



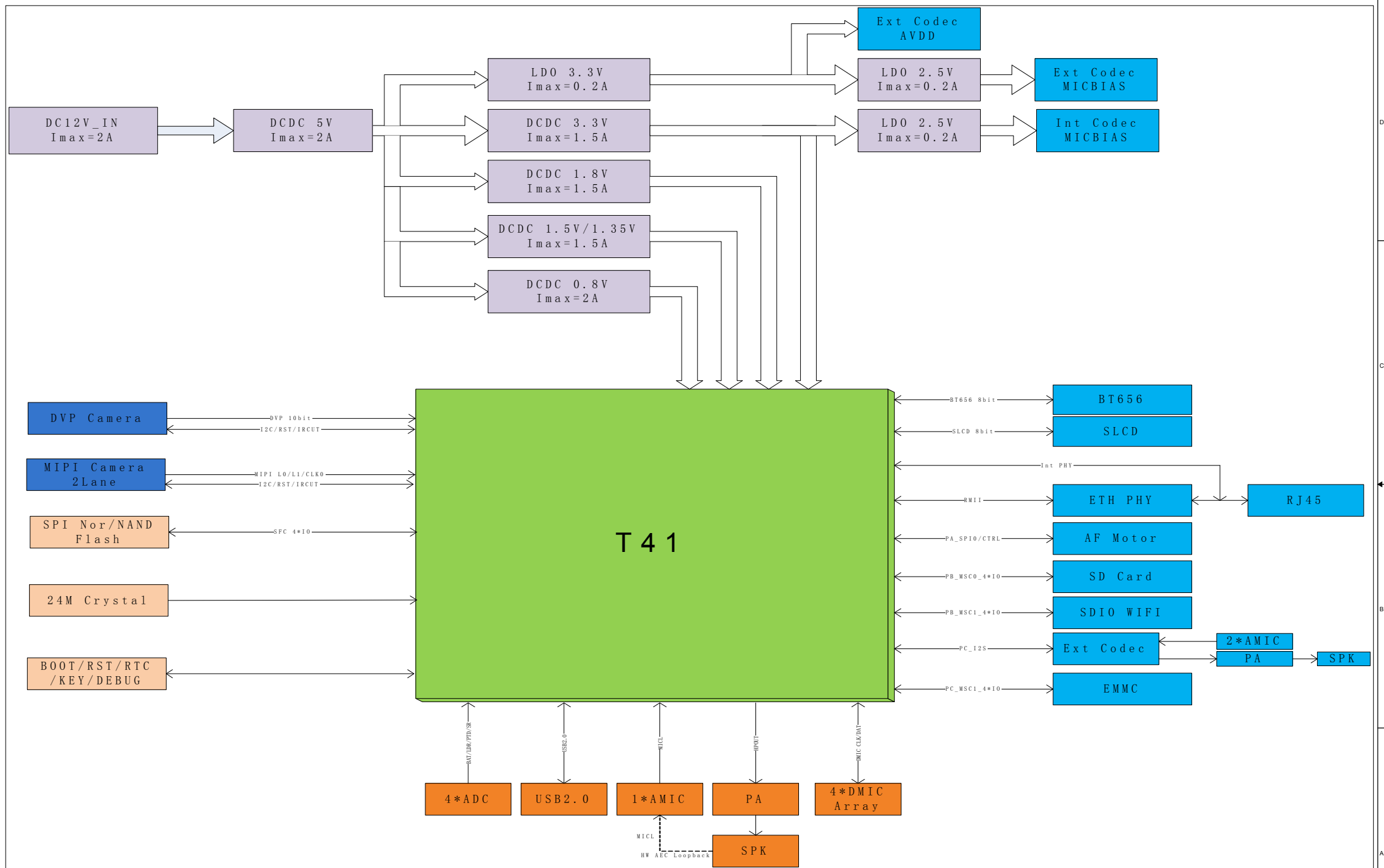
RD_T41_MARMOT

Schematic Revision 1.2

Title	Page
COVER	1
SYSTEM-ARCHITECTURE	2
POWER-SUPPLY	3
T41_POWER	4
T41_SYS_APeripheral	5
T41_INTERFACE_1	6
T41_INTERFACE_2	7
AUDIO	8
MIPI_DVP_CAMERA	9
EMMC_DMIC	10
I2S_CODEC	11
SD_WIFI_AF_MOTOR	12
ETH_PHY	13
SLCD_BT656_OUT	14
UART_RTC_BOOT_EFUSE_KEY	15
REVISION-HISTORY	16

<Core Design>

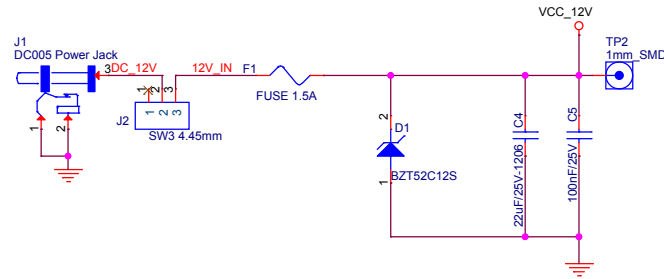
INGENIC SEMICONDUCTOR CO., LTD			
Title		RD_T41_MARMOT	
Size	Page Name	Rev	
A3	PAGE01_COVER	V1.2	
Date:	Wednesday, October 26, 2022	Sheet	1 of 16



