

# 野火\_EP4CE10\_Pro\_原理图

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Title 野火\_EP4CE10\_Pro\_原理图

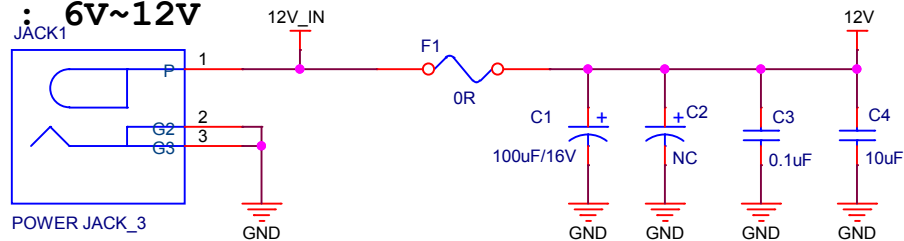
Size A4	Document Number 目录	Rev V1.0
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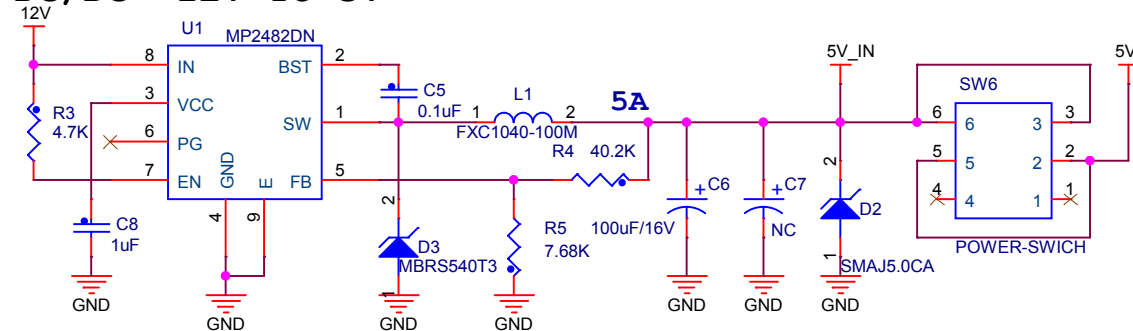
历史版本

版本号	日期	设计	描述
V0.1	2019-11-21	cancore	初始版本
V0.2	2019-11-27	cancore	调整SDRAM的时钟输出引脚，HDMI的差分添加电容隔离直流
V0.3	2019-12-22	cancore	修改nCE引脚连接，EEPROM地址更改，按键连接更改
V0.3	2020-05-19	cancore	整理对外发布，稳定版

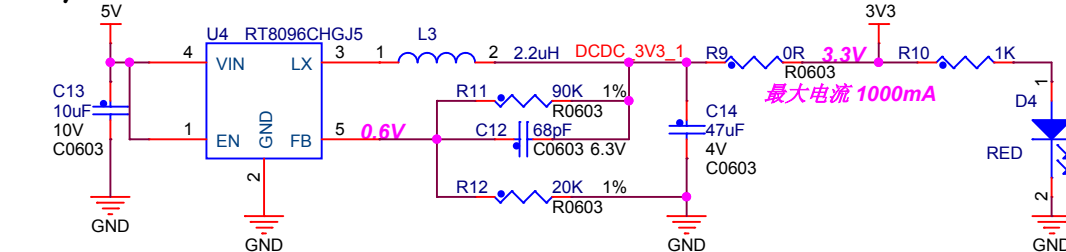
## DC IN : 6V~12V



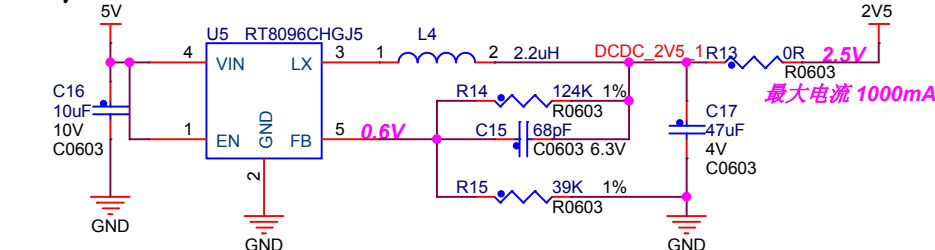
## DC/DC 12V To 5V



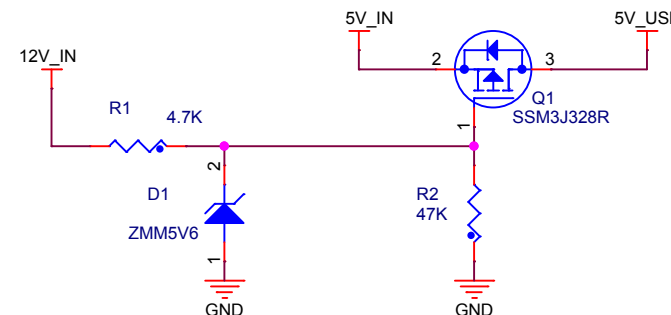
## DC/DC 5V To 3.3V



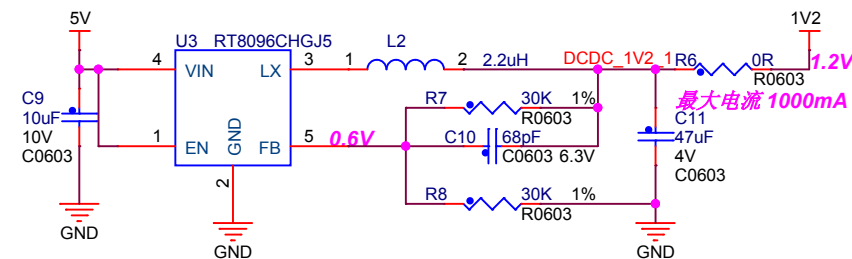
## DC/DC 5V To 2.5V



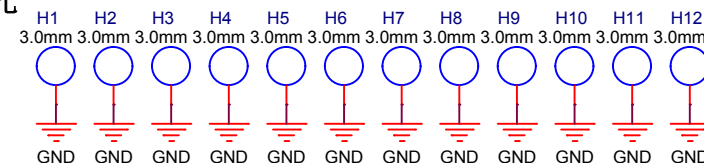
外部电源供电时断开USB供电，防止灌电流，保护电脑USB口



## DC/DC 5V To 1.2V



## 定位孔



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U6-1

IO_B1_ B1/ DQS2L/CQ3L	B1	>>>	LEDS0_SHCP	[13]
IO_B1_ C1/ DIFFIO_L1N/ DATA1,ASDO	C1	>>>	EPCS_ASDO	[8]
IO_B1_ C2/ DIFFIO_L1P	C2	>>>	VGA_HSYNC	[12]
IO_B1_ D1/ DIFFIO_L2N	D1	>>>	VGA_VSYNC	[12]
IO_B1_ D2/ DIFFIO_L2P/ FLASH_NCE,NCSSO	D2	>>>	FLASH_NCE	[8]
IO_B1_ D4	D4	>>>	LCD_DATA9	[12,15]
IO_B1_ E5	E5	>>>	LCD_DATA10	[12,15]
IO_B1_ F1/ DIFFIO_L3N	F1	>>>	LCD_DATA11	[12,15]
IO_B1_ F2/ DIFFIO_L3P	F2	>>>	LCD_DATA12	[12,15]
VREFB1N0	F3	>>>	LCD_DATA13	[12,15]
IO_B1_ F5	F5	>>>	LCD_DATA14	[12,15]
IO_B1_ G1/ DIFFIO_L4N	G1	>>>	LCD_DATA15	[12,15]
O_B1_ G2/ DIFFIO_L4P/ DQS0L/CQ1L,DPCLK0	G2	>>>	LCD_DATA0	[12,15]
IO_B1_ G5	G5	>>>	LCD_DATA1	[12,15]
IO_B1_ H2/ DATA0	H2	>>>	EPCS_DATA0	[8]

