

**GigaDevice Semiconductor Inc.**

**GDSCN832R-EVAL**

**用户指南**

1.1 版本

(2025 年 7 月)

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## 1. 简介

GDSCN832R-EVAL 评估板使用 GDSCN832xx 作为主器件。评估板使用 DC-005 连接器提供 5V 电源。提供包括扩展引脚在内的及 EXMC, SPI, OSPI, Digital IO 等接口资源。更多关于开发板的资料可以查看 GDSCN832R-EVAL-V1.1 和 GD32H759I-ESC-EVAL-V1.0 原理图。

## 2. 功能引脚分配

表 2-1 引脚分配

功能	引脚	描述
SPI	SCK	SPI GPIO 功能引脚
	SCS	
	SIO0	
	SIO1	
OSPI	SCK	OSPI GPIO 功能引脚
	SCS	
	SIO0	
	SIO1	
	SIO2	
	SIO3	
	SIO4	
	SIO5	
	SIO6	
	SIO7	
EXMC	EXMC_NOE	EXMC GPIO 功能引脚
	EXMC_NWE	
	EXMC_NE	
	EXMC_NWAIT	
	EXMC_CLK	
	EXMC_NL/NADV	
	AD0	
	AD1	
	AD2	
	AD3	
	AD4	
	AD5	
	AD6	
	AD7	
	AD8	
	AD9	
	AD10	
	AD11	

	AD12	
	AD13	
	AD14	
	AD15	
Digital IO	LATCH_IN	Digital IO GPIO 功能引脚
	WD_STATE	
	WD_TRIG	
	OE_EXT	
	EOF	
	SOF	
	GPIO0	
	GPIO1	
	GPIO2	
	GPIO3	
	GPIO4	
	GPIO5	
	GPIO6	
	GPIO7	
	GPIO8	
	GPIO9	
	GPIO10	
	GPIO11	
	GPIO12	
	GPIO13	
	GPIO14	
	GPIO15	
IRQ	IRQ	IRQ(SPI/OSPI/EXMC)
LATCH0	LATCH0	LATCH0(SPI/OSPI/EXMC)
LATCH1	LATCH1	LATCH1(SPI/OSPI/EXMC)
GDETHC_NRST	RSTN	RSTN

### 3. 入门指南

评估板使用 DC-005 连接器提供 5V 电源。通过 JP1 给芯片供电方式。下载程序到 GD32H7xx 系列芯片需要一套 J-Link 或者使用 GD-Link 工具，在选择了正确的启动方式并且上电后，LEDPWR 将被点亮，表明评估板供电正常。

所有例程提供了 Keil 版本，其中 Keil 版的工程是基于 Keil MDK-ARM 5.28 uVision5 创建的。在使用过程中有如下几点需要注意：

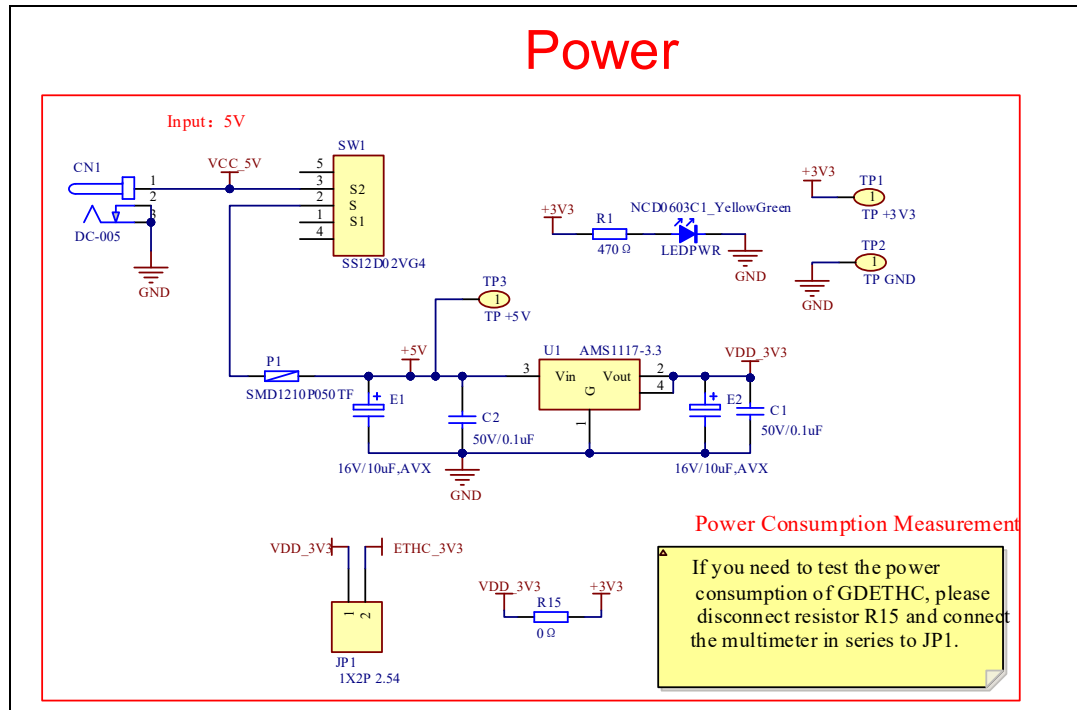
- 1、如果使用 Keil uVision5 打开工程，安装 GigaDevice.GD32H7xx\_DFP.1.2.0.pack，以加载相关文件。
- 2、当你使用开发板前请确认开发板上的 EEPROM 中是否已下载对应的配置文件，如未更新相关配置文件请参考 AN246 文档中 EEPROM 更新章节更新相关 XML 文件。

