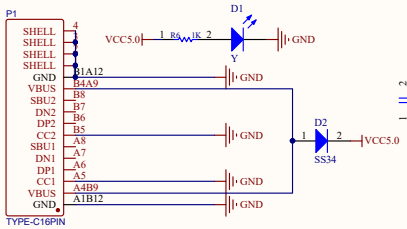
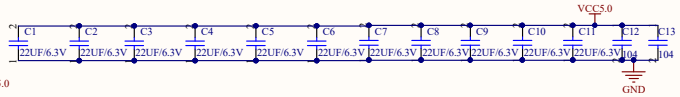
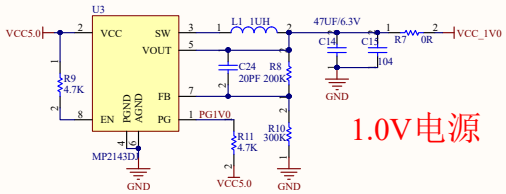
第一部分 ZYNQ的电源系统

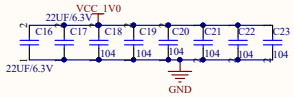
上电顺序：1.0V->1.8V->1.5V->3.3V

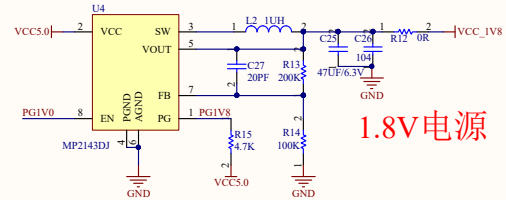




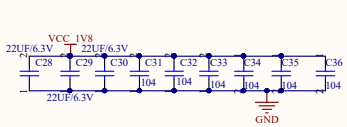


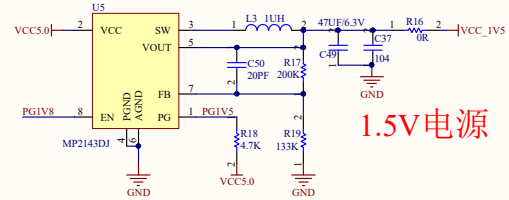
1.0V电源



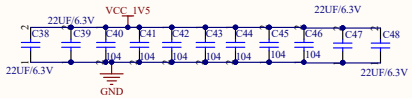