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U6-2

IO_B2_ K5/ RUP1/ DQ1L	K5	>>>	LCD_DATA2	[12,15]
IO_B2_ L4/ RDN1/ DQ1L	L4	>>>	LCD_DATA3	[12,15]
IO_B2_ J1/ DIFFIO_L5N/ DQ1L	J1	>>>	LCD_DATA4	[12,15]
IO_B2_ J2/ DIFFIO_L5P/ DQ1L	J2	>>>	LCD_DATA5	[12,15]
IO_B2_ L6/ DIFFIO_L6N	L6	>>>	LCD_DATA6	[12,15]
IO_B2_ K6/ DIFFIO_L6P	K6	>>>	LCD_DATA7	[12,15]
IO_B2_ J6	J6	>>>	LCD_DATA8	[12,15]
IO_B2_ K1/ DIFFIO_L7N/ DQ1L	K1	>>>	LCD_DE	[12,15]
IO_B2_ K2/ DIFFIO_L7P	K2	>>>	LCD_VSYNC	[12,15]
IO_B2_ L1/ DIFFIO_L8N/ DQ1L	L1	>>>	LCD_HSYNC	[12,15]
IO_B2_ L2/ DIFFIO_L8P/ DQS1L/CQ1L#,DPCLK1	L2	>>>	LCD_PCLK	[12,15]
VREFB2N0	L3	>>>	LCD_BL	[12,15]
IO_B2_ N1/ DIFFIO_L9N/ DQ1L	N1	>>>	CTP_SCL	[12]
IO_B2_ N2/ DIFFIO_L9P/ DQ1L	N2	>>>	CTP_SDA	[12]
IO_B2_ P1/ DIFFIO_L10N/ DM1L/BWS#1L	P1	>>>	CTP_INT	[12,15]
IO_B2_ P2/ DIFFIO_L10P/ DQ1L	P2	>>>	CTP_RST	[12,15]
IO_B2_ R1/ DQS3L/CQ3L#	R1	>>>	LEDS0_DS	[13]

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U6-3

IO_B3_ R4/ PLL1_CLKOUTP	R4	>>>	SDRAM_CLK	[6]
IO_B3_ T4/ PLL1_CLKOUTN	T4	>>>	SDRAM_D13	[6]
IO_B3_ L7/ DQ3B	L7	>>>	LED0	[10,15]
IO_B3_ M6/ DQ3B	M6	>>>	LED1	[10]
IO_B3_ P3/ DIFFIO_B1N/ DM3B/BWS#3B	P3	>>>	LED2	[10]
IO_B3_ N3/ DIFFIO_B1P	N3	>>>	LED3	[10]
IO_B3_ T3/ DIFFIO_B2N	T3	>>>	SDRAM_D14	[6]
IO_B3_ R3/ DIFFIO_B2P/ DQ3B	R3	>>>	SDRAM_D0	[6]
IO_B3_ N6/ DIFFIO_B4N/ DQ3B	N6	>>>	UART1_RX	[15]
IO_B3_ N5/ DIFFIO_B4P/ DQ3B	N5	>>>	UART1_TX	[15]
IO_B3_ K8/ DIFFIO_B5N	K8	>>>	UART2_RX	[7,15]
IO_B3_ M7/ DIFFIO_B5P/ DQS3B/CQ3B#	M7	>>>	UART2_TX	[7,15]
IO_B3_ T5/ DIFFIO_B6N	T5	>>>	SDRAM_D12	[6]
IO_B3_ R5/ DIFFIO_B6P/ DQ3B	R5	>>>	SDRAM_D2	[6]
IO_B3_ T6/ DIFFIO_B7N	T6	>>>	SDRAM_D11	[6]
IO_B3_ R6/ DIFFIO_B7P/ DQ3B	R6	>>>	SDRAM_D3	[6]
IO_B3_ T7/ DIFFIO_B8N/ DQS5B/CQ5B#	T7	>>>	SDRAM_D10	[6]
IO_B3_ R7/ DIFFIO_B8P/ DQ3B	R7	>>>	SDRAM_D4	[6]
IO_B3_ M8/ DIFFIO_B9N/ DM5B/BWS#5B	M8	>>>	SDRAM_D5	[6]
IO_B3_ L8/ DIFFIO_B9P/ DQ3B	L8	>>>	UART3_RX	[7,15]
VREFB3N0	P6	>>>	UART3_TX	[7,15]
IO_B3_ P8/ DIFFIO_B10N/ DQ5B	P8	>>>	SDRAM_D8	[6]
IO_B3_ N8/ DIFFIO_B10P/ DQ5B	N8	>>>	SDRAM_D7	[6]
IO_B3_ T8/ DIFFIO_B11N	T8	>>>	SDRAM_D9	[6]
IO_B3_ R8/ DIFFIO_B11P	R8	>>>	SDRAM_D6	[6]
IO_B3_ T2/ DQS1B/CQ1B#,DPCLK2	T2	>>>	SDRAM_D15	[6]

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U6-4

IO_B4_ N11/ RDN2	N11	>>>	SDRAM_A3	[6]
IO_B4_ M10/ RUP2	M10	>>>	SDRAM_DM0	[6]
IO_B4_ T9/ DIFFIO_B12N	T9	>>>	SDRAM_D1	[6]
IO_B4_ R9/ DIFFIO_B12P	R9	>>>	SDRAM_CKE	[6]
IO_B4_ L9/ DIFFIO_B13N	L9	>>>	SDRAM_WE	[6]
IO_B4_ K9/ DIFFIO_B13P	K9	>>>	LEDS0_STCP	[13]
IO_B4_ M9/ DIFFIO_B14P	M9	>>>	SDRAM_DM1	[6]
IO_B4_ N9/ DIFFIO_B14N/ DQ5B	N9	>>>	SDRAM_A2	[6]
IO_B4_ P9/ DQS2B/CQ3B	P9	>>>	SDRAM_A9	[6]
VREFB4N0	P11	>>>	SDRAM_A0	[6]
IO_B4_ T10/ DIFFIO_B15N/ DQS4B/CQ5B	T10	>>>	SDRAM_A8	[6]
IO_B4_ R10/ DIFFIO_B15P/ DQ5B	R10	>>>	SDRAM_CAS	[6]
IO_B4_ T11/ DIFFIO_B16N	T11	>>>	SDRAM_A7	[6]
IO_B4_ R11/ DIFFIO_B16P/ DQ5B	R11	>>>	SDRAM_RAS	[6]
IO_B4_ T12/ DIFFIO_B17N/ DQ5B	T12	>>>	SDRAM_A6	[6]
IO_B4_ R12/ DIFFIO_B17P/ DQ5B	R12	>>>	SDRAM_CS	[6]
IO_B4_ L10/ DIFFIO_B18N	L10	>>>	CAN_RX	[7]
IO_B4_ K10/ DIFFIO_B18P	K10	>>>	CAN_TX	[7]
IO_B4_ T13/ DIFFIO_B19N/ DQ5B	T13	>>>	SDRAM_A5	[6]
IO_B4_ R13/ DIFFIO_B19P	R13	>>>	SDRAM_BA0	[6]
IO_B4_ R14	R14	>>>	SDRAM_BA1	[6]
IO_B4_ T15/ DIFFIO_B20N/ DQS0B/CQ1B#,DPCLK3	T15	>>>	SDRAM_A10	[6]
IO_B4_ T14/ DIFFIO_B20P/ DQ5B	T14	>>>	SDRAM_A4	[6]
IO_B4_ L11/ DIFFIO_B21N	L11	>>>	LEDS0_BL	[13]
IO_B4_ P14/ DIFFIO_B21P	P14	>>>	SDRAM_A1	[6]
IO_B4_ N12/ DIFFIO_B22N	N12	>>>	SDRAM_A11	[6]
IO_B4_ M11/ DIFFIO_B22P	M11	>>>	SDRAM_A12	[6]