## 4. 硬件设计概述

#### 4.1. GDSCN832R-EVAL-V1.1

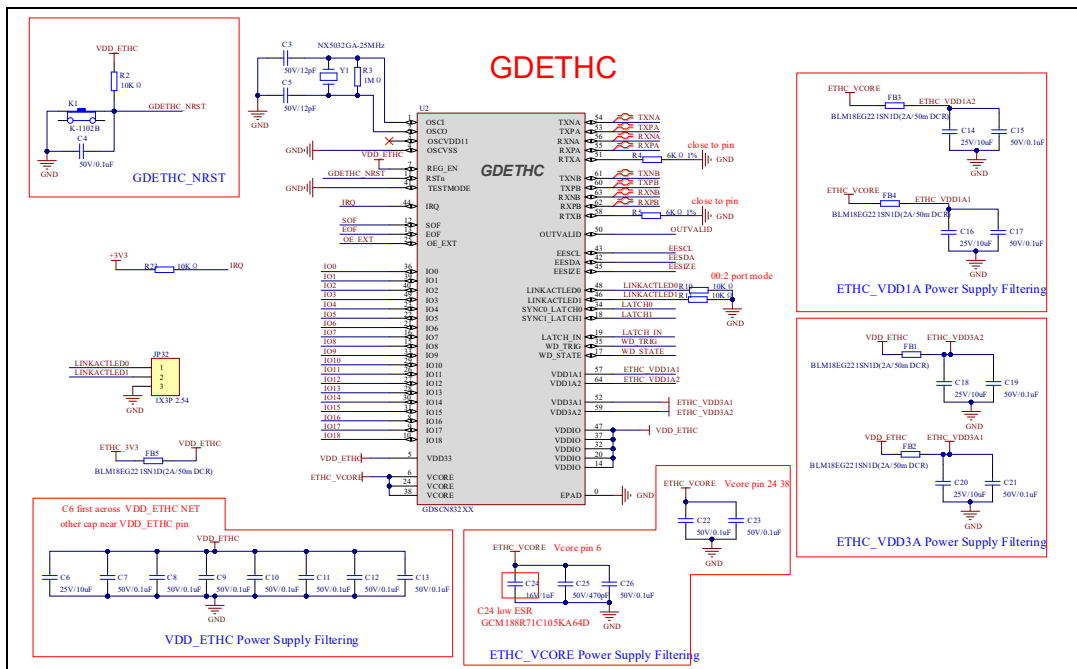
#### 4.1.1. 供电电源

图 4-1 供电电源原理图



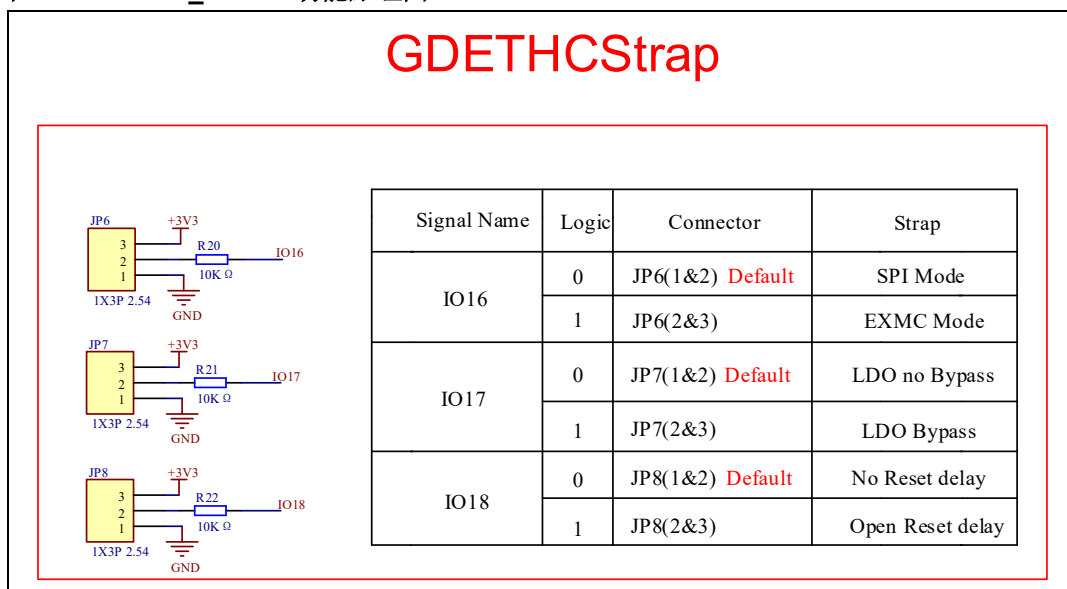
## 4.1.2. GDETHC

图 4-2 GDETHC原理图



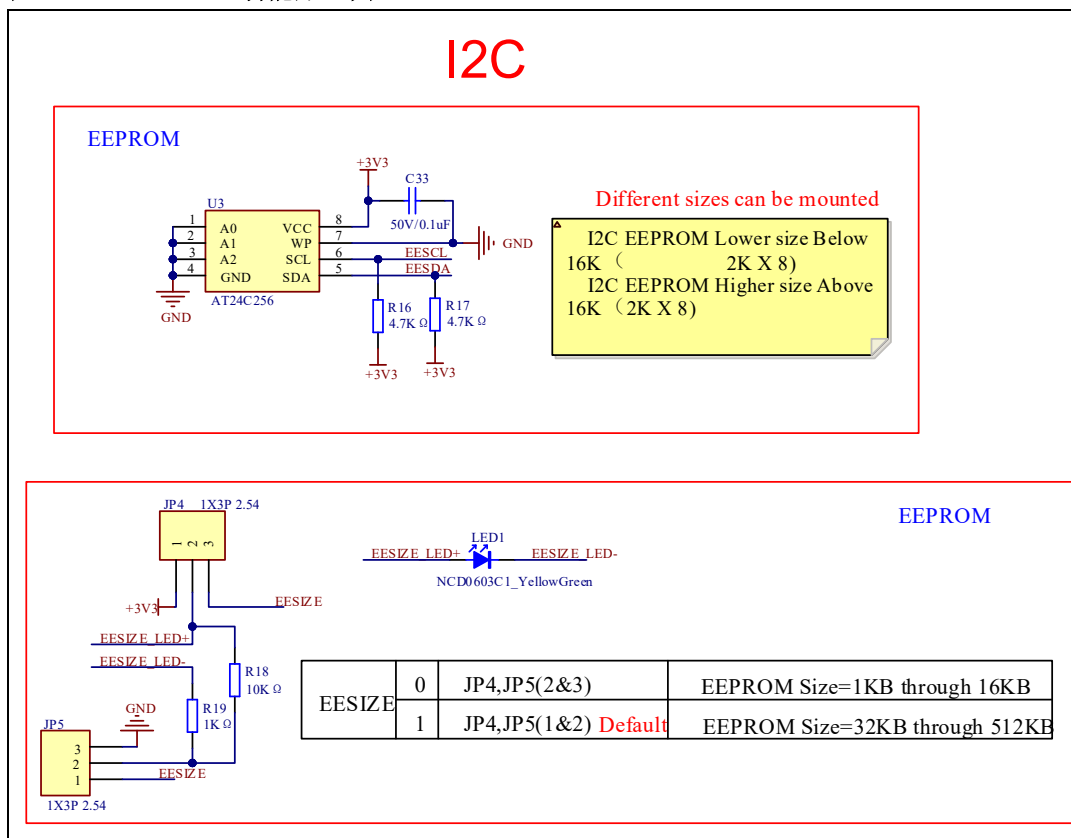
## 4.1.3. GDETHC\_STRAP

图 4-3 GDETHC\_STRAP功能原理图



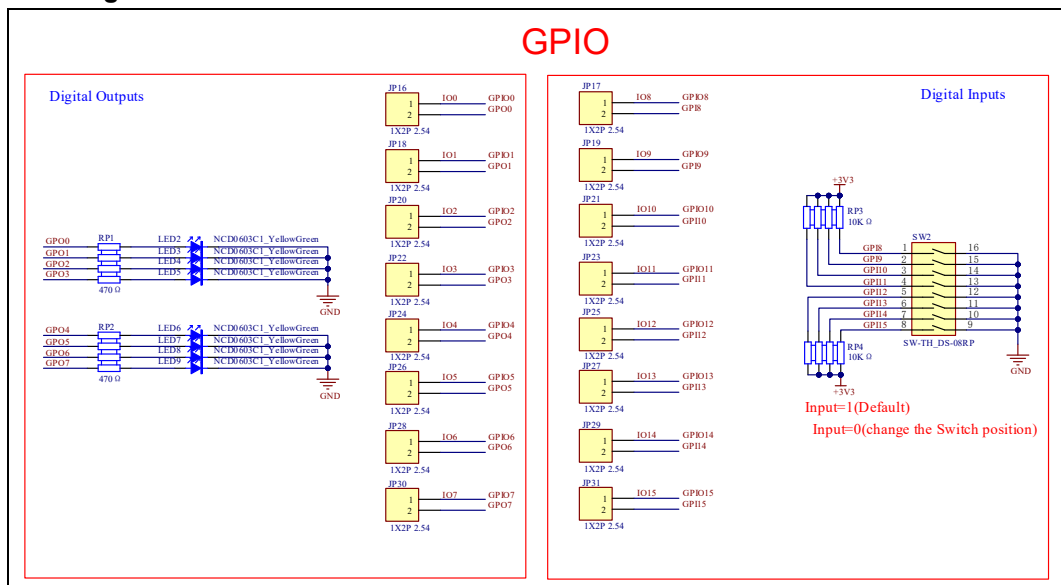
## 4.1.4. I2C EEPROM

图 4-4 I2C EEPROM功能原理图