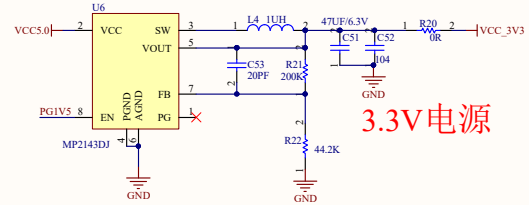
1.8V电源



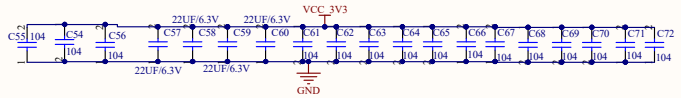


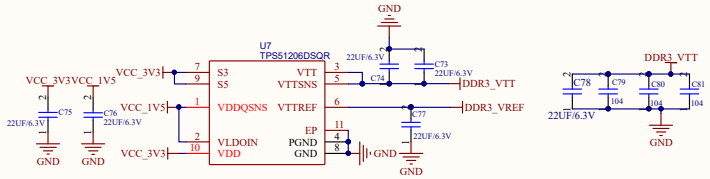
1.5V电源





3.3V电源



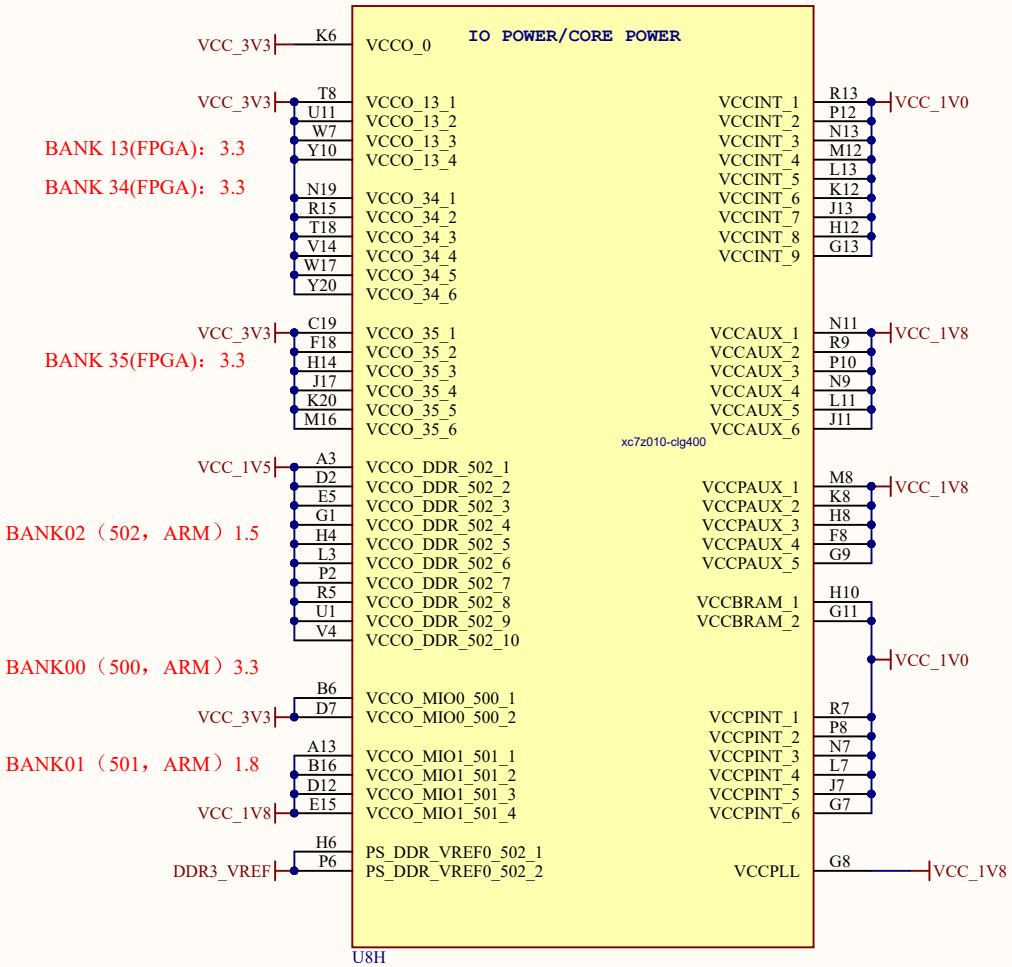


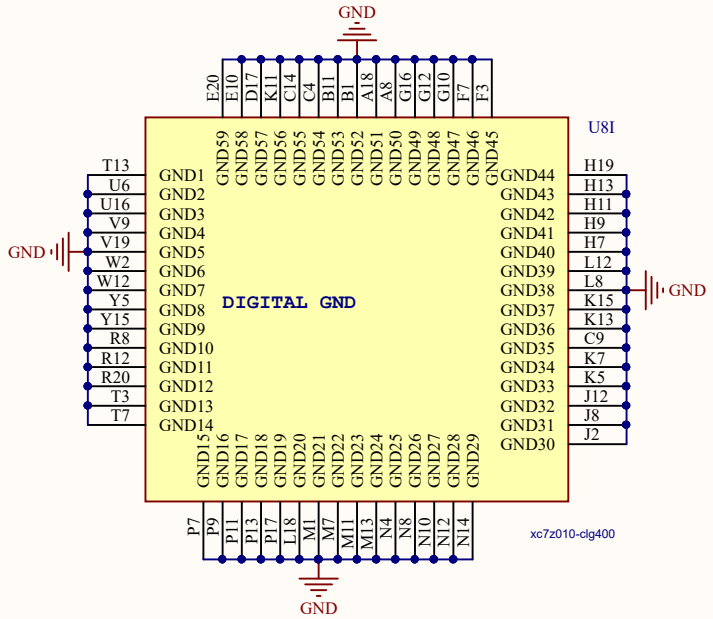
DDR3的VTT和VREF电源

ZYNQ内核电源：1.0V

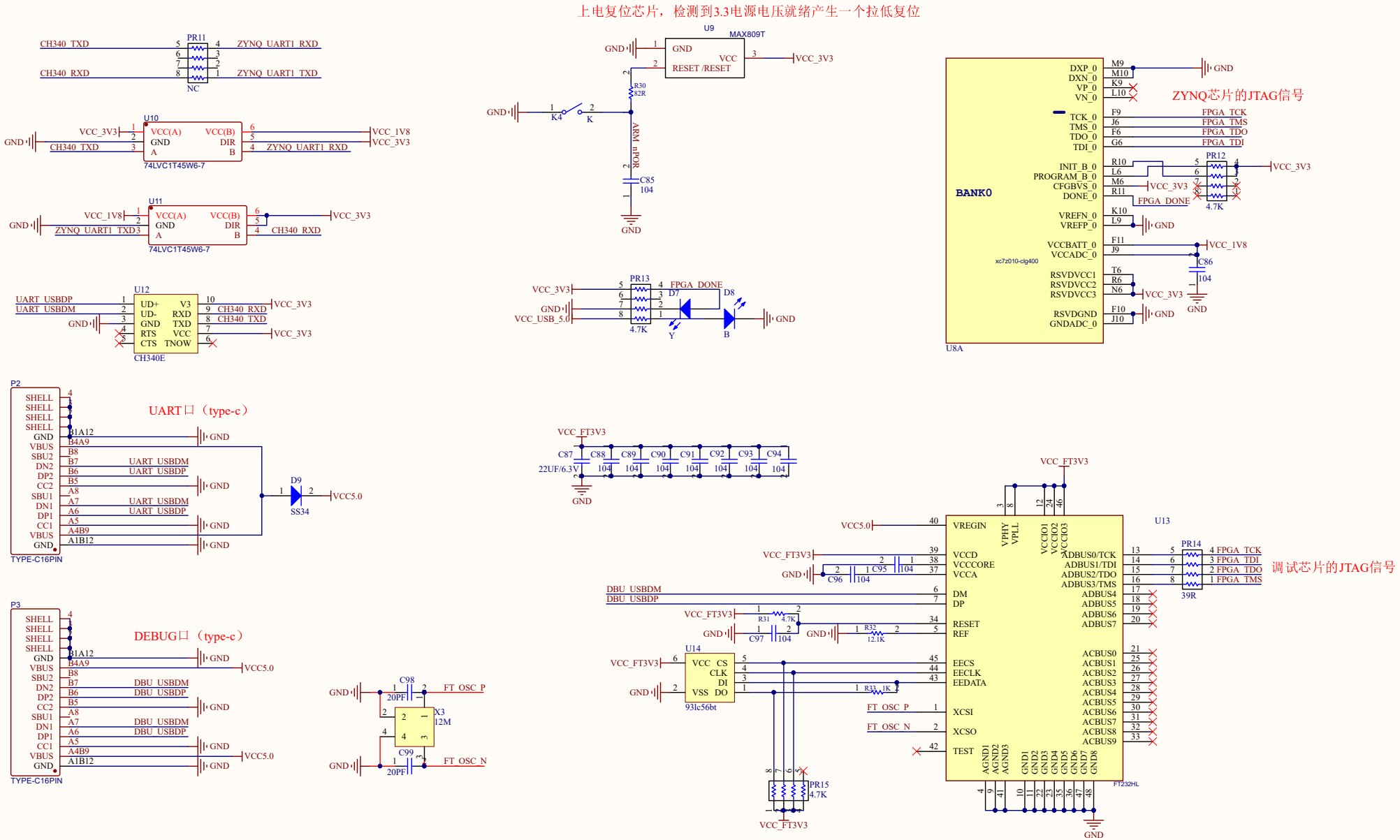
DDR3的电源：1.5V

第二部分 ZYNQ芯片的电源引脚

