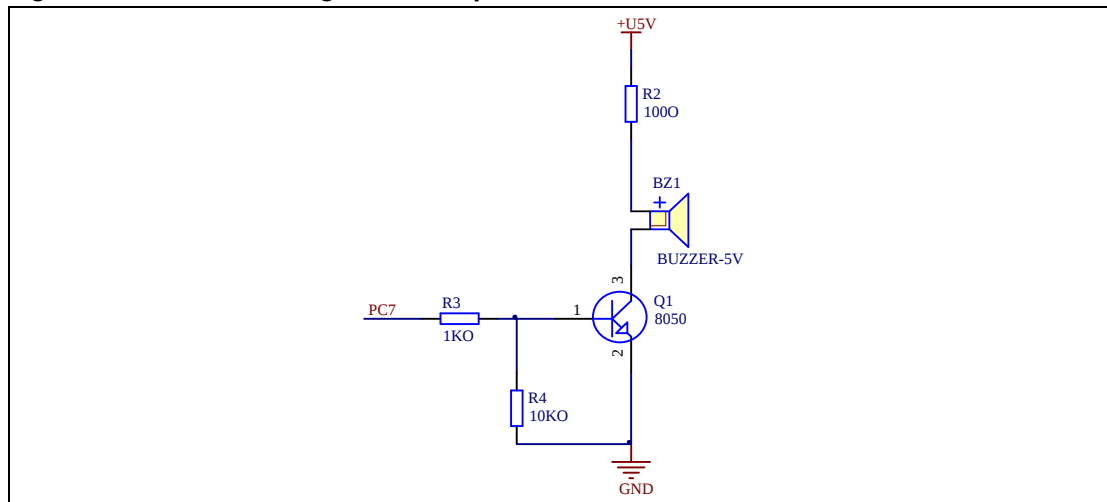
4.18 IR

Figure 18. Schematic diagram of IR function



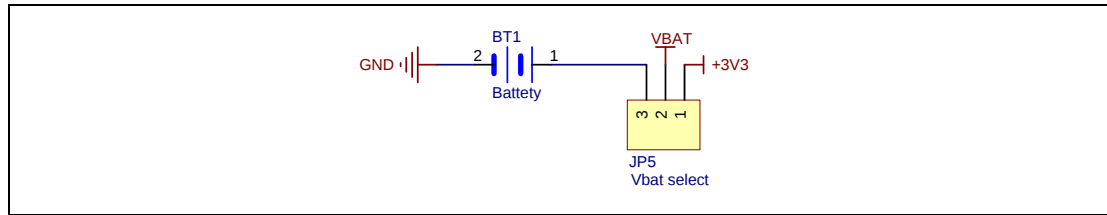
4.19 BEEP

Figure 19. Schematic diagram of Beep function



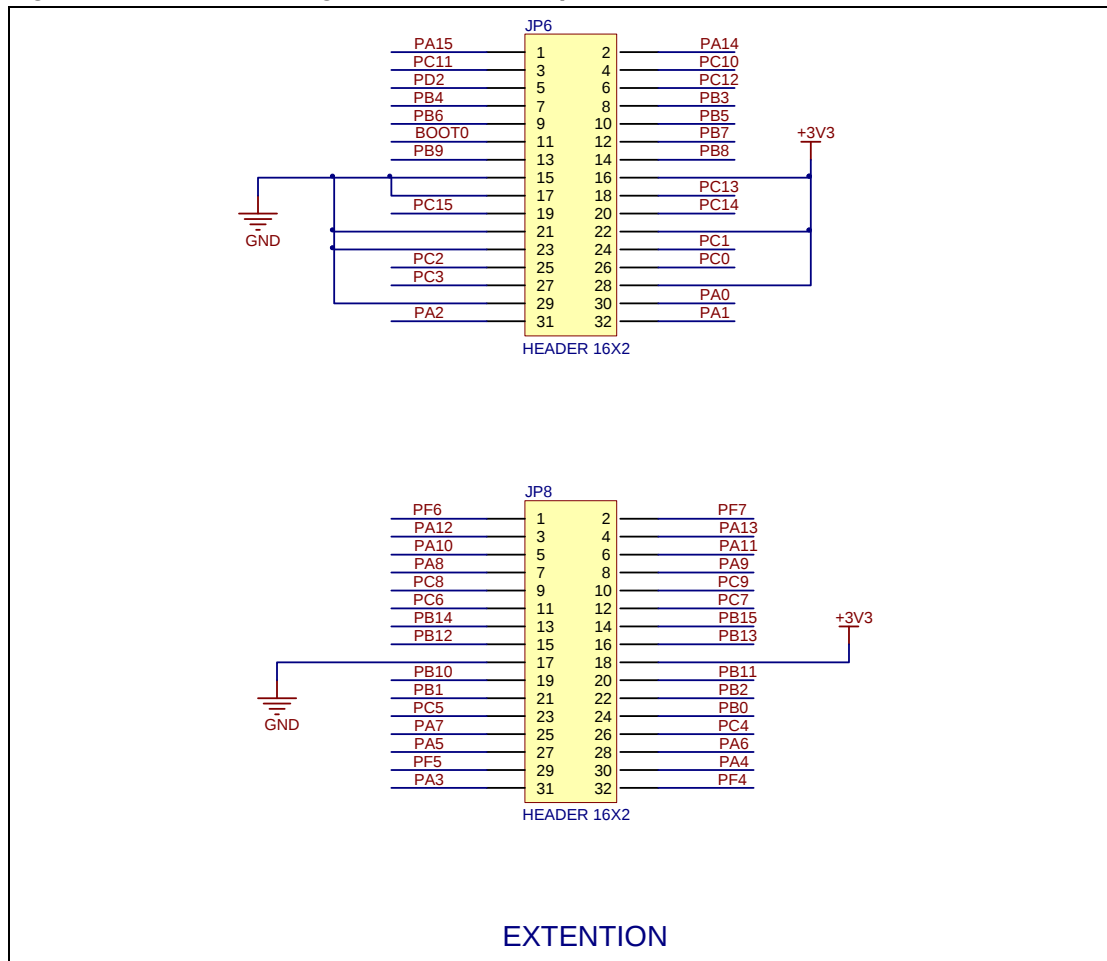
4.20 RTC

Figure 20. Schematic diagram of RTC function