## 4.1.5. Digital IO

图 4-5 Digital IO功能原理图

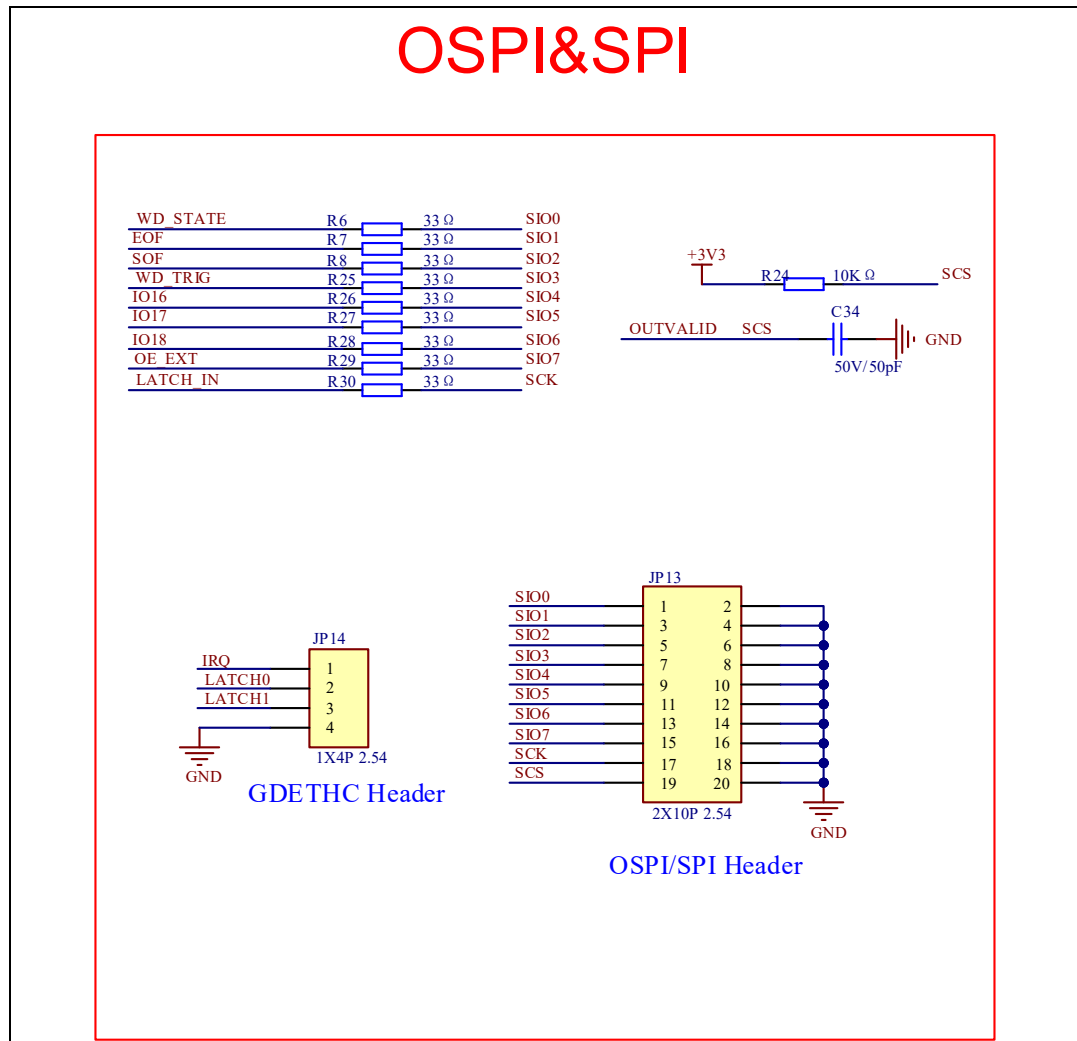


## 图 4-6 Ethernet 功能原理图



## 4.1.7. SPI+OSPI

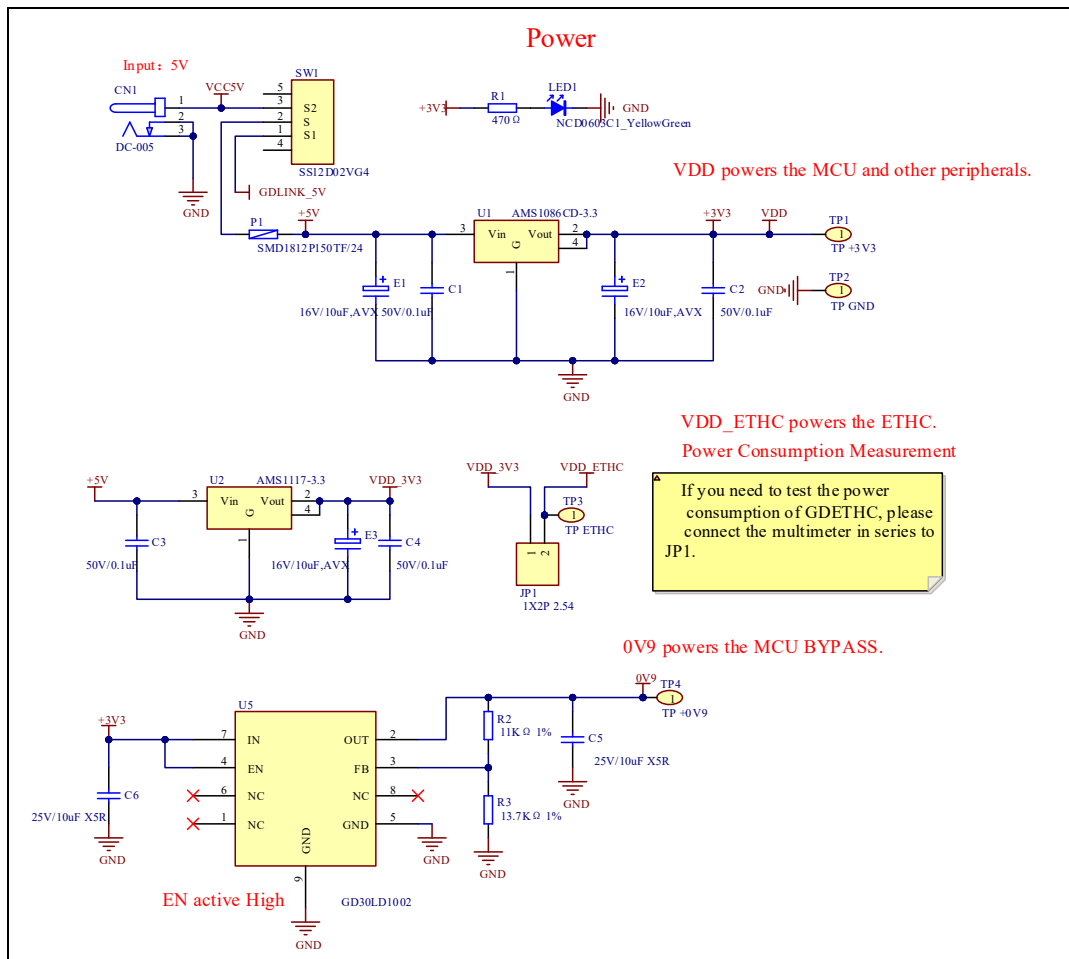
图 4-7 SPI &amp; OSPI功能原理图



## 4.2. GD32H759I-ESC-EVAL-V1.0

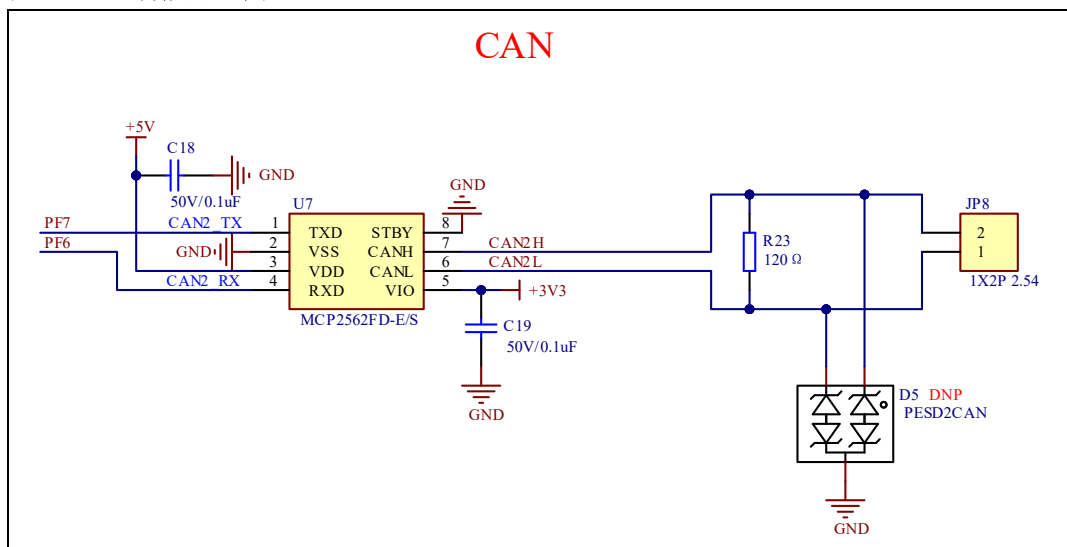
### 4.2.1. 供电电源

图 4-8 供电电源原理图



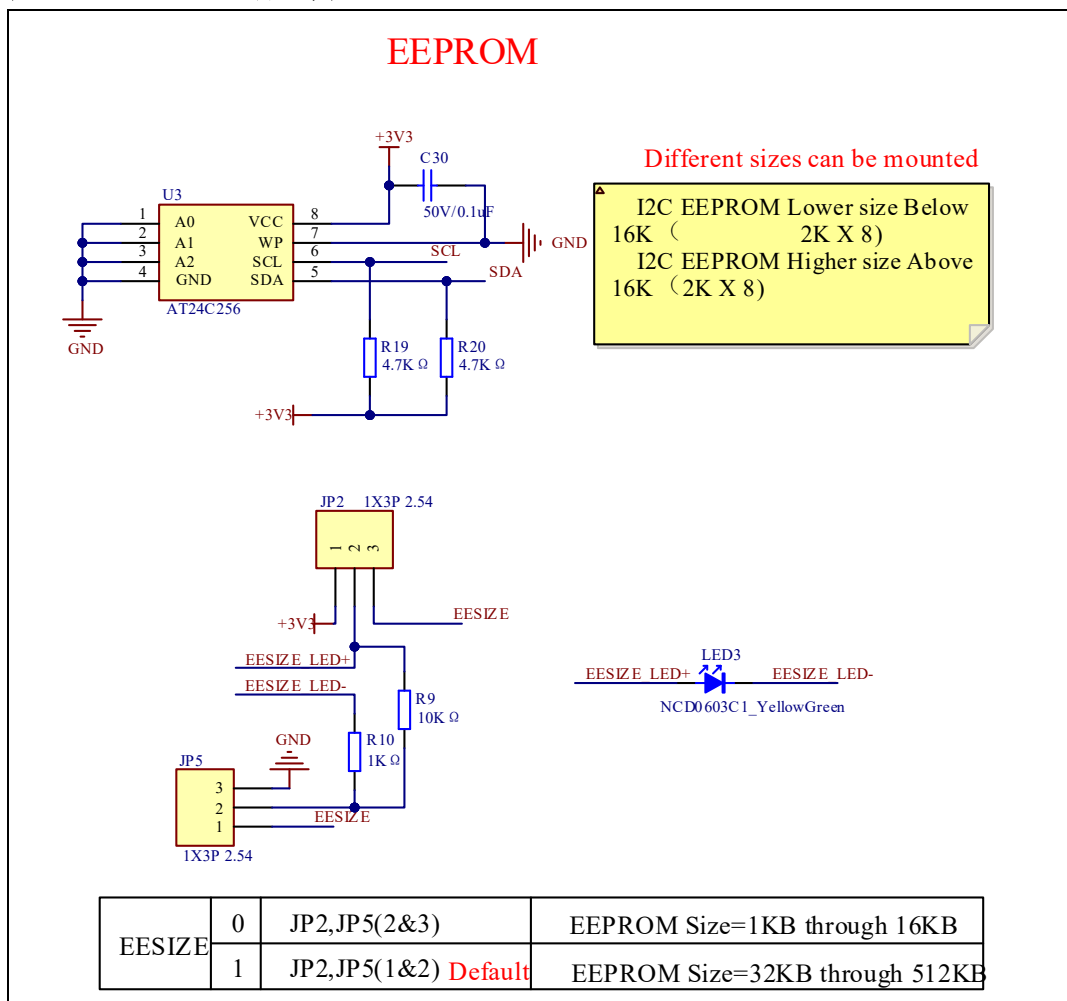
## 4.2.2. CAN

图 4-9 CAN功能原理图