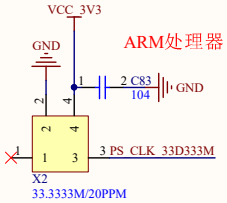




第三部分 ZYNQ的JTAG和调试器电路

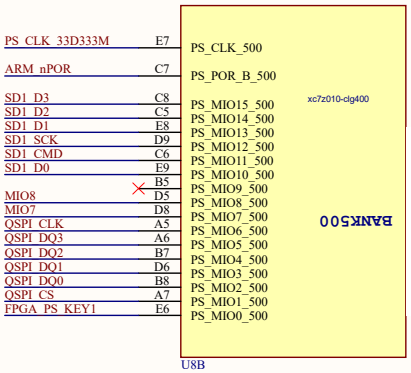


第四部分 ZYNQ的PS部分BANK（仅用于ARM）



ARM处理器（PS）的系统时钟

ARM的bank0（500）,这个bank所有IO电平3.3V



几个常用的配置MIO[5:2]：

1、JTAG独立配置0001，比较少用；

2、JTAG级联配置0000，JTAG调试常用；

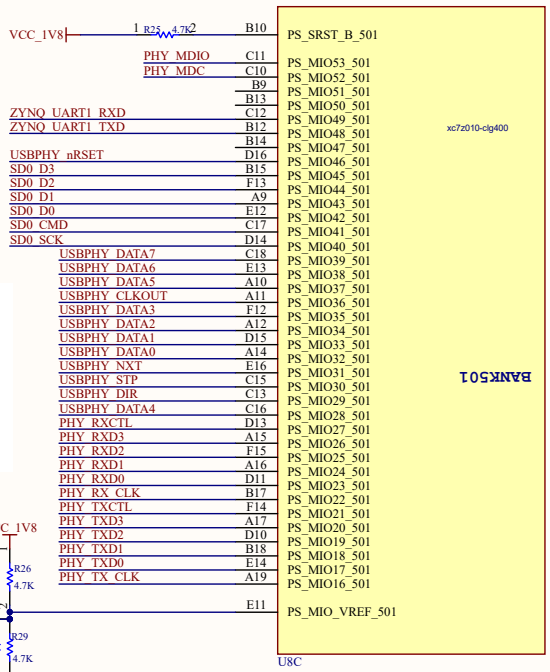
3、FLASH启动：Quad-SPI mode，1000；

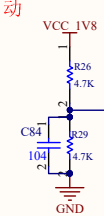
4、SD card：1100.

