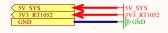
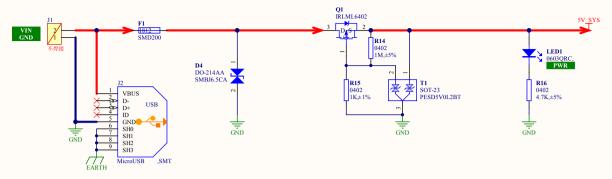
#### 1. MAIN RT1052 02. PWR 5V 3V3 MP1653GTF.SchDoc 03 i MX-RT1052 PWR SchDoo 05 i MX-RT1052 RST SchDoc HOLE1 HOLE2 3V3 RT1052 VDD\_SNVS\_3V3 POR B J 5V SYS 3V3 RT1052 POR B POR B 3V3 RT1052 RST DCDC IN 3V3 VDD HIGH 3V3 ONOFF WAKEUP ONOFE WAKEUP < VDDA ADC 3V3 GND GPIO5 IO01 PMIC\_ON\_REQ PMIC\_STBY\_REQ WDOG1 B → WDOG1 B GND \_\_\_ 看门狗复位输出 R1 1206 GND 1ΜΩ 3V3\_RT1052 04. i.MX-RT1052\_BOOT.SchDoc 3V3 RT1052 06. i.MX-RT1052 SEMC.SchDoc 09. SDRAM IS42S16160J-7TLI.SchDoc 3V3 RT1052 NVCC EMC 3V3 > 3V3 BOOT 3V3 SDRAM C1 GND 1 GND ĘŅD. SEMC WE SDRAM\_nWE 1206 EARTH1 SEMC CAS SDRAM nCAS 102 +10% SDRAM nRAS SEMC RAS BOOT\_MODE0 BOOT\_MODE1 LCD\_DATA[0..15] BOOT\_MODE0 BOOT\_MODE1 LCD\_DATA[0..15] SEMC CLK SDRAM CLK SEMC\_CKE SDRAM CKE HOLE3 HOLE4 SDRAM A[0, 12] SEMC A[0..12] SDRAM D[0..15] SDRAM\_BA[0..1] SDRAM\_DM[0..1] SEMC BAID 1 SEMC DM[0..1] GND \_ GND ENET MDC ENET MDIO GND EARTH3 GND i.MX-RT1052 Peripherals.SchDoc 3V3\_RT1052 R2 08. OSPI Flash MX25L6436FM2I-08O.SchDoc 10. ENET DP83848KSO.SchDoc WDOG1 B 3V3 RT1052 3V3\_RT1052 1206 NVCC\_GPIO\_3V3 WDOG1 B 1ΜΩ 看门狗复位输出 3V3 ENET GND I ENET\_MDC ENET MDIO > 3V3 SPI FLASH GND ENET\_TX\_CLK ENET CLK ENET TX EN ENET TXD[0..1] C2 ENET TX EN GND ENET TXD[0..1] 1206 EARTH2 ENET\_RX\_EN ENET\_RX\_DV 102,±10% GND ENET RX ER ENET DY ED GND [ ENET RXD[0..1] ENET RXD[0..1] 15. WIFI SDIO ZW6201.SchDoc 3V3\_RT1052 R3 ENET\_nRST ENET nRST 3V3 WIFI WL\_REG\_ON C WL\_REG\_ON WL\_HOST\_WAKE GND 1ΜΩ SDIO CLK SDIO\_CLK 11 USB OTGL & OTG2 SchDo SDIO\_CMD SDIO\_DATA[0..3] SDIO\_DATA[0..3] USB OTG2 VBUS SDIO\_CMD SDIO\_DATA[0..3] USB OTG2 VBUS 5V USB < C3 GND 1206 USB OTG2 P USB\_OTG2\_P USB\_OTG2\_N EARTH3 GND 102 ±10% USB OTG2 N 5V SYS USB\_OTG1\_VBUS USB\_OTG1\_VBUS USB\_OTG1\_ID USB\_OTG1\_P USB\_OTG1\_N 5V Others PWM2 PWMA3 USB\_OTG1\_VBUS USB\_OTG1\_ID Buzzer ( R237 SPI3\_SCK SPI3\_CS0 SPI3\_MISO SPI3\_MOSI RUN SDLED CAN2\_RX CAN2\_TX CAN1\_RX GND □ 1206 3V3\_RT1052 SPI3 SCK ( USB\_OTG1\_P USB\_OTG1\_N 1ΜΩ SPI3 CS0 → 3V3\_Others SPI3 MISO SPI3 MOSI < C141 12. SD.SchDoc RIIN 3V3<u>RT</u>1052 1206 POR B SD\_PSW SD\_CLK SD\_CMD FARTH4 CAN2\_RX 3V3 SD 🤇 GND 102.±10% SD0\_CLK SD0 CMD CAN2 TX GND [ SD\_CMD SD\_CD\_B SD\_DATA[0..3] CANI\_TX UART8 RX CAN1 TX SD0 CD B SD0 DATA[0..3] HOLE5 HOLE6 UART8 RX GND UART8\_RX UART8\_TX UART6\_RX UART6\_TX UARTS TX UART6 RX UART6 TX R74 13. SWD & UART1.SchDoc 3V3\_RT1052 UART5 RX UART5 RX POR B SWD RST 3V3 SWD < HARTS TX HARTS TX 0402 UART4 RX SWD\_DIO SWD CLK UART4 RX SWD DIO EARTH UART4 TX UART4 TX SWD CLK GND [ UARTI\_TXD UARTI\_RXD HARTS RX HART3 RX UARTI RX R4 UART3 TX UART3 TX UART1\_RX UART1\_RX UART1\_TX 1206 UARTI\_RX UARTI\_TX GND 1ΜΩ UARTI TX 14. LCD RGB565.SchDoc 5V\_SYS GPIO1 IO20 < > GPIO1 IO20 CAP INT CAP SCL CAP SDA TS YM TS YP TS XP TTF PWM TIFT PWM TIFT VSYNC TIFT THSYNC GPIO1\_IO20 GPIO1\_IO21 GPIO2\_IO30 GPIO2\_IO31 GPIO3\_IO02 CAP\_INT | 12C1 SCL | 12C1 SDA | 12C1 SDA GPIO1\_IO21 CPIO2 IO30 5V LCD < C4 1206 / / / EARTH GPIO2\_IO31 GND 102,±10% GPIO3 1002 TS\_YM C GPIO3\_IO02 GPIO3\_IO03 GPIO3\_IO05 GPIO3 IO03 3V3 LCD < GPIO3\_IO04 < TS XM C R5 GPIO3 1005 GPIO5 1001 GPIO5 1002 GPIO5 1002 1206 LCD\_PWR LCD PWM 1ΜΩ LCD CLK | 12C1 SDA | 12C1 SCL C5 LCD HSYNC GND GND [ BOOT\_MODE1 BOOT\_MODE0 LCD\_DATA[0..15] 1206 TFT\_D[0..15] GND EARTH GND 102,±10% 修改日期 修改内容 MARK1 MARK7 MARK2 MARK3 MARK4 MARK5 MARK6 QC MARKER MARKER MARKER MARKER MARKER MARKER ESD-MARK 图纸名称 MAIN RT1052 图纸描述 Ametal开发平台-I. MXRT1050 主图 设计日期 2018-03-27 **医** 广州周立功单片机科技有限公司 审核人 审核日期 (审核日期) 产品名称 Ametal开发平台-I, MXRT1050 评估套件 EasvARM-RT1052 图纸版本 Rev. A 第1张/共16张