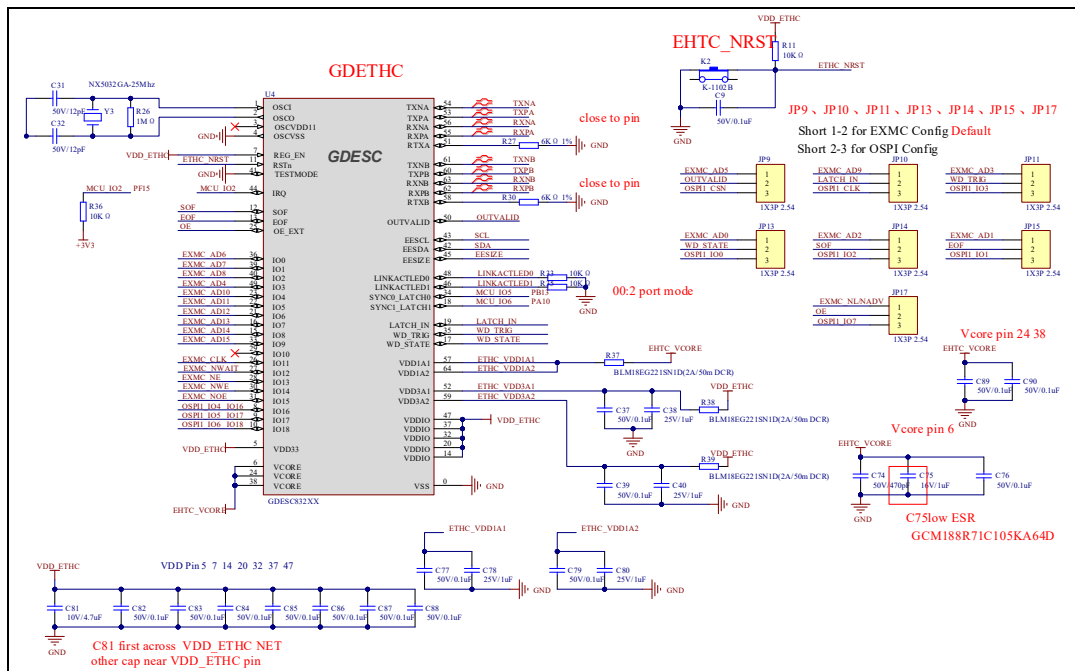
## 4.2.3. I2C EEPROM

图 4-10 I2C EEPROM原理图



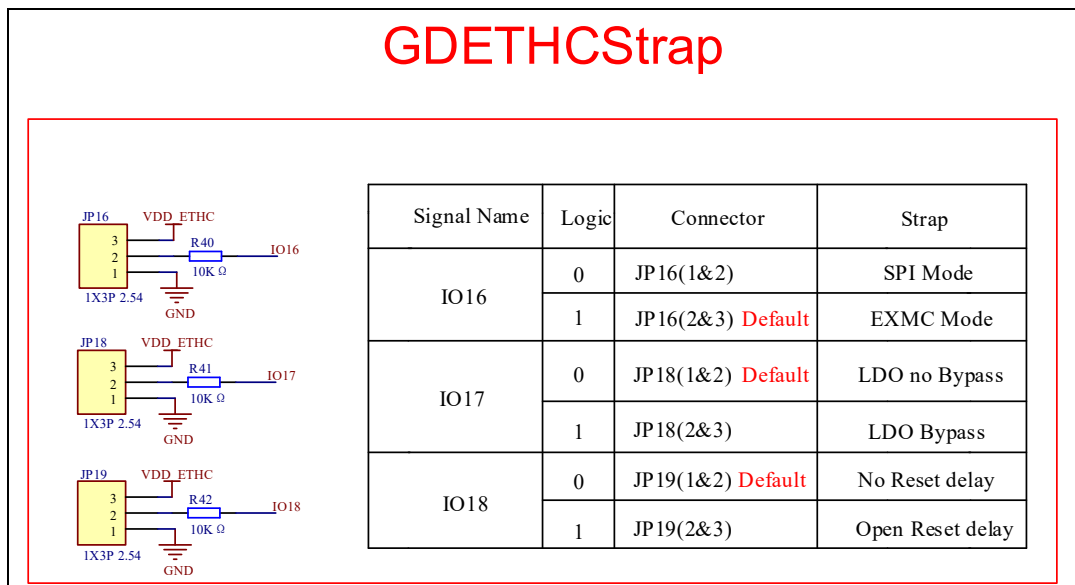
#### 4.2.4. GDETHC

图 4-11 GDETHC原理图



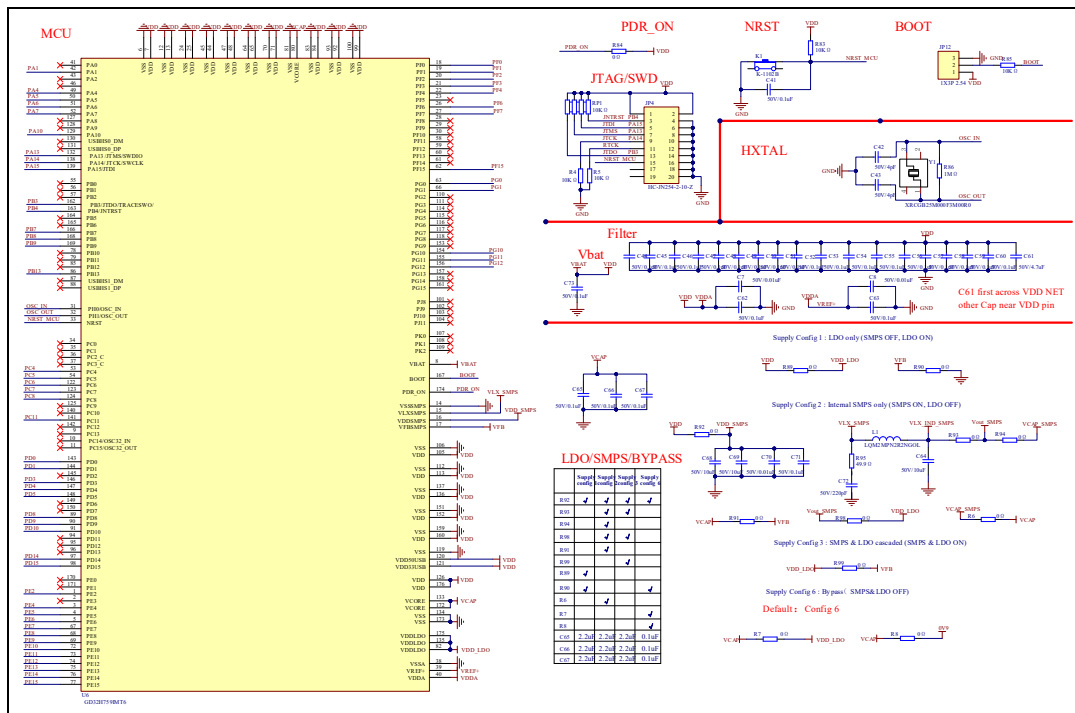
#### 4.2.5. GDETHC STRAP

图 4-12 GDETHC STRAP原理图



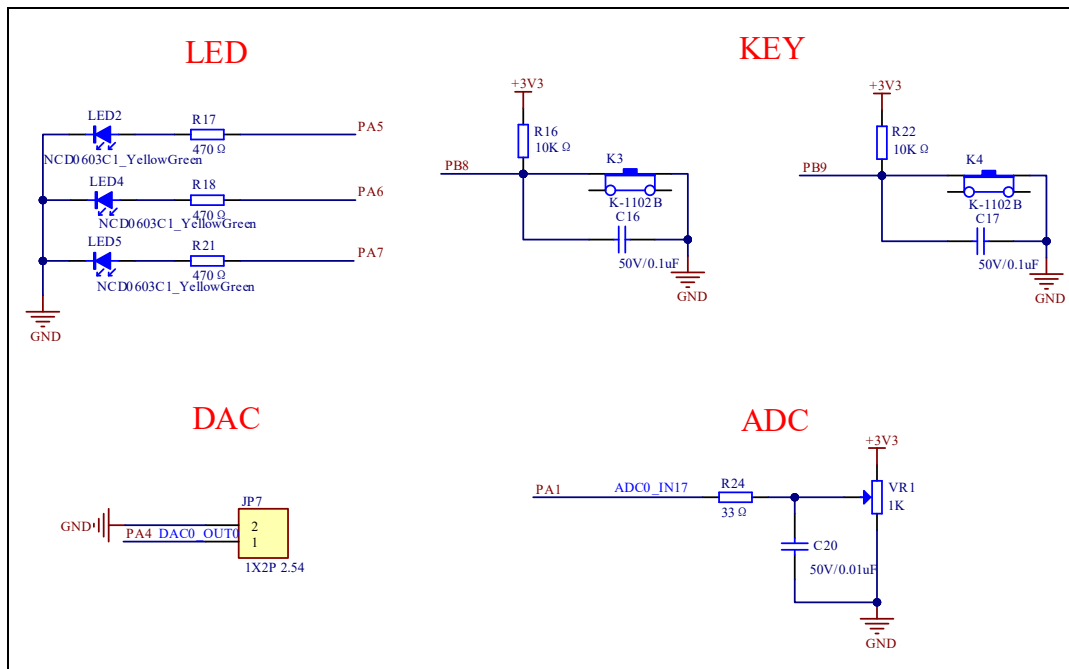
## 4.2.6. MCU

图 4-13 MCU原理图



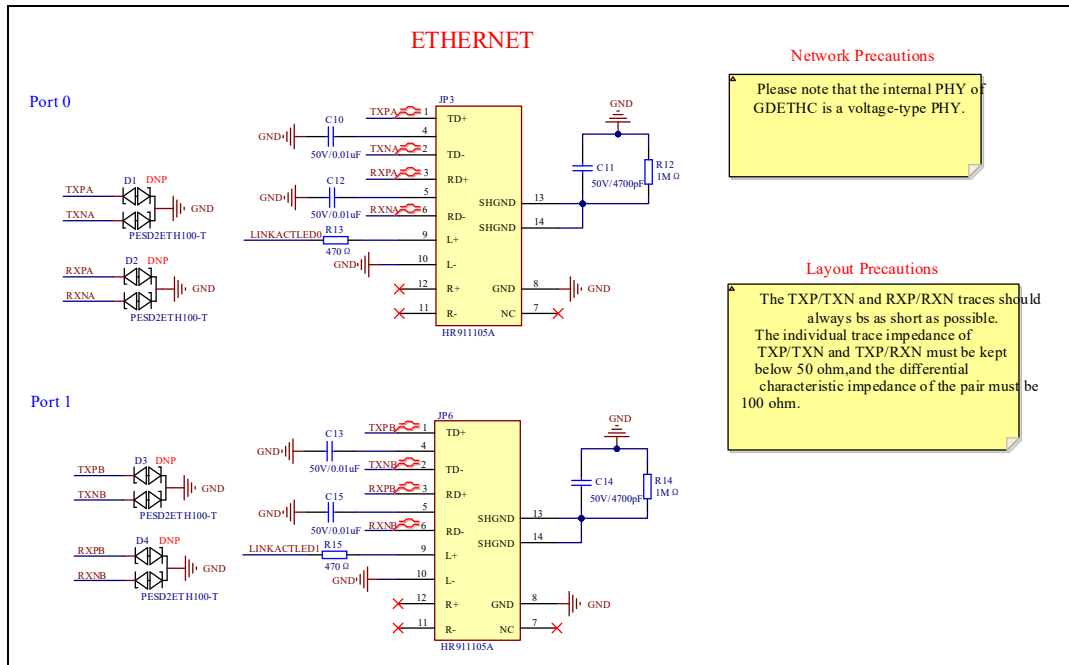
## 4.2.8. Extension

图 4-15 Extension原理图