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IO_B5_ P15/ RDN3/ DQ1R	P15	>>>	I2C1_SCL	[8,10,11,12,13,14]
IO_B5_ N14/ RUP3/ DM1R/BWS#1R	N14	>>>	I2C1_SDA	[8,10,11,12,13,14]
IO_B5_ N13	N13	>>>	HDMI_CEC_A	[14]
IO_B5_ M12	M12	>>>	HDMI_HPD	[14]
IO_B5_ L12	L12	>>>	SD_D2	[8]
IO_B5_ K12	K12	>>>	SD_D3	[8]
IO_B5_ J14/ DIFFIO_R6N/ DQ1R	J14	>>>	SD_CMD	[8]
IO_B5_ J12/ DIFFIO_R6P	J12	>>>	SD_CLK	[8]
IO_B5_ J16/ DIFFIO_R7N/ DEV_OE	J16	>>>	SD_D0	[8]
IO_B5_ J15/ DIFFIO_R7P/ DEV_CLR_N	J15	>>>	SD_D1	[8]
IO_B5_ K16/ DIFFIO_R8N/ DQ1R	K16	>>>	HDMI_TX2_N	[14]
IO_B5_ K15/ DIFFIO_R8P/ DQS1R/CQ1R#,DPCLK4	K15	>>>	HDMI_TX2_P	[14]
IO_B5_ L16/ DIFFIO_R9N/ DQ1R	L16	>>>	HDMI_TX1_N	[14]
IO_B5_ L15/ DIFFIO_R9P	L15	>>>	HDMI_TX1_P	[14]
IO_B5_ K11	K11	>>>	T_PAD1	[10]
IO_B5_ N16/ DIFFIO_R10N/ DQ1R	N16	>>>	HDMI_TX0_N	[14]
IO_B5_ N15/ DIFFIO_R10P/ DQ1R	N15	>>>	HDMI_TX0_P	[14]
IO_B5_ L13/ DQ1R	L13	>>>	CAM_D7	[8,15]
IO_B5_ P16/ DIFFIO_R11N/ DQS3R/CQ3R#	P16	>>>	HDMI_TXC_N	[14]
IO_B5_ R16/ DIFFIO_R11P/ DQ1R	R16	>>>	HDMI_TXC_P	[14]
VREFB5N0	L14	>>>	DHT11	[10]
IO_B5_ J11	J11	>>>	BEEP	[10]
IO_B5_ J13/ DQ1R	J13	>>>	CAM_HS	[8]

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U6-6

IO_B6_ F13	F13	>>>	CAM_D6	[8,15]
IO_B6_ B16/ DQS0R/CQ1R,DPCLK5	B16	>>>	CAM_D5	[8,15]
IO_B6_ C16/ DIFFIO_R1N/ DQS2R/CQ3R	C16	>>>	CAM_VS	[8,15]
IO_B6_ C15/ DIFFIO_R1P	C15	>>>	CAM_D4	[8,15]
IO_B6_ D16/ DIFFIO_R2N	D16	>>>	CAM_D3	[8,15]
IO_B6_ D15/ DIFFIO_R2P	D15	>>>	CAM_XCLK	[8,15]
VREFB6N0	F14	>>>	CAM_D2	[8,15]
IO_B6_ F15/ DIFFIO_R3P/ CLKUSR	F15	>>>	CAM_D1	[8,15]
IO_B6_ F16/ DIFFIO_R3N/ NCEO	F16	>>>	CAM_RST	[8]
IO_B6_ G11	G11	>>>	CAM_PDN	[8,15]
IO_B6_ G15/ DIFFIO_R4P/ CRC_ERROR	G15	>>>	CAM_D0	[8]
IO_B6_ G16/ DIFFIO_R4N/ INIT_DONE	G16	>>>	IR_IN	[10]

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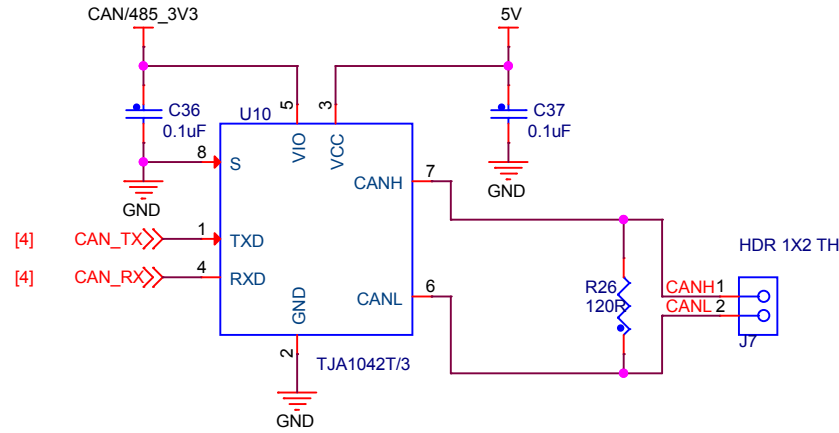
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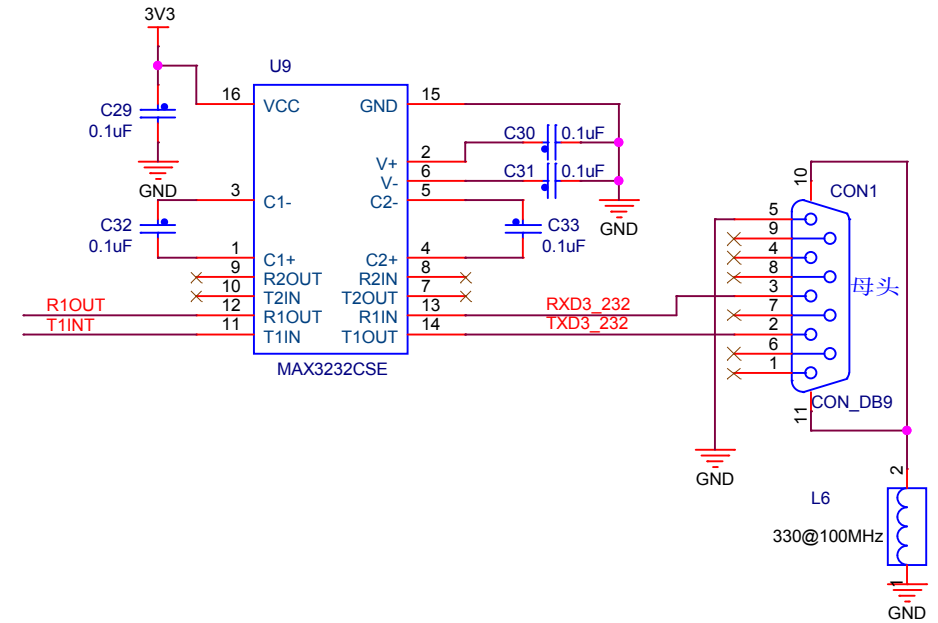