## 2. PWR 5V & 3. 3V

#### (2-1) 5V

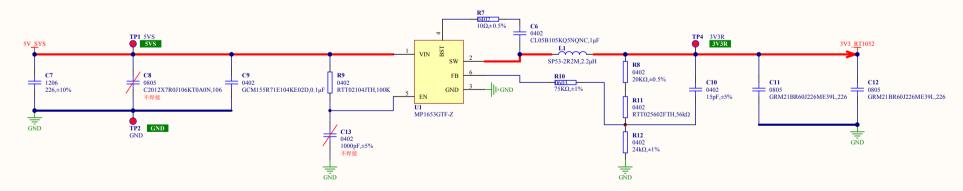




EasyARM-RT1052评估套件版本	焊接的处理器芯片型号	焊接的FLASH芯片型号	供电方案
Rev. A	PIMXRT1052CVL5A	MX25L6436FM2I-08Q (旺宏)	LDO+DCDC(5V转3/3.3V)/MP1482DN-LF-Z(12V转5V,预留),电路复杂
Rev. B	-	-	-
Rev. C	MIMXRT1052CVL5A	IS25LP064A-JBLE (ISSI)	LDO+DCDC(5V转3/3.3V)/MP1482DN-LF-Z(12V转5V,预留),电路复杂
Rev.D(最新发布版本)	MIMXRT1052CVL5B	IS25LP064A-JBLE (ISSI)	修复DCDC的Bug,可支持单3.3V DCDC给系统供电,电源电路简化

## <u>(2-2) 3V3</u>

要点1: EasyARM-RT1052 Rev. D版本焊接的RT处理器版本型号为 MIMXRT1052CVL5B B结尾版本型号的供电方式可支持单3.3V供电方案,为简化电源电路,这里使用MP1653给系统全部模块进行供电!



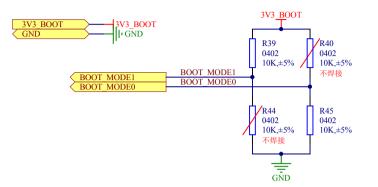
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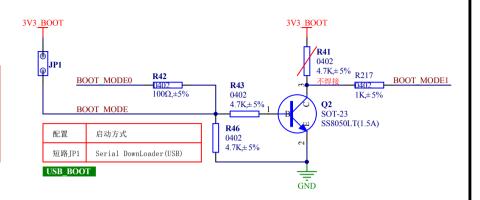
#### 3. i. MX-RT1052 PWR & CLK VDD\_HIGH\_3V3 VDDA\_ADC\_3V3 VDDA ADC 3P3 0Ω DCDC\_OUT\_1V1 VDD\_SOC\_IN 0603 3. 0-3. 6V (40mA) N14 VDDA ADC 3V3 VDDA ADC 3P3 VDD\_SOC\_IN\_2 VDD\_SOC\_IN\_3 VDD\_SOC\_IN\_4 C39 C40 C43 C37 C38 C41 C42 C45 0402 0402 0402 0805 F9 GRM155R60J105KE19D,1μF 0.22μF,±10% 0.22µF,±10% 0.22µF,±10% 0.22µF,±10% 0.22μF,±10% 0.22μF,±10% 0.22μF,±10% 0.22μF,±10% 0.22μF,±10% 4.7μF,±20% VDD\_SOC\_IN\_5 VDD\_SOC\_IN\_6 VDD\_SOC\_IN\_7 G6 G9 H6 H9 Ę GND GND VDDA\_ADC\_3P3 must be powered even if the ADC is not used VDD\_SOC\_IN\_8 VDD\_SOC\_IN\_9 VDD HIGH IN VDD HIGH CAP 2. 8-3. 6V (50mA) P12 VDD\_HIGH\_IN VDD HIGH 3V3 VDD HIGH CAP C46 C49 C50 0402 0402 0402 R30 4.7µF,±20% 0.22µF±10% 0.22µF±10% 4.7µF,±20% P10 1.1V 00 NVCC PLL C51 C52 VDD SNVS 3V3⊢ GND DD SNVS IN GND VDD SNVS CAP 0.22μF,±10% 4.7μF,±20% 2. 4-3. 6V (250 μ A) M9 VDD\_SNVS\_IN M10 VDD SNVS CAP SOD-123 C54 0402 C53 MBR0520LT10 $\binom{R0}{0603} = 3.3K\Omega$ 0402 GND 0.22μF±10% 0.22µF±10% K9 A1 A14 NGND\_KEL0 VSS1 VDD\_COIN\_3V3 VSS10 R31 VSS11 GND D13 VSS2 VSS12 $\Omega$ i.MX 6RT SOD-123 B5 B10 0603 MBR0520LT1C K13 VSS14 DCDC IN VSS5 3.3V DCDC LP N5 N8 FPC2-49T 2P, 1.2 DC-DC VSS7 VSS17 不焊接 VSS8 VSS18 VDD SOC P14 VSS9 VSS19 1.1V) Cortex M7 0402 0.1μF,±10% FlexRAM Cache MIMXRT1052CVL5B 106 10uF ĘND SOC (Always ON) (3-1) i. MX-RT1052 PWR & CLK SD GPIO PADs SEMC GPIO PADS NVCC GPIO GPIO PADs C57 VDDA\_ADC\_3P 0402 ADC & DAC CCM\_CLK1\_N CCM\_CLK1\_P DCDC\_IN\_3V3 C58 VDD HIGH CAP 0402 R33 VDD HIGH IN (2.5V) LDO\_2P5 0.1μF,±10% 0Ω L6 WAKEUP WAKEUP 2. 8-3. 6V (100mA) TEST MODE WAKEUP PLLs 当不用该两个管脚控制外部DCDC时 GND 注意该电阻不能删除 可作为上电指示灯或者系统运行灯控制信号 C60 C61 C62 C63 /R113 PMIC STBY REQ PMIC ON REQ DCDC\_IN\_1 DCDC\_IN\_2 DCDC\_IN\_Q 24MHz XTAL PMIC\_STBY\_REQ 0402 0805 0603 NVCC PLL L2 K4 M1 0402 2.2M,±5% PMIC\_ON\_REQ 0.22μF±10% 0.22µF±10% 226,22μγ 3.3ΚΩ 0.22µF,±10% 4.7μF,±20% (1.1V) LDO\_1P1 1.4 VLS3015ET-4R7M,3.0×3.0×1.5mm DCDC LP 2 USB PHY -0402 1M.±5% USB\_OTG\_VBUS VDD USB CAP (5V) (3.0V) C64 C65 C66 XTALO LDO\_USB 0402 226,22μF 226,22μF 0.22μF,±10% ĘND VDD\_SNVS\_IN (2.4-3.6V) VDD SNVS CAP R37 DCDC PSWITCH P9 J5 (1.1V) -0402 0Ω,±5% RTC\_XTALO DCDC\_SENSE VDD\_SOC\_IN LDO\_SNVS DCDC\_IN\_3V3 GND JYD3A1C7G5-10-24.000,24.000MHz RM1555C1H6R2CA0ID 6 CM7V-T1A 32.768kHz 32KHz XTAL C70 C71 30KΩ GPANAIO DCDC GND 1 注意R38需焊接30K SNVS 0402 0402 0402 0402 DCDC\_GND\_2 15pF,±5% 15pF,±5% 0.22μF±10% PΔDs MIMXRT1052CVL5B ± GND GND GND GND 修改日期 修改内容 图纸名称 i. MX-RT1052 PWR & CLK Ametal开发平台-I. MXRT1050 RT1052电源和时钟电路 2017-09-29 广州周立功单片机科技有限公司 (审核人是)审核日期 (审核日期) 产品名称 Ametal开发平台-I.MXRT1050 评估套件 产品型号 EasvARM-RT1052 图纸版本 Rev. A 第 3 张 / 共 16 张