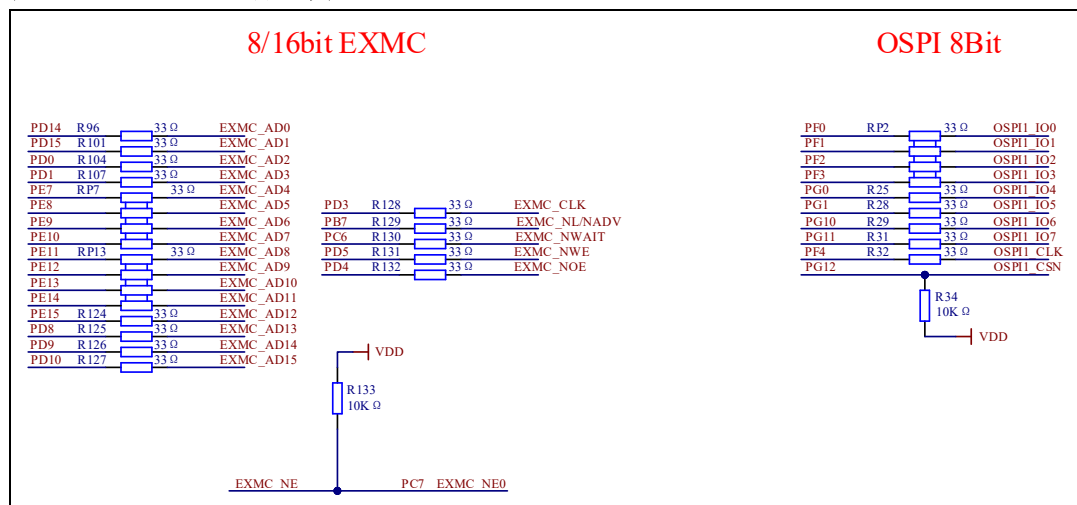
## 4.2.9. Ethernet

图 4-16 供电电源原理图



## 4.2.10. EXMC+OSPI

图 4-17 EXMC&amp;OSPI原理图



## 5. 例程使用指南

## 5.1. EtherCAT\_IO\_SPI

## 5.1.1. DEMO 目的

这个例程包括了 GDSCN832R 的以下功能：

- 学习使用 PDI 接口中 SPI 用于 ESC 通信 PDI 接口使用

## 5.1.2. DEMO 执行结果

使用跳线帽 JP9, JP10 跳线到 SCS 和 GPIO3, 确认 EVAL 板上跳线帽 JP4, JP5 跳线至 1 一侧, JP6, JP7, JP8 跳线至 L 侧。