平时MIO2、3连接QSPI的存储器，状态上电默认为0

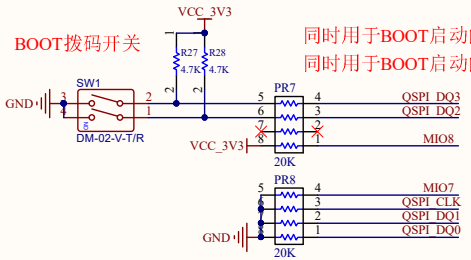
所以不用管,只管MIO4和5，两个决定是FLASH还是SD启动

ARM的bank1（501）,这个bank所有IO电平1.8V





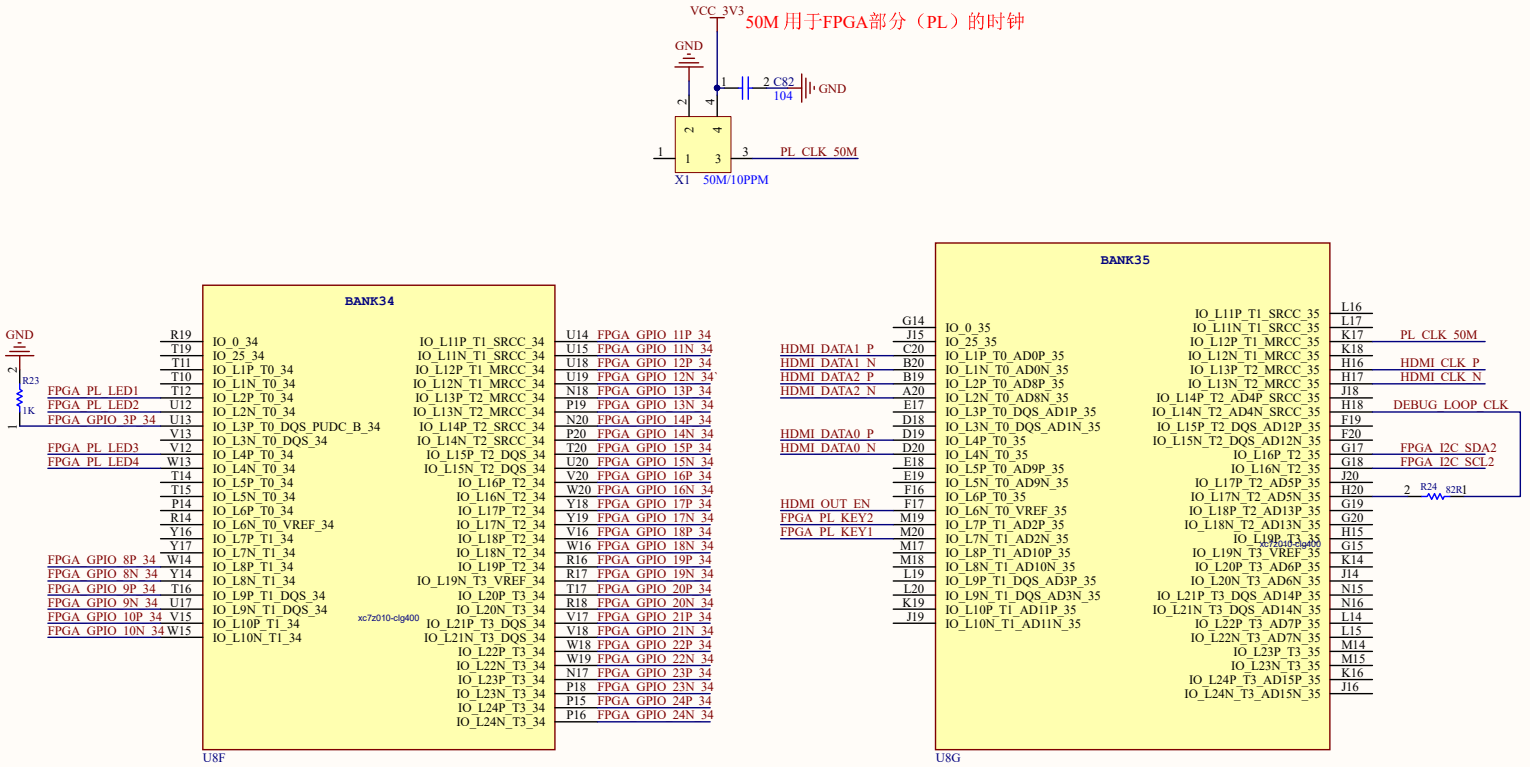
BOOT拨码开关



同时用于BOOT启动的引脚：MIO5(QSPI_DQ3)