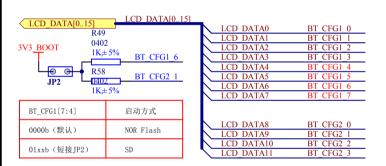
# 4. i. MX-RT1052 BOOT

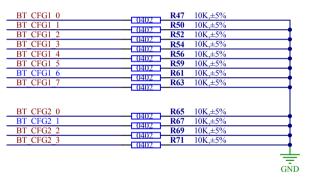
## (4-1) BT MODE SELECT



BOOT_MODE[1:0]	BOOT_TYPE
00	Boot From Fuse
01	Serial DownLoader
10	Internal Boot(Default)
11	Reserved







要点1:由于BOOT配置信号BT CFG1、2与LCD信号是复用的关系,因此设计中需特别注意 第一:建议仅作为LCD液晶显示输出,当用作其它功能输出时需注意核对外接负载是否改变原本设定的采集电平 第二: 不建议将该配置信号作为输入使用,如果不得不用,建议采用隔离的方案或者采用模拟开关进行隔离处理

> To reduce incorrect boot-up mode selections, do one of the following: • Use the LCD boot interface lines only as processes or outputs. Make sure that the LCD boot interface lines are not loaded down (such that the level is interpreted as low during the powerup) when the intent is to be at a high level, or the other way round. If the LCD boot signal must be configured as an input, isolate the LCD signal from the target driving source with an analog switch and apply the logic value with a second analog switch. Alternately, the peripheral devices with 3-state outputs may be used. Ensure that the output is high-impedance.

Using the LCD boot interface lines as inputs may result in a wrong boot because of the source overcoming the pull resistor value. A peripheral device may require the LCD signal to have an external or on-chip resistor to minimize signal floating. If the usage of the LC boot signal affects the peripheral device then an analog switch, an open collector buffer, or an equivalent shall isolate the path. A pull-up or pull-down resistor at the peripheral device may be required to maintain the desired logic level. See the switch or device data sheet for the operating specifications.

## (4-2) FLASH & SD BOOT TYPE

Table 8-8. Boot device selection						
BOOT_CFG1[7:4]	Boot device					
0000b	Serial NOR boot via FlexSPI					
01xxb	SD Boot via uSDHC					
10xxb	eMMC/MMC boot via uSDHC					
001xb	SLC NAND boot via SEMC					
0001b	Parallel NOR boot via SEMC					
11xxb	Serial NAND boot via FlexSPI					

BOOT TYPE	BT_CFG2_3	BT_CFG2_2	BT_CFG2_1	BT_CFG2_0	BT_CFG1_7	BT_CFG1_6	BT_CFG1_5	BT_CFG1_4	BT_CFG1_3	BT_CFG1_2	BT_CFG1_1	BT_CFG1_0
FlexSPI Serial NOR Flash	Loop O-DIS 1-EN (Debug only)	FLASH_TYPE 000-3Byte 001-4Byte 010-1V8 HyperFlash 011-3V3 HyperFlash 100-MXIC Octal DDR 101-Micron Octal DDR 111-3B secondary				0000-QSP]	I Flash		Hold time be read from de 00-500us 10-3ms		EncryptedXIP 0-DIS 1-EN	Reserved
SD	Loop 0-DIS 1-EN (Debug only)	Reserved	Bus Width 0-1bit 1-4bit	SD1 VOLTAGE SELECTION 0-3.3V 1-1.8V	0	1	SD/SDX 00-N/SDR12 10-SDR50	CC Speed 01-H/SDR25 11-SDR104	SD Cy EN 0-DIS 1-EN	SD CLK SLE 0-SD 1-direct	Port Selet 0-SD1 1-SD2	Fast Boot O-Regular 1-Fast BT

3. BOOT CFG and

BOOT MODE signals

multiplexed with LCD signals

	#	修改日	期			修改内	容			
	1									
	2									
	3									
i.MX-RT1052_B00T	图组	氏描述	Ameta	al开发平台-I.I	MXRT1050 BO	00T启动i	配置			
Ametal开发平台-I.MXRT1050	部	<b>計學</b> 特	EasyA	ARM-RT1052	图纸版本	Rev. A	第 4 张	/ 共 1	.6 张	A4

**太** 广州周立功单片机科技有限公司

设计人员

审核人员

(审核人量)审核日期

设计日期

LJH

2017-09-29 产品名称 (审核日期)