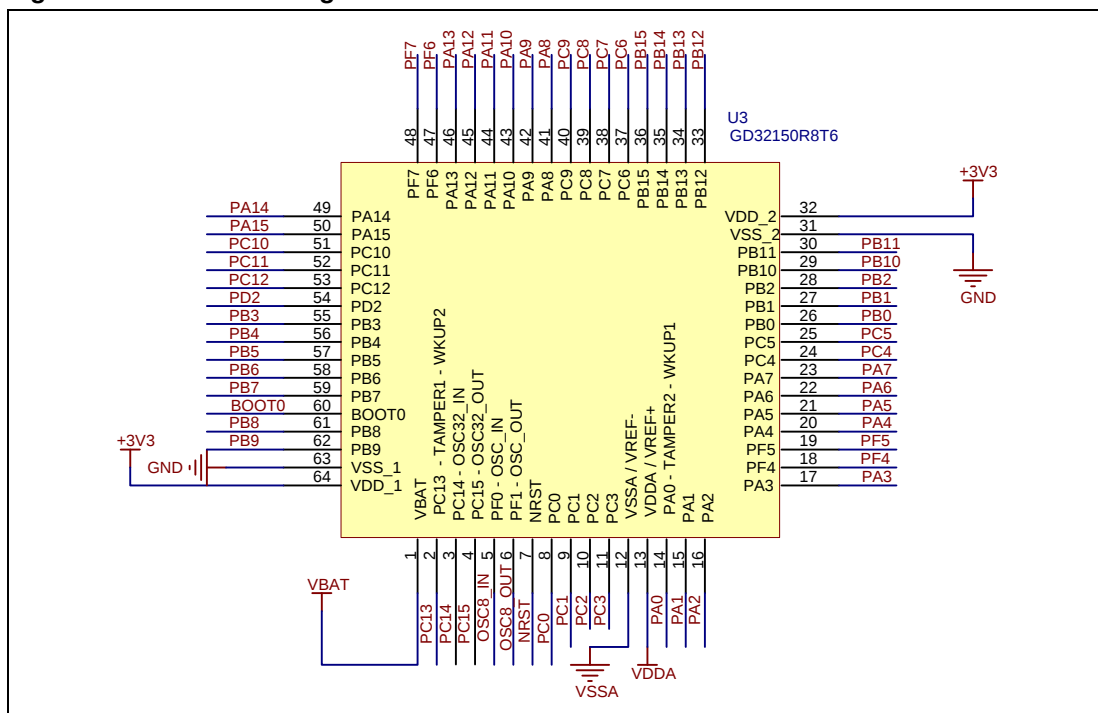
4.21 Extension

Figure 21. Schematic diagram of Extension pins



4.22 MCU

Figure 22. Schematic diagram of MCU



5 Revision history

Table 2. Revision history

Revision No.	Description	Date
1.0	Initial Release	Mar. 8, 2014