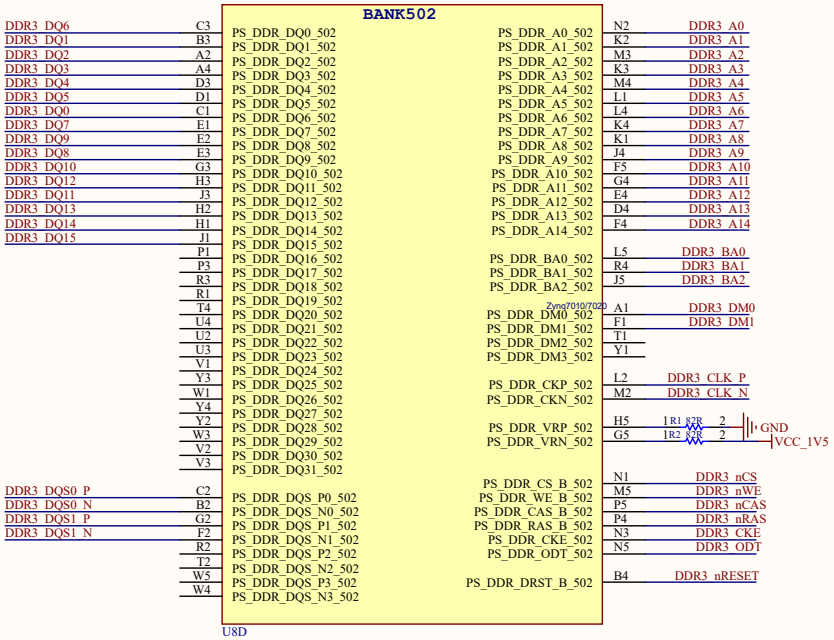
同时用于BOOT启动的引脚：MIO4(QSPI_DQ2)