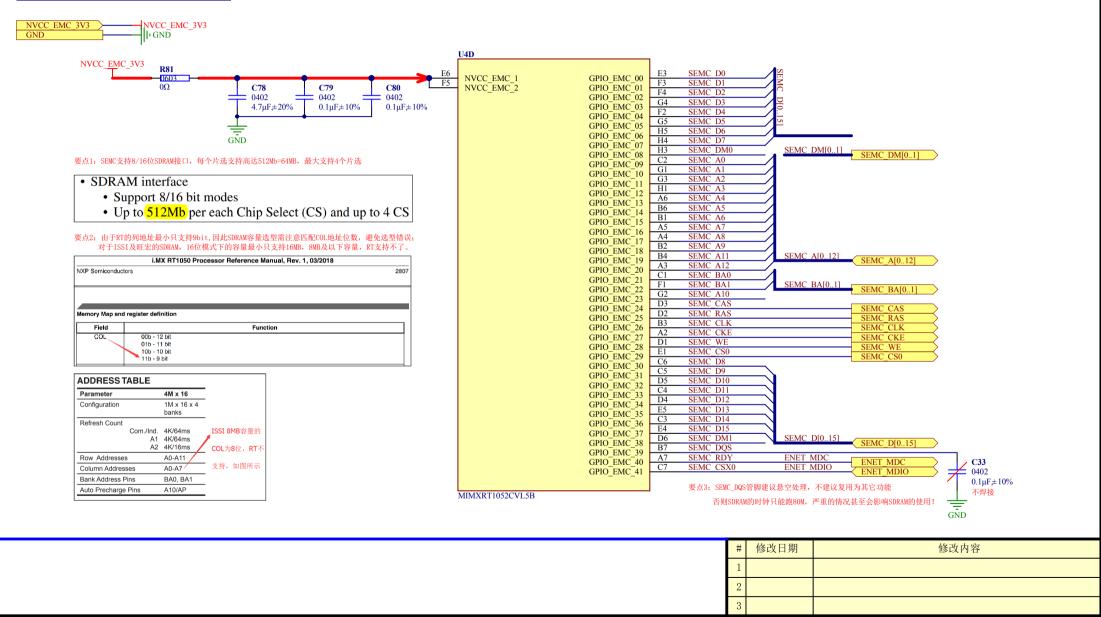
图纸名称

#### 5. i. MX-RT1052 RST & KEY 3V3 RT1052 RST (5-1) RT1052 RST I GND R117 0402 100K,±5% R122 0402 2K,±5% 2 D6 1 POR B POR B R116 -0402 2K,± 5% POR B 3V3 RT1052 RST TS0641-0501B,6×6×5.0mm 100Ω,±5% C19 C28 0402 0402 0.1μF,±10% 0402 0.1μF,±10% $0.1 \mu F \neq 10\%$ NCP803SN293T1G PESD3V3S2UT GND (5-2) RT1052 FUN Button R79 0402 R80 0402 WAKEUP WAKEUP LS-1185AP1-A,4×3×2mm LS-1185AP1-A,4×3×2mm C77 0402 0.1μF,±10% 0402 0.1μF,±10% D11 PESD3V3S2UT PESD3V3S2UT RT1052 ONOFF管脚 RT1052 WAKEUP 按键 (5-3) SYS WDG RST WDOG1 B POR B [] C75 0Ω±5% 看门狗复位输出 0402 1μF,±10% 看门狗复位MCU 1M,±5% 修改日期 修改内容 设计人员 图纸名称 图纸描述 Ametal开发平台-I.MXRT1050 2017-09-29 LJH 设计日期 i.MX-RT1052 RST & KEY **太** 广州周立功单片机科技有限公司 审核人员 〈审核人员审核日期 第5张/共16张 (审核日期) 产品名称 Ametal开发平台-I. MXRT105 部出來對 EasyARM-RT1052 图纸版本 Rev. A