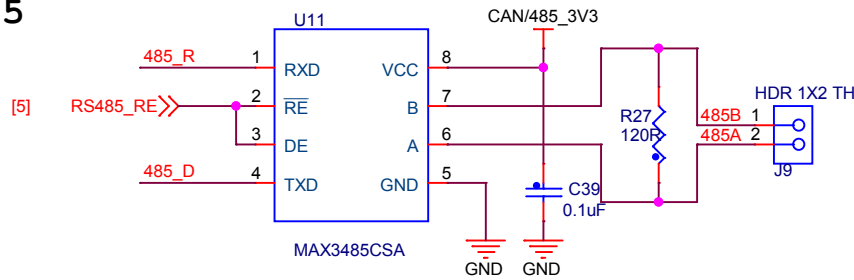
## CAN



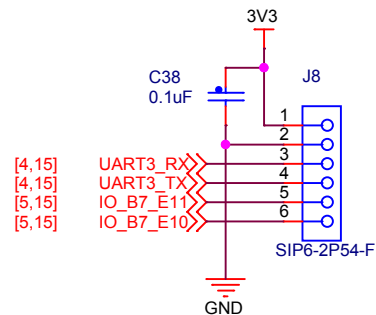
## RS232串口



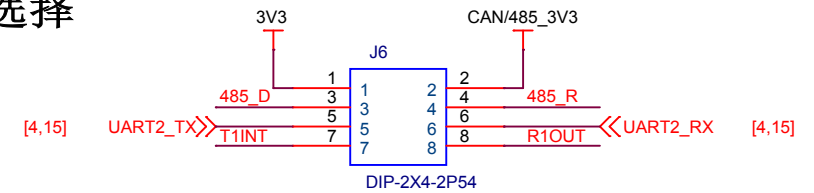
## RS485



## EBF-Module



## 跳帽选择



CAN和485的电源  
由跳帽J6的1和2脚控制，默认不接

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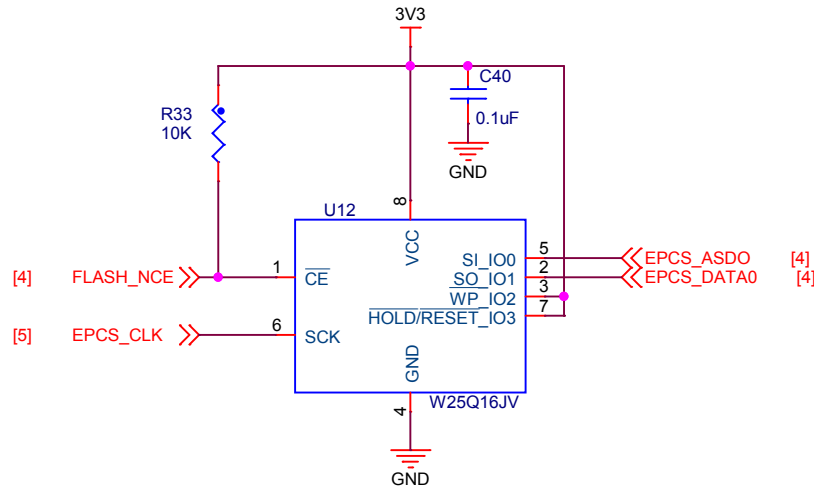
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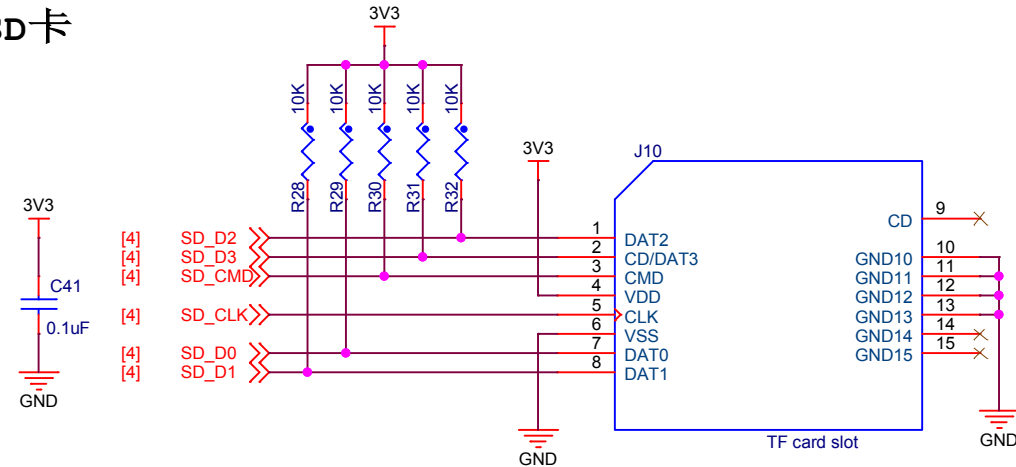
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## SPI\_FLASH