第五部分 ZYNQ的PL部分的BANK（FPGA部分）

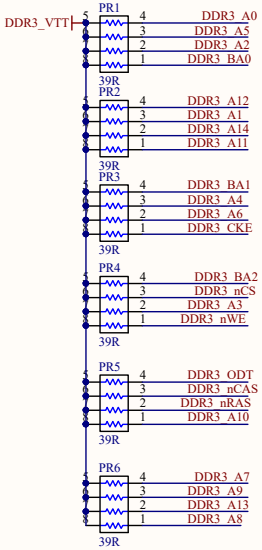


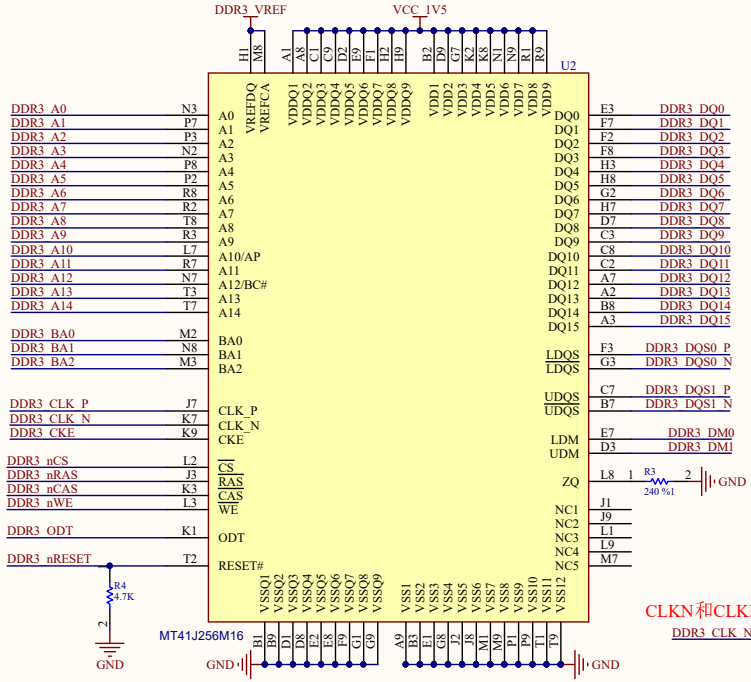
第六部分 ZYNQ的PS部分的DDR3

DDR3的DQ和DQS，DM等长，DQSP和DQSN还需要做差分

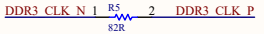


A0-A14以及其控制线需要做等长，并且终端需要匹配39R电阻上拉到VTT

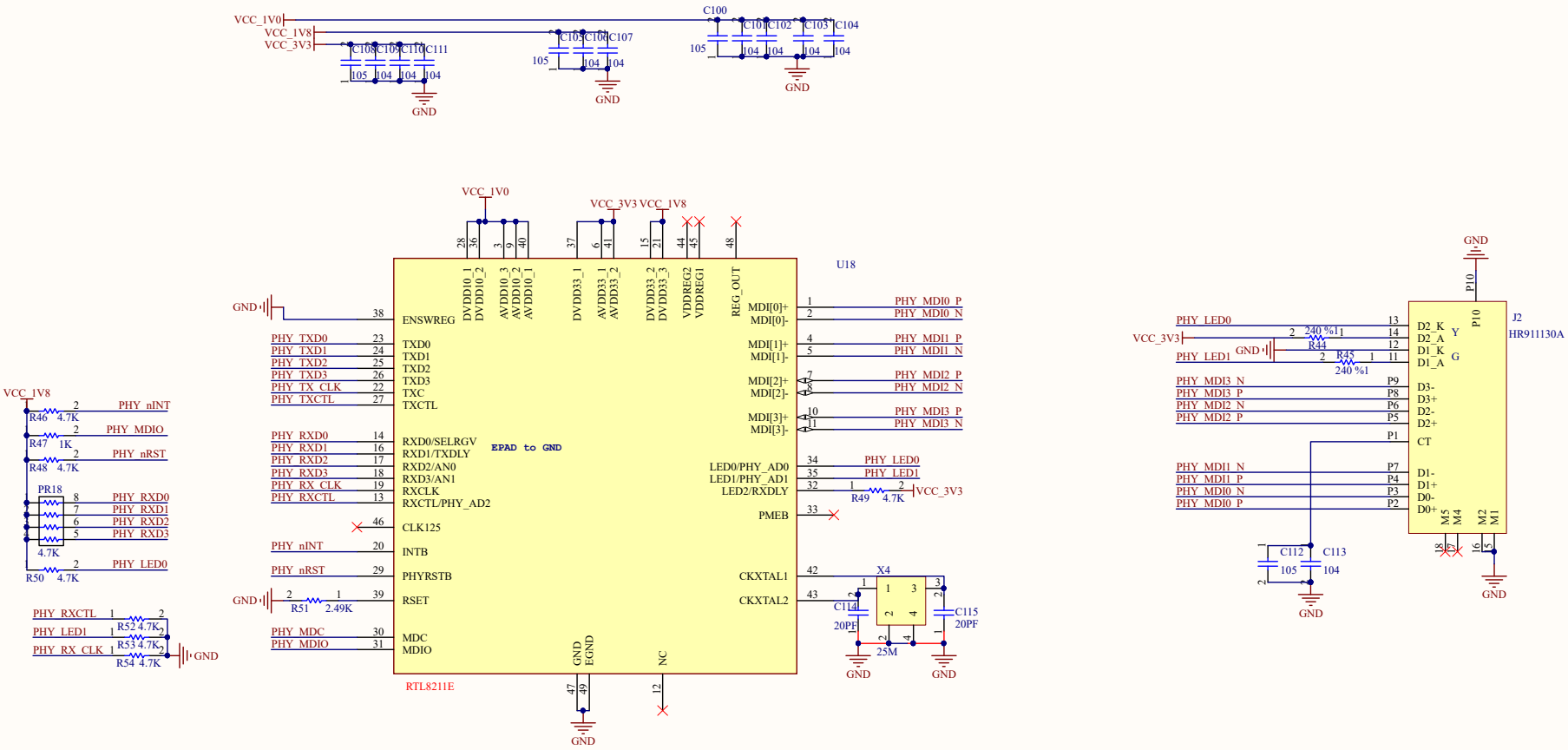




CLKN和CLKP需要做差分，并且与地址线等长

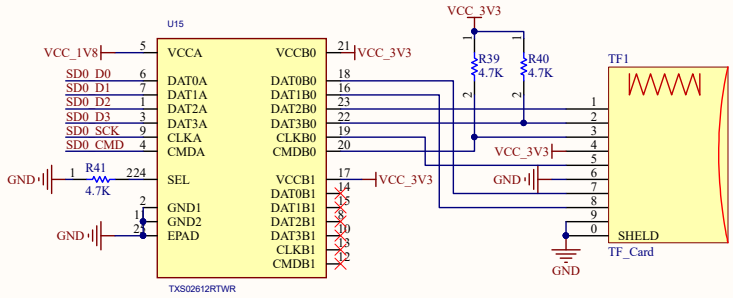


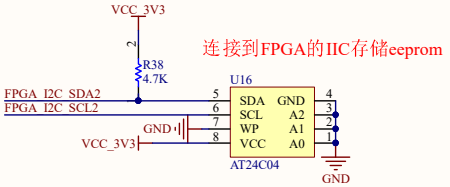
第七部分 ZYNQ的PS部分千兆网口RTL8211E电路



第八部分 ZYNQ存储，QSPI FLASH,SD卡，EEPROM

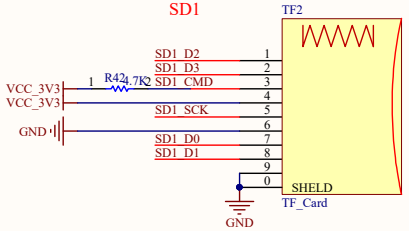
SD卡座（master，TF1，支持从这个TF卡启动）
SD0