# 6. i. MX-RT1052 SEMC

## (6-1) i. MX-RT1052 SEMC

**太** 广州周立功单片机科技有限公司



设计人员

审核人员

LJH

设计日期

(审核日期) 审核日期

2017-09-27

〈审核人员〉

图纸名称

产品名称

i.MX-RT1052 SEMC

Ametal开发平台-I. MXRT105

图纸描述

部船費料

EasvARM-RT1052

Ametal开发平台-I. MXRT1050 外部存储器控制器

图纸版本 Rev. A

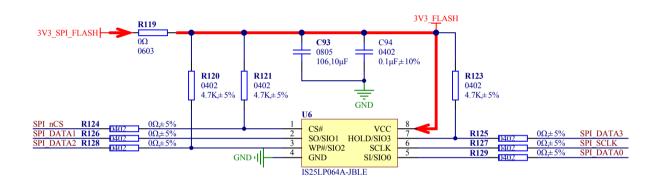
第6张/共16张

#### 7. i. MX-RT1052 Peripherals C47 0402 (7-1) USB OTG1 & HOST2 NVCC\_SD GRM1555C1H180JA01D,18pF 3-3.60J3 J1 SD0 CLK R114 0402 R82 C81 C82 SD0\_DATA0 USB OTG2 VBUS 00 GPIO SD B0 02 0603 4.7uF.±20% 0.22uF±10% GPIO SD B0 03 不煜接 IL GND SD0\_DATA2 GPIO SD B0 04 SD0 DATA3 GPIO SD B0 05 SD0 GND GND 要点1: 默认情况下,请使用OTG1作为Device作为串行下载口 (7-2) SD & SPI FLASH USB OTG1 VBUS 4, 4-5, 5V (50mA) JUART4 M5 SD B1 01 M8 USB OTG1 N L8 USB OTG1 P USB OTG1 V USB OTG1 V GPIO\_SD\_B1\_01 GPIO\_SD\_B1\_02 USB OTGL VBUS USB OTG1 DN M4 R83 C83 USB\_OTG1\_DP SD B1 04 00 0402 GPIO SD B1 04 NVCC\_SD SDIO GPIO×4 0603 1uF.±10% 3-3, 6V GPIO SD B1 05 USB\_OTG1\_CHD GPIO SD B1 06 VDD USB 3V FlexSPI SCLK FlexSPI DATA R84 C84 C85 GPIO SD B1 07 VDD USB CAP 0402 00 0402 GPIO SD B1 08 GNID FlexSPI DATAIO 3 C86 C87 4.7μF,±20% 0.22µF,± FlexSPI DAT. FlexSPI DAT. 0805 0402 GPIO SD B1 10 USB OTG2 VBUS 4.4-5.5V (50mA) NVCC SD1 USB\_OTG2\_DN 0.1uF ±10% 106 10uF GPIO SD B1 11 SPI FLASH USB\_OTG2\_DP USB OTG2 VBUS GND D85 C88 MIMXRT1052CVL5B 00 0402 要点1: 必须使用FlexSPIA作为Nor Flash启动BOOT 要点2: 建议采用GPIO SD BI 06至11这路FlexSPIA作为默认Nor Flash启动BOOT MIMXRT1052CVL5E 要点3: 如采用GPIO\_AD\_B1\_10至15这路FlexSPIA作为Nor Flash启动BOOT, BT\_CFG2[2:0]需要配置为111 0603 1μF,±10% GND 要点4: EasyARM-RT1052默认支持ISSI Nor Flash,如采用1.8V的HyperFlash,建议参考原厂EVK进行设计 Projected Impact: SD B1 00 R86 0Ω GPIO3 IO03 R87 0Ω 0Ω R89 0Ω R86 0603 0Ω 0603 0Ω Do not use two OTGs or devices simultaneously. Only four scenarios are supported: GND · One for OTG/Device, another for Host 要占9、RT支持9路0TG、但不支持同时使用0TG或者deviceTh能 · One for OTG/Device, another is un-used. R92 0603 $0\Omega$ $0\Omega$ R93 0603 $0\Omega$ SDIO 详细描述语查阅勘误手册" TMYRT1050CF"中"FRR010661"的描述 SD B1 02 R94 7-57-4α 03.2 R96 1603 0Ω 1603 SD' · One for Host, another for Host. EasyARM-RT1052将0TG1分为HOST1及DEVICE1两个接口,0TG2具做为HOST2 GPIO3 IO02 0Ω GPIO3 IO05 · One for Host, another is un-used R97 0603 $0\Omega$ SDIO DATA[0..3] SDIO DATA[0..3] (7-3) i. MXRT1052 Others 要点8: WiFi模块信号电阻默认不焊接,验证无线模块时需自行焊接 NVCC GPIO 3V3 GPIO B1 14 要点1: ITAG MOD必须外部接下拉到地将模块配置为软件调试模式,对应管脚为GPIO AD BO 08 R99 C89 C90 C91 C92 R110 $\Omega$ LCD PWR 0.1μF,±10% F10 GND 1 0402 10K.±5% 0603 4.7µF,±20% 0.1µF,±10% 0.1μF,±10% NVCC GPIO GPIO BI 15 R101 1603 0Ω UFINZ R102 0Ω WL REG ON # ITAG MOD选择SWD模式 NVCC GPIO 2 JTAG\_MOD is called SJC\_MOD in some NVCC GPIO has ITAC MOD is low the ITAC signal JTAG MOD shall be externally 3 JITAG MOD nnected to GND for normal operation in a TAPs to the chain. When JTAG MOD is high, the JTAG PWM2 PWMA3 Buzzer M11 GPIO AD B0 01 M11 GPIO AD B0 02 AD B0 03 GPIO\_AD\_B0\_00 GPIO\_B0\_00 PWM USB OTG1 ID -USB OTG1 ID GPIO B0 01 G14 GPIO AD B0 03 G14 GPIO AD B0 05 G14 GPIO AD B0 05 G14 GPIO AD B0 05 G14 GPIO AD B0 06 GPIO B0 02 UART6 要点2: 调试串口UART1建议增加10K上拉电阻以防止误触发,对应管脚为GPIO\_AD\_BO\_12/13 GPIO\_B0\_03 BOOT & MQS GPIO B0 04 要点3: 串行下载模式下,内部ROM先轮询UART1,如UART1没反应,则ROM将RT作为一个HID设备 GPIO\_B0\_05 E14 GPIO AD B0 05 F12 GPIO AD B0 06 F13 GPIO AD B0 07 F13 GPIO AD B0 08 LCD DATA GPIO\_B0\_06 GPIO\_B0\_07 SWD SWD CLK The Sarial Downloader provides a means to download a program image to the chip over the USB and UART serial connections. In this mode, ROM programs WDOG1 for a time-out specified by the fuse WDOG Time-out Select (See the Fusemap chapter fit LCD PWR ENET nRS GPIO\_AD\_B0\_08 GPIO\_B0\_08 The ROM code firstly polls the UART1 signals from TXD1/RXD1. LCD DATA ENET\_nRST LCD PWM GPIO AD BO OC GPIO BO 00 G13 GPIO AD B0 10 D9 A10 LCD DATA6 .UART1 GPIO B0 1 WDOG1 B UART1 TX UART1 RX CAN2 TX WDOG1 F UART1 T GPIO\_AD\_B0\_11 GPIO B0 ne-out Select (See the Fusemap chapter for talls) if the WDOG\_ENABLE eFuse is 1 d continuously polls for the USB and UART LCD DATA8 GPIO AD B0 13 GPIO BO L14 GPIO AD B0 13 UART1 ADC1\_IN2 GPIO B0 1 connection. If no activity is found on USB OTG1 and UART 1/2 and the watchdog CAN2 TX CAN2 RX 2. USB1 ADC1 IN3 LCD DATA10 GPIO AD BO 14 GPIO B0 C. CAN2 L10 LCD DATA11 GPIO AD B0 1: GPIO B0 1 要点7: BOOT\_MODEO/1可复用为MQS功能,验证MQS功能时,请在上电后接入耳机,避免影响BOOT\_MODE的电平 要点4: EasyARM-RT1052在SD卡插入检测管脚中加入一个LED指示灯,用于识别SD卡的插入与否 要点8; CSI接口信号与其它外设信号为复用关系,验证摄像头功能,产品设计中需对数据线做等长处理 LCD DATA12 GPIO AD B1 00 GPIO B1 00 SDLED R115 0603 0Ω I2C1 B11 C11 D11 I2C1 SDA SD0 CD B K11 L11 LCD DATA13 GPIO\_AD\_B1\_01 GPIO\_B1\_01 GPT01 T018 HART2 TX LCD DATA14 SDLED UART2 GPIO1 IO19 CSI PIXCLK CSI MCLK GPIO AD B1 02 GPIO B1 02 LCD 要点5: EasyARM-RT1052的LCD接口除支持电容屏之外,还支持电阻屏,电阻屏采用4线模式 要点6: 电容屏液晶套件型号为: TFT-4. 3A. 电阻屏液晶套件型号为: TFT-4. 3CAP, 默认不配屏 RUN GPIO AD B1 03 GPIO B1 03 GPIO1 IO ENET RXD0 ENET RXD1 E12 GPIO\_AD\_B1\_04 GPIO B1 04 D12 C12 B12 GPIO GPIO1 IO2 GPIO AD BL 05 GPIO B1 05 Table 54-6. The ports used in TSC and GPIO GPIO AD B1 06 GPIO B1 06 UART3 UART3 B K10 ENET TXD0 GPIO ports CAN1 TX CAN1 RX UART8 T UART8 R GPIO\_AD\_B1\_07 GPIO B1 07 ENET TXD1 GPIO AD BL 08 GPIO AD B1\_11 GPIO B1 08 C CAN1 A13 B13 GPIO AD B1 09 GPIO B1 GPIO AD B1 12 GPIO\_AD\_B1\_10 GPIO\_AD\_B1\_11 GPIO\_AD\_B1\_13 GPIO B1 0402 Ain [2] UART8 ENET UART8 RX GPIO B1 SPI3 CS0 SPI3 MISO SPI3 MOS GPIO1 28 ynlr GPIO1 29 ypll GPIO AD B1 12 Ain [4] GPIO AD B1 15 UART5 GPIO AD B1 13 GPIO B1 GPIO1 30 xnur GPIO1 28 GPIO AD B1 14 TS YM R184 -0603 0Ω GPIO B1 14 WiFi GPI0 SPI3 CSI R185 TS YP GPIO AD B1 15 GPIO B1 15 0603 $0\Omega$ R186 R187 0603 TS XP 0.0 GPIO1 31 ENET RXD[0 1] MIMXRT1052CVL5B 修改日期 修改内容 Ametal开发平台-I, MXRT1050 外设控制器 设计日期 2017-09-29 图纸名称 i.MX-RT1052 Peripherals **达** 广州周立功单片机科技有限公司 (审核人员 审核日期 (审核日期) 产品名称 Ametal开发平台-I, MXRT1050 评估套件 EasvARM-RT1052 图纸版本 Rev. A 第7张/共16张