下载程序<01\_EtherCAT\_IO\_SPI>到 GD32H7xx 系列芯片上, 网线连接到 EVAL 板 Port0 上, 使用主站 TwinCAT 软件扫描从站, 观察 EVAL 板的 LED1 变成常亮, 表明 EtherCAT 的状态机切换到 OP 状态, 正常工作。

## 5.2. EtherCAT\_IO\_OSPI

## 5.2.1. DEMO 目的

这个例程包括了 GDSCN832R 的以下功能：

- 学习使用 PDI 接口中 OSPI 用于 ESC 通信 PDI 接口使用

### 5.2.2. DEMO 执行结果

本例程使用是 GD32H759I-ESC\_V1.0 开发板，跳线帽 JP9, JP10, JP11, JP12, JP13, JP14, JP15, JP16，跳线到 OSPI 一侧，确认 EVAL 板上跳线帽 JP2, JP5 跳线至 1 一侧，JP18, JP19 跳线至 L 侧，JP1 已使用跳线帽短接。下载程序<02\_EtherCAT\_IO\_OSPI>到 EVAL 板上的 GD32H759I 芯片上，网线连接到 EVAL 板 Port0 上，使用主站 TwinCAT 软件扫描从站，观察 EVAL 板的 LED3 变成常亮，表明 EtherCAT 的状态机切换到 OP 状态，正常工作。

## 5.3. EtherCAT\_IO\_EXMC

### 5.3.1. DEMO 目的

这个例程包括了 GDSCN832R 的以下功能：

- 学习使用 PDI 接口中 EXMC 用于 ESC 通信 PDI 接口使用

### 5.3.2. DEMO 执行结果

本例程使用是 GD32H759I-ESC\_V1.0 开发板，跳线帽 JP9, JP10, JP11, JP12, JP13, JP14, JP15, JP16，跳线到 EXMC 一侧，确认 EVAL 板上跳线帽 JP2, JP5 跳线至 1 一侧，JP18, JP19 跳线至 L 侧，JP1 已使用跳线帽短接。下载程序<03\_EtherCAT\_IO\_EXMC>到 EVAL 板上的 GD32H759I 芯片上，网线连接到 EVAL 板 Port0 上，使用主站 TwinCAT 软件扫描从站，观察 EVAL 板的 LED3 变成常亮，表明 EtherCAT 的状态机切换到 OP 状态，正常工作。

## 6. 版本历史

表 6-1 版本历史

版本号.	说明	日期
1.0	初稿发布	2024 年 11 月 29 日
1.1	1.修改 SPI 的跳帽连接描述 2.增加 OSPI&EXMC 的 DEMO 描述	2025 年 7 月 31 日

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