从TF（master）上电启动：BOO设置为11



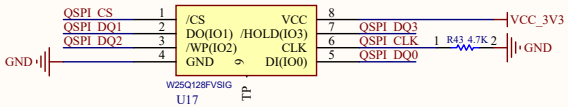


连接到FPGA的IIC存储eeprom

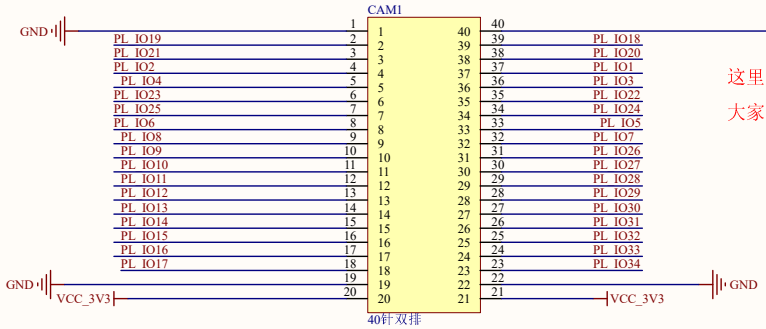
SD卡座（TF2，不支持启动）
SD1



系统的QSPI存储，上电启动
从QSPI存储器启动，BOOT设置为10



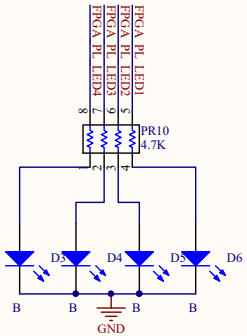
第九部分 开发板对外的用户扩展34个IO口及LED和按钮

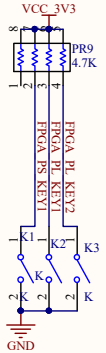


这里的IO排针大家对应原理图的网络标号关系来看

大家可以直接看PCB板子背面的丝印，直接对应ZYNQ芯片的引脚名字

EXT IO	
V5.0	GND
P15	U15
V15	W15
V17	U17
Y18	V18
Y19	W18
W19	U19
N17	U14
W14	Y14
P16	V16
R16	U18
T16	T17
W16	R17
R18	W20
P19	V20
P18	U20
N18	T20
N20	P20
GND	GND
V3.3	V3.3