# 8. QSPI Flash

# (8-1) QSPI Flash



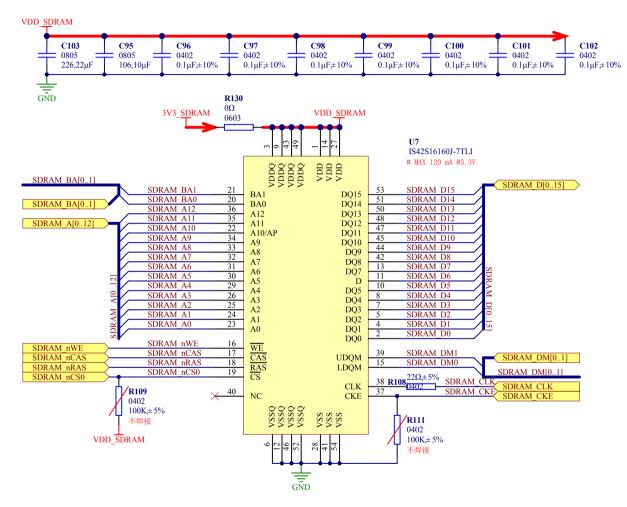


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<b>龙</b> 广州周立功单片机科技有限公司	设计人员	LJH	设计日期	2017-09-29	图纸名称	QSPI Flash	图组	低描述 A	metal开发平台-8M	B QSPI Nor	Flash			
₩ / 川川川 丛 切 毕 月 机 科 仅 有 限 公 可	审核人员	〈审核日期	車核日期	〈审核人员〉	产品名称	Ametal开发平台-I.MXRT1050	产品	出整界 I	CasyARM-RT1052	图纸版本	Rev. A	第 8 张 / 共	է 16 张	A4

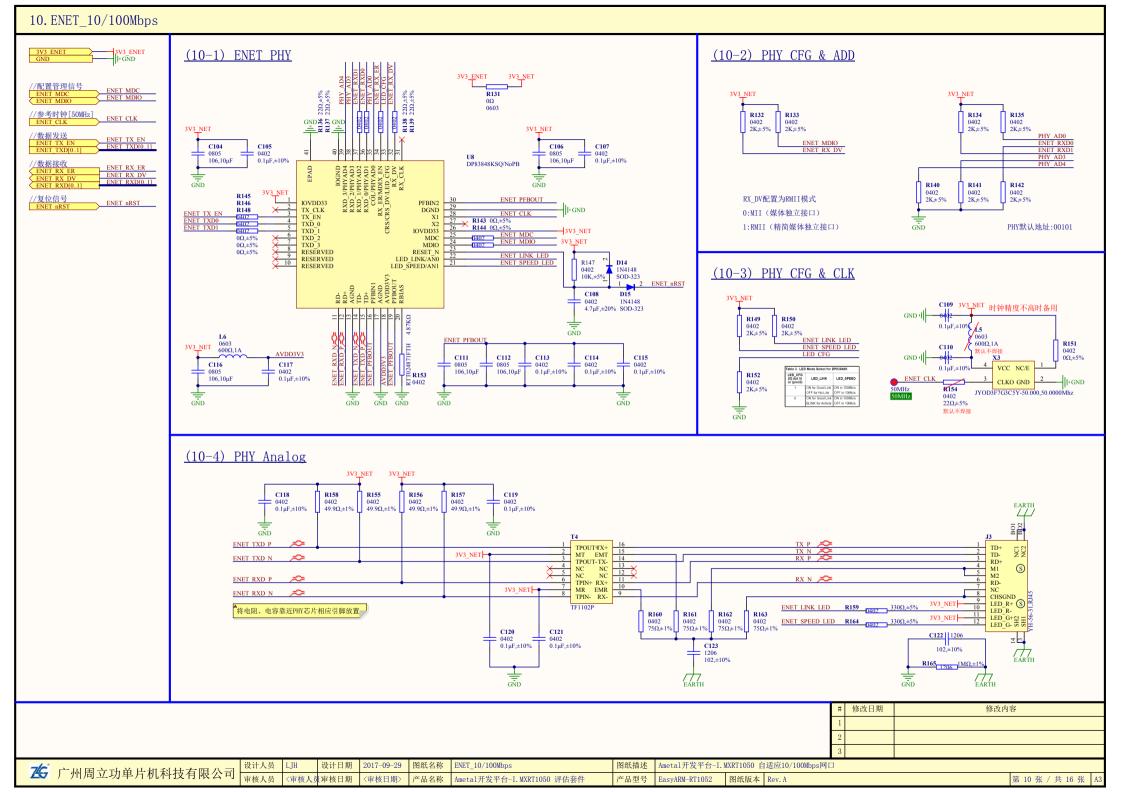
# 9. SDRAM\_IS42S16160J-7TLI

# (9-1) SDRAM-32MB



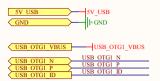


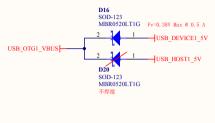
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<b>龙</b> 广州周立功单片机科技有限公司	设计人员	LJH	设计日期	2017-09-29	图纸名称	SDRAM_IS42S16160J-7TLI	图纸描述	Ametal开发平台-I.	MXRT1050 SI	ORAM		
★ / 川同立切平月机科技有限公司	审核人员	〈审核日期	軍核日期	〈审核人员〉	产品名称	Ametal开发平台-I.MXRT1050	产品整件	EasyARM-RT1052	图纸版本	Rev. A	第 9 张 / 共 16 张	A4