容量: 16M字节



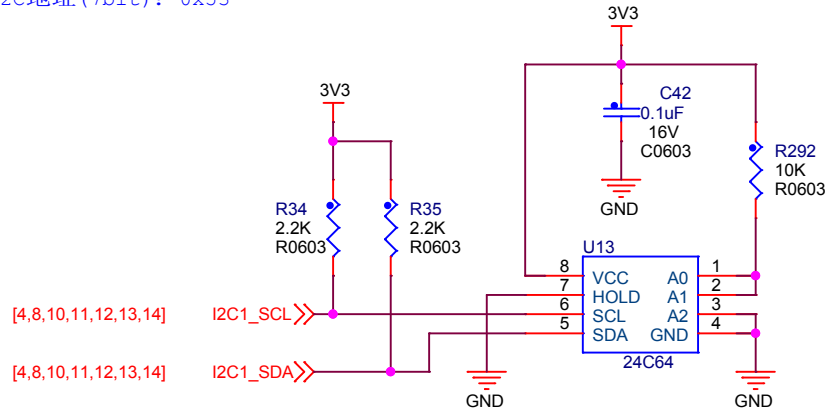
## SD卡



## EEPROM

容量: 8K字节

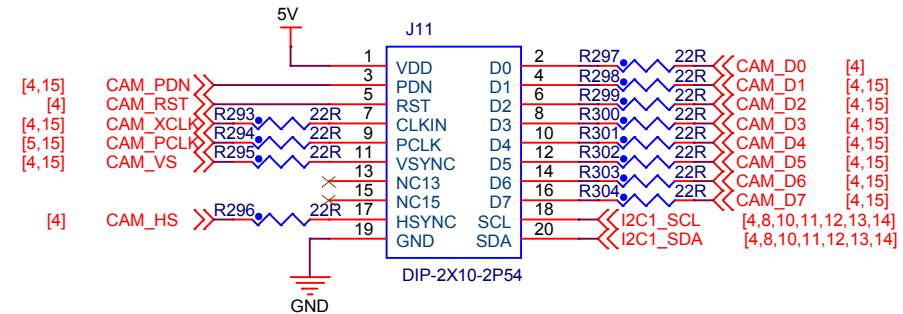
I2C地址 (7bit): 0x53



## 摄像头接口

OV5640\_I2C地址 (7bit): 0x3C

OV7725\_I2C地址 (7bit): 0x21



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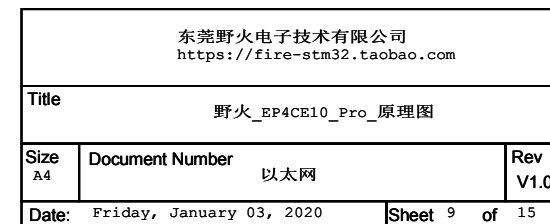
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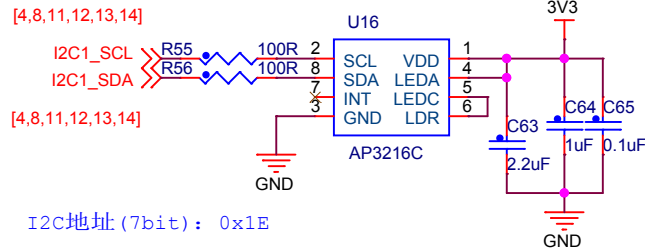
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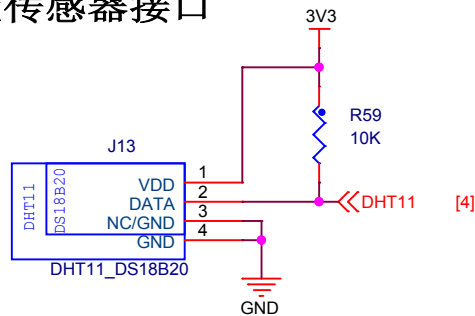
## A



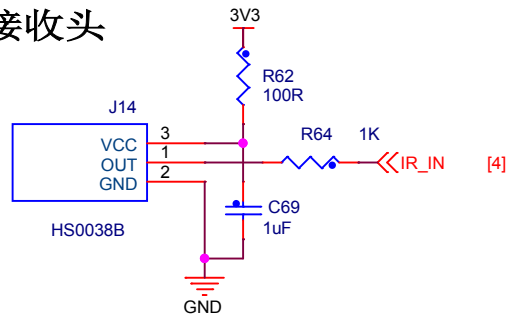
## ALS+PS+IRLED (三合一)