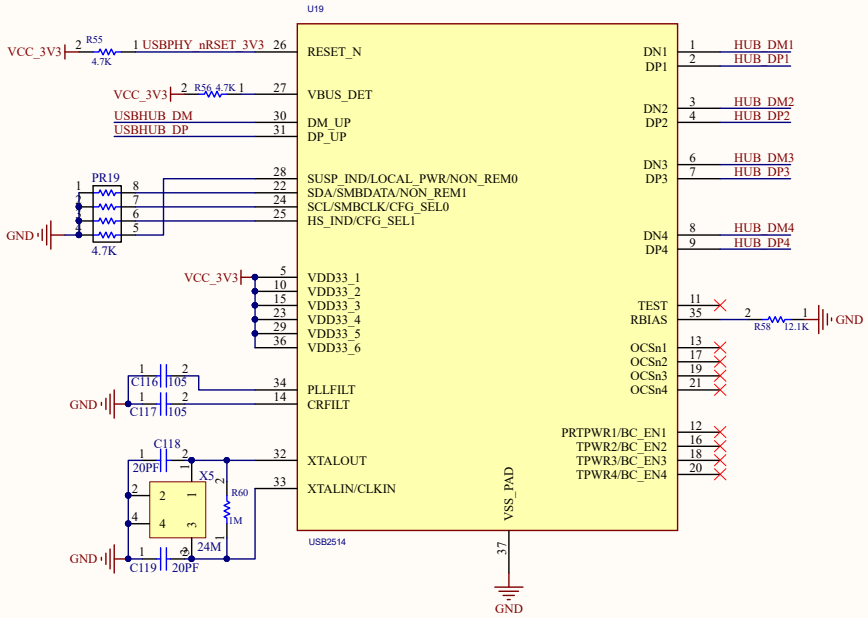


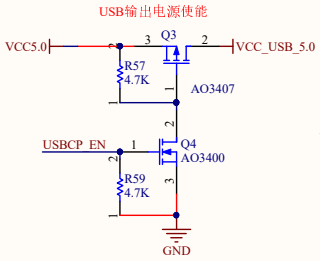


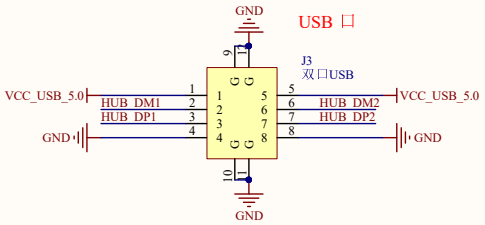
FPGA_GPIO_21P_34	PL_IO1
FPGA_GPIO_9N_34	PL_IO2
FPGA_GPIO_17P_34	PL_IO3
FPGA_GPIO_21N_34	PL_IO4
FPGA_GPIO_23P_34	PL_IO5
FPGA_GPIO_11P_34	PL_IO6
FPGA_GPIO_8P_34	PL_IO7
FPGA_GPIO_8N_34	PL_IO8
FPGA_GPIO_18P_34	PL_IO9
FPGA_GPIO_12P_34	PL_IO10
FPGA_GPIO_20P_34	PL_IO11
FPGA_GPIO_19N_34	PL_IO12
FPGA_GPIO_16N_34	PL_IO13
FPGA_GPIO_16P_34	PL_IO14
FPGA_GPIO_15N_34	PL_IO15
FPGA_GPIO_15P_34	PL_IO16
FPGA_GPIO_14N_34	PL_IO17

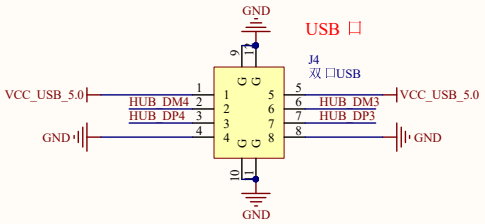
PL_IO18	FPGA_GPIO_24P_34
PL_IO19	FPGA_GPIO_11N_34
PL_IO20	FPGA_GPIO_10P_34
PL_IO21	FPGA_GPIO_10N_34
PL_IO22	FPGA_GPIO_17N_34
PL_IO23	FPGA_GPIO_22P_34
PL_IO24	FPGA_GPIO_22N_34
PL_IO25	FPGA_GPIO_12N_34
PL_IO26	FPGA_GPIO_24N_34
PL_IO27	FPGA_GPIO_19P_34
PL_IO28	FPGA_GPIO_9P_34
PL_IO29	FPGA_GPIO_18N_34
PL_IO30	FPGA_GPIO_20N_34
PL_IO31	FPGA_GPIO_13N_34
PL_IO32	FPGA_GPIO_23N_34
PL_IO33	FPGA_GPIO_13P_34
PL_IO34	FPGA_GPIO_14P_34

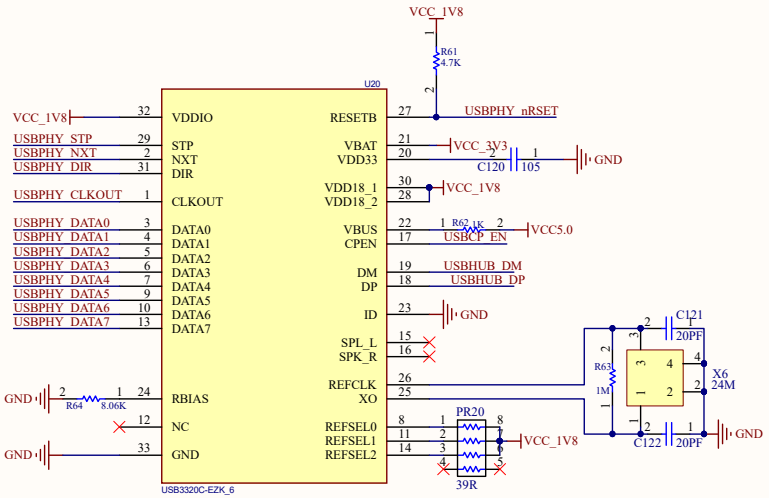
第十部分 开发板的USB电路，以及USB HUB电路











第十一部分 HDMI电路