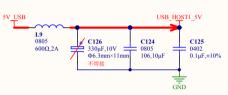


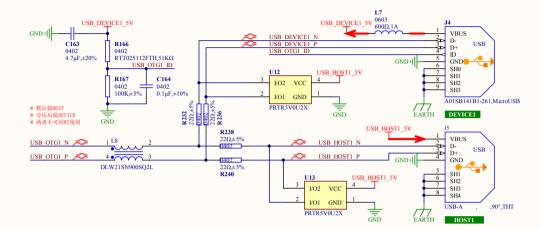
### 11.〈图纸名称〉

### (11-1) USB OTG1



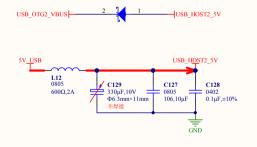






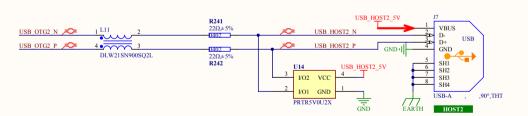
#### (11-2) USB HOST2

USB\_OTG2\_VBUS USB\_OTG2\_VBUS USB OTG2 N USB OTG2 P



SOD-123

MBR0520LT1G

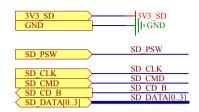


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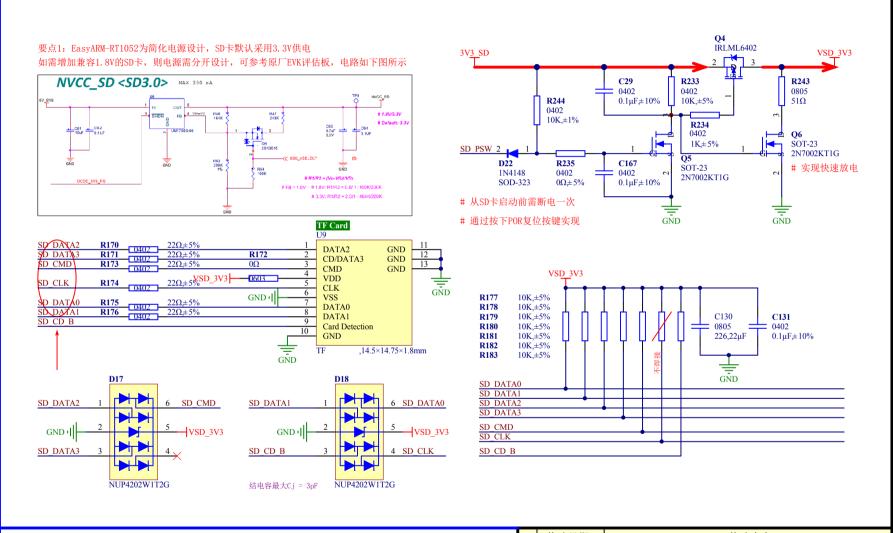
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137	

〈图纸名称〉 Ametal开发平台-I. MXRT1050 评估套件 图纸描述

# 12.〈图纸名称〉



## (12-1) SD CARD (3V3)



#	修改日	期	修改内容
1			
2			
3			
图组	图纸描述 〈图纸		描述〉

**太** 广州周立功单片机科技有限公司

设计人员

审核人员

〈设计人鼻没计日期 (审核日期) 审核日期 〈设计日期〉 (审核人员) 产品名称

图纸名称

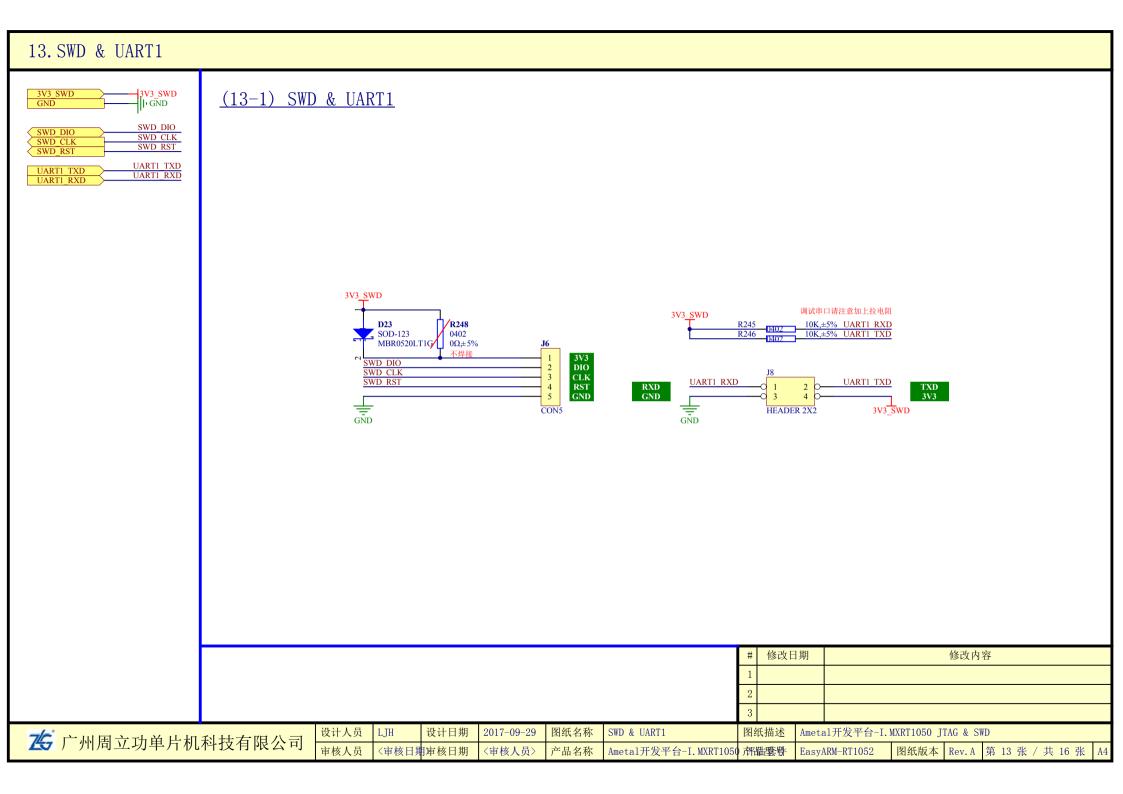
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Ametal开发平台-I.MXRT1050