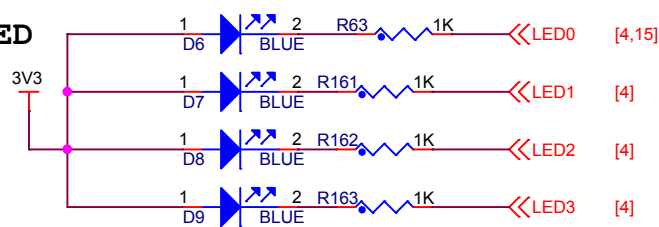
## 温湿度传感器接口



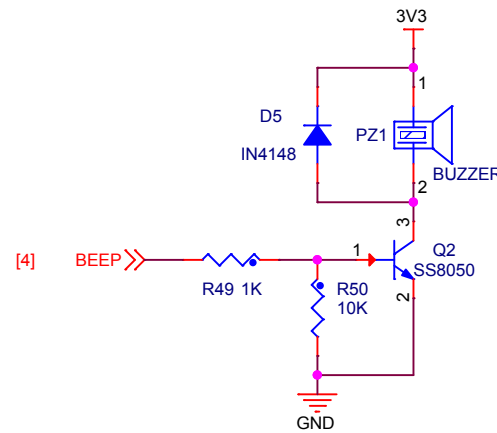
## 红外接收头



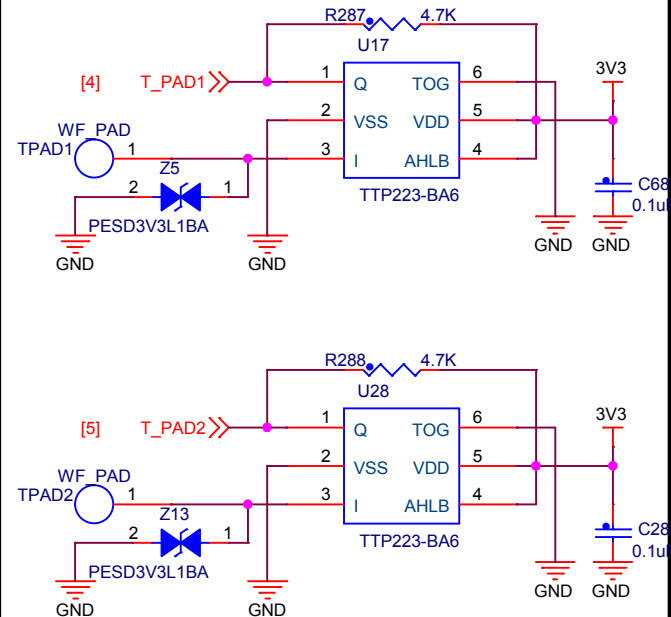
## LED



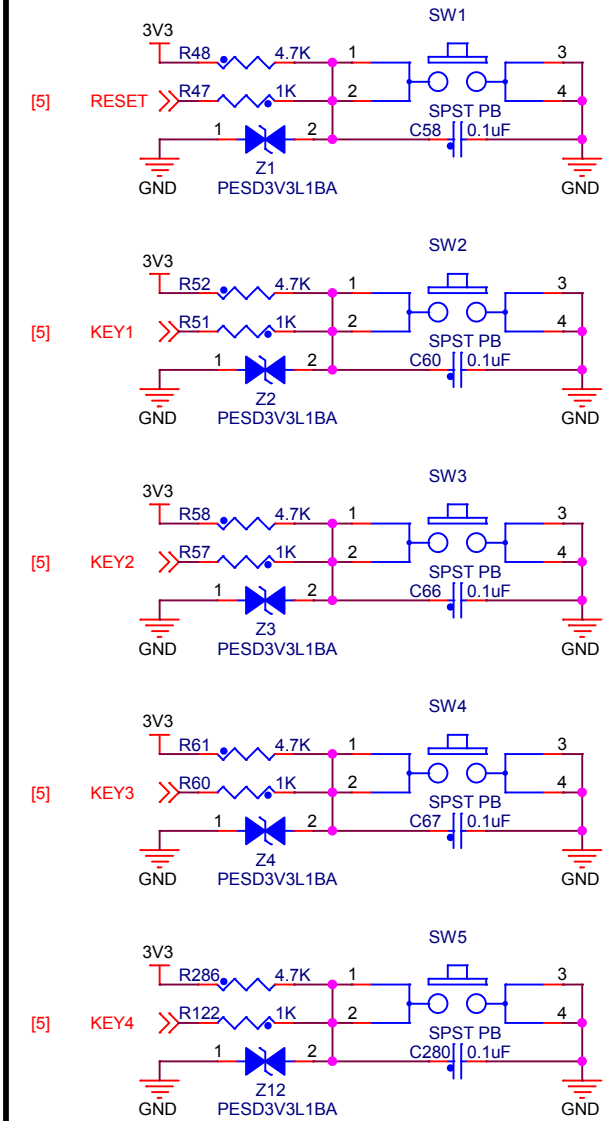
## 蜂鸣器



## 触摸按键



## 按键

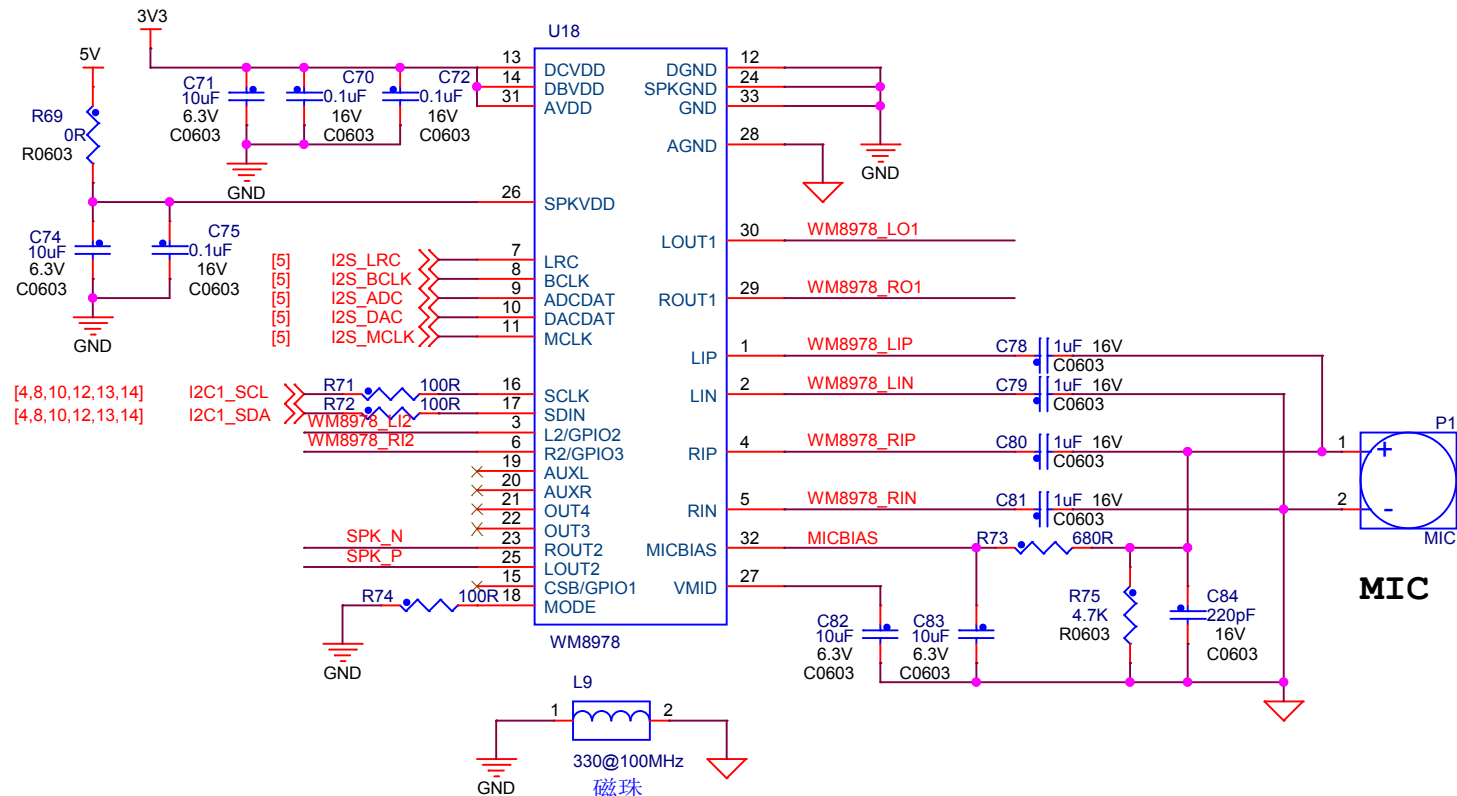


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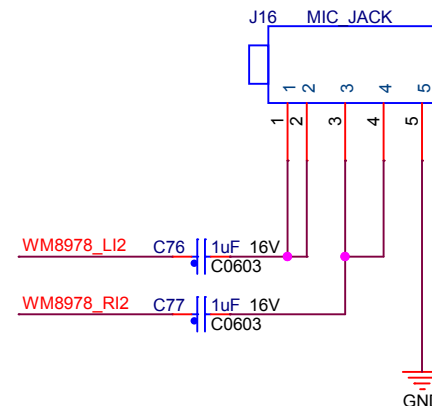
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## MIC插头

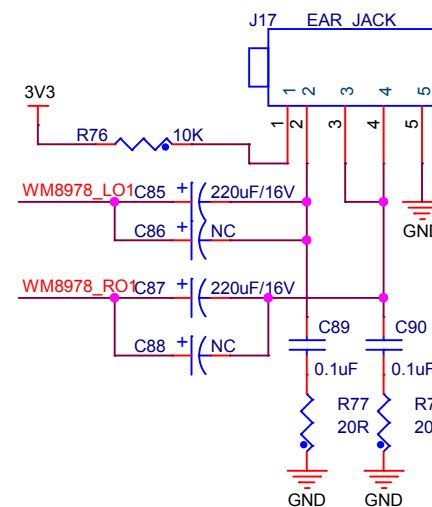
I2C地址 (7bit): 0x1A



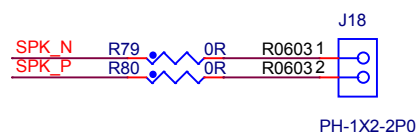
## 音频输入



## 耳机插座



## 喇叭插座



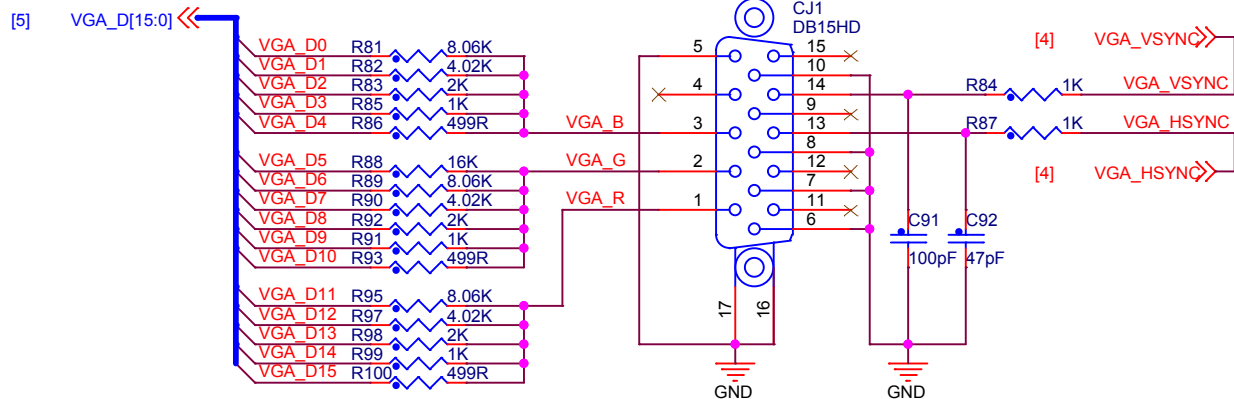
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Title 野火\_EP4CE10\_Pro\_原理图

Size A4 Document Number 音频 Rev V1.0

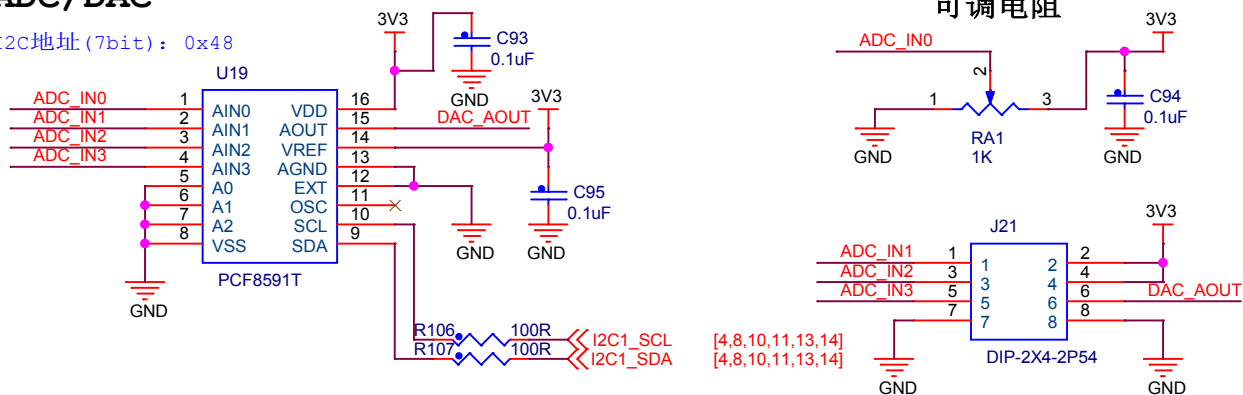
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## VGA



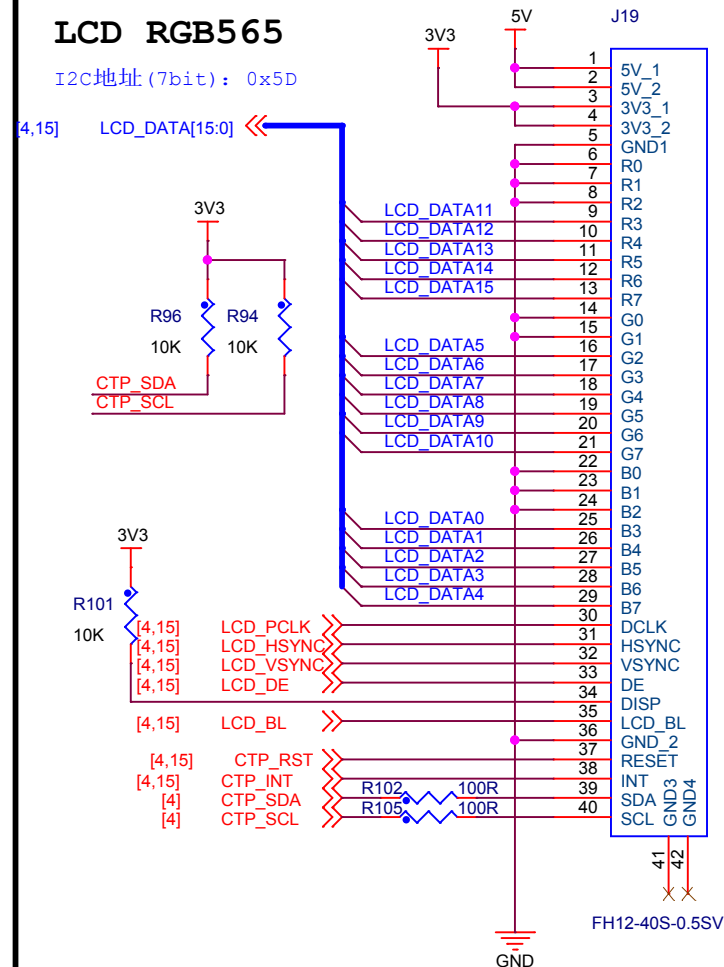
## ADC/DAC

I2C地址(7bit): 0x48

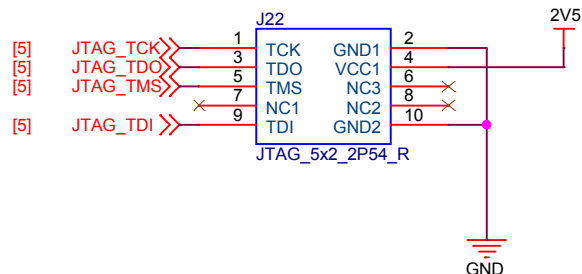


## LCD RGB565

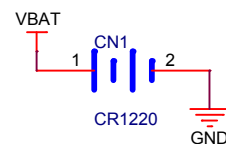
I2C地址(7bit): 0x5D



## JTAG调试口



## RTC电池



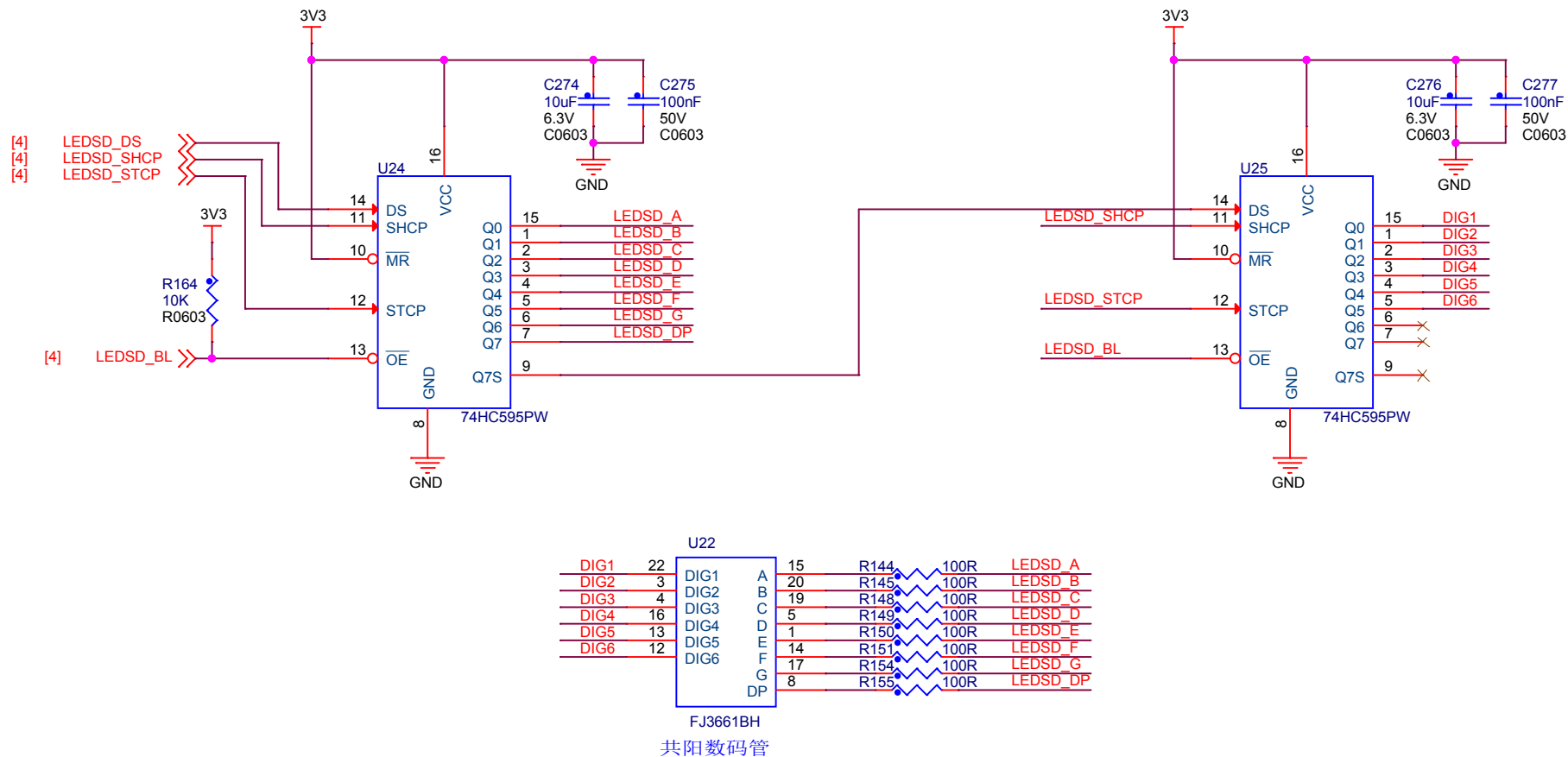
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Title 野火\_EP4CE10\_Pro\_原理图