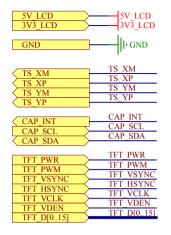
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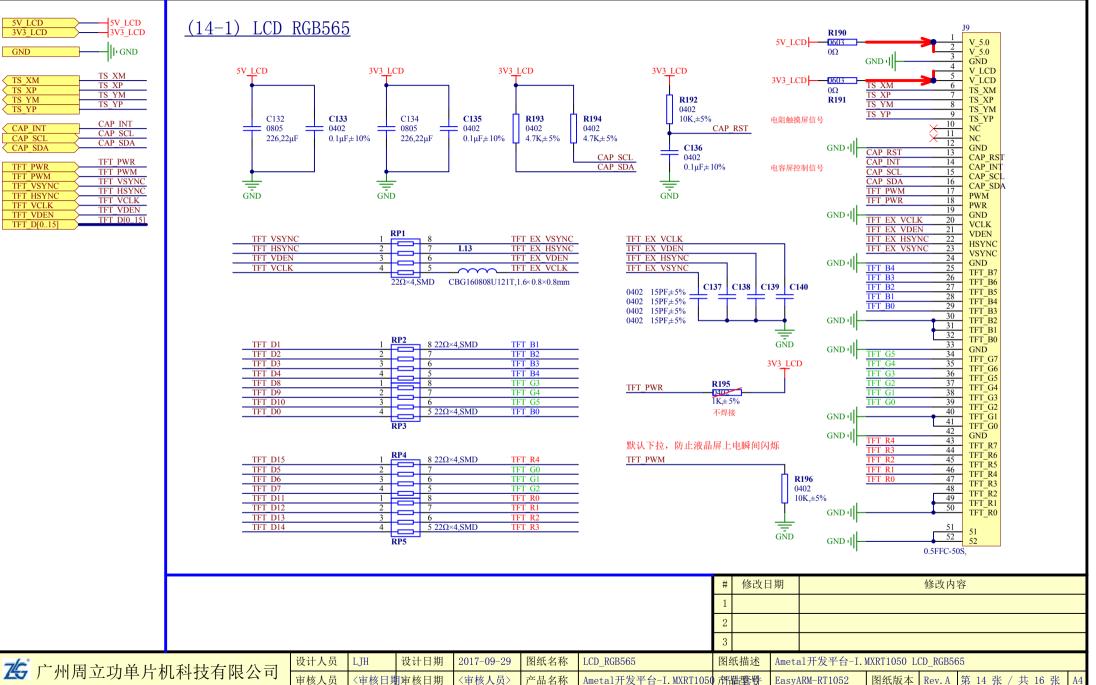
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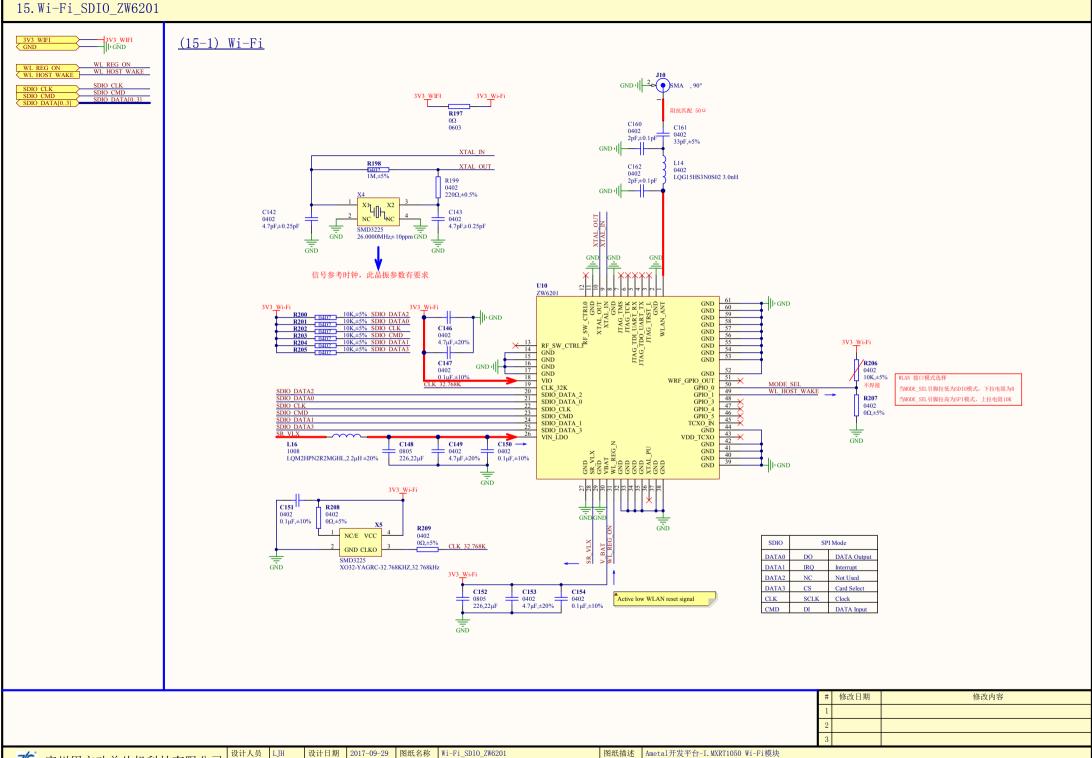
图纸版本 〈图纸版第〉12 张 / 共 16 张



# 14. LCD RGB565







**送** 广州周立功单片机科技有限公司

审核日期

(审核日期)

产品名称

Ametal开发平台-I. MXRT1050 评估套件

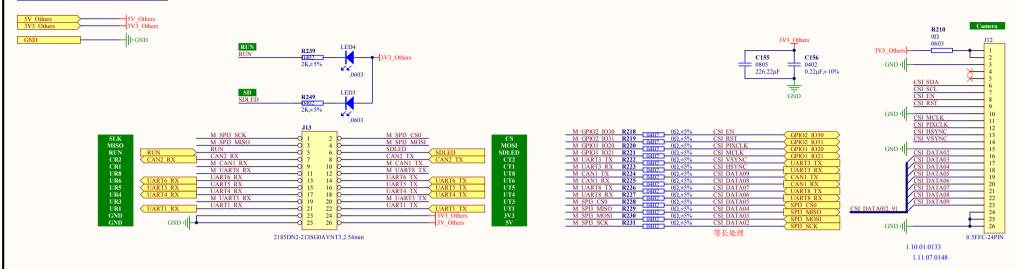
EasvARM-RT1052

图纸版本 Rev. A

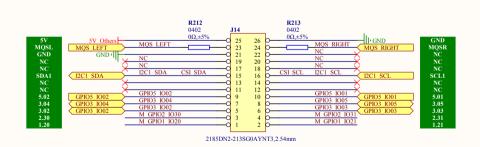
第 15 张 / 共 16 张

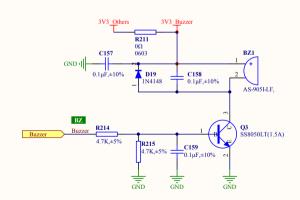
#### 16. Others & Buzzer & CSI

#### (16-1) Others-1 & CSI



### (16-2) Others-2 & Buzzer





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、(SI接口			

**送** 广州周立功单片机科技有限公司

设计日期 (审核人是)审核日期 2017-09-29 (审核日期)

图纸名称 Others & Buzzer & CSI 产品名称 Ametal开发平台-I. MXRT1050 评估套件

EasvARM-RT1052

Ametal开发平台-I. MXRT1050 引出资源、蜂鸣器 图纸版本 Rev. A

第 16 张 / 共 16 张