Size A4 Document Number VGA/LCD/ADC/DAC/JTAG Rev V1.0

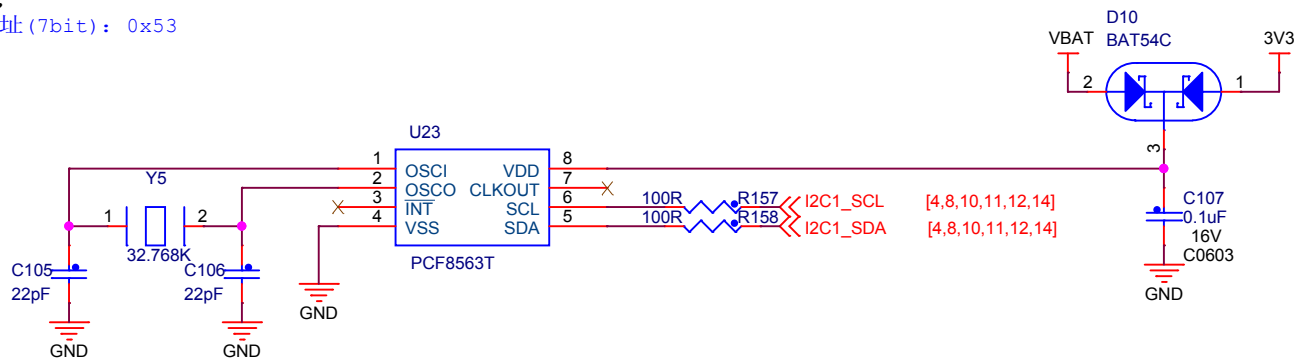
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## LED数码管



## RTC

I2C地址(7bit): 0x53



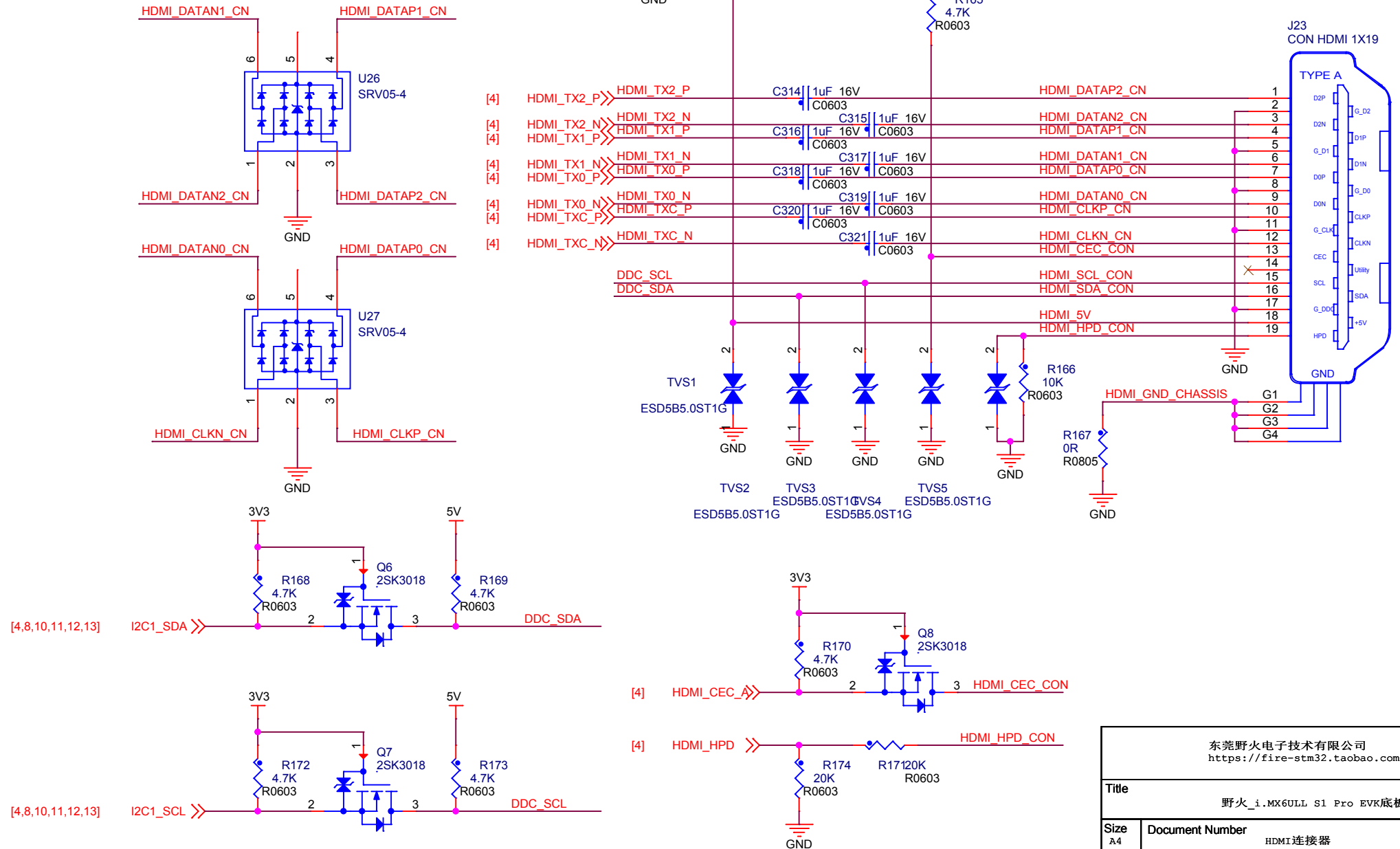
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Title 野火_EP4CE10_Pro_原理图		
Size A4	Document Number LED数码管/RTC	Rev V1.0
Date: Friday, January 03, 2020	Sheet 13 of 15	

# HDMI连接器

Type A型

I2C地址(7bit): 0x50



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Title 野火_i.MX6ULL S1 Pro EVK底板_原理图		
Size A4	Document Number HDMI连接器	Rev V1.0
Date: Friday, January 03, 2020	Sheet 14 of 15	