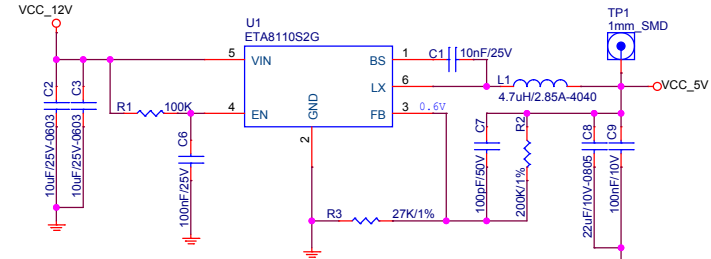
POWER-SUPPLY

Note: The jumper in J3 is used for measuring power consumption and can be removed in the product board.

12V DC-IN

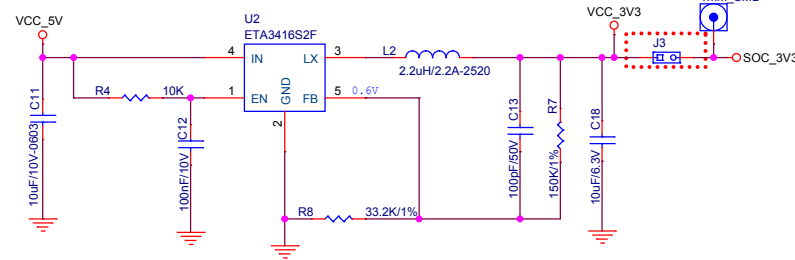


5V/2A



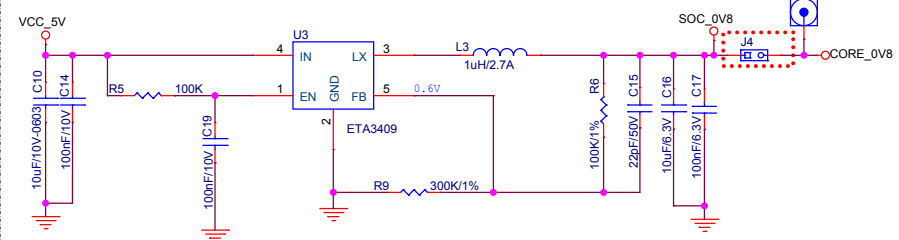
$$V_{OUT} = (1 + 200K/27K) * 0.6 = 5V$$

3.3V/1.5A



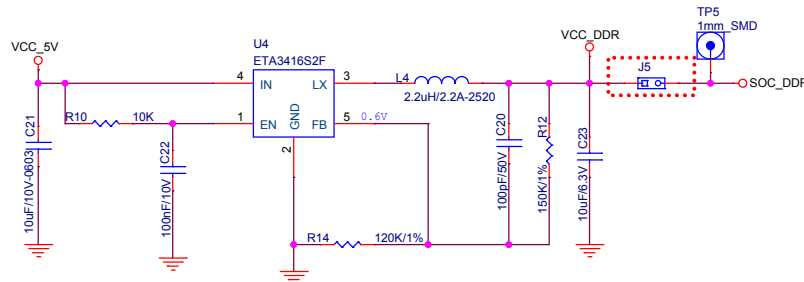
Note: Compatible with LN5058/ETA3486
 $V_{OUT} = (1 + 150K/33.2K) * 0.6 = 3.3V$

VCC Core 0.8V/2A



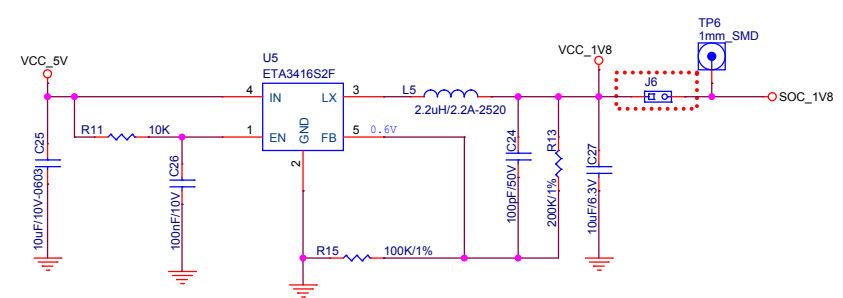
$$V_{OUT} = (1 + 100K/300K) * 0.6 = 0.8V$$

DDR POWER/1.5A

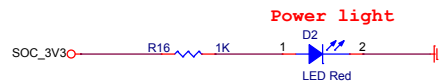


Note: Compatible with LN5058/ETA3486
 $V_{CC_DDR} = (1 + 200K/100K) * 0.6 = 1.8V$ for DDR2
 $V_{CC_DDR} = (1 + 150K/100K) * 0.6 = 1.5V$ for DDR2L or DDR3
 $V_{CC_DDR} = (1 + 150K/120K) * 0.6 = 1.35V$ for DDR3L ☒

1.8V/1.5A



Note: Compatible with LN5058/ETA3486
 $V_{OUT} = (1 + 200K/100K) * 0.6 = 1.8V$



<Core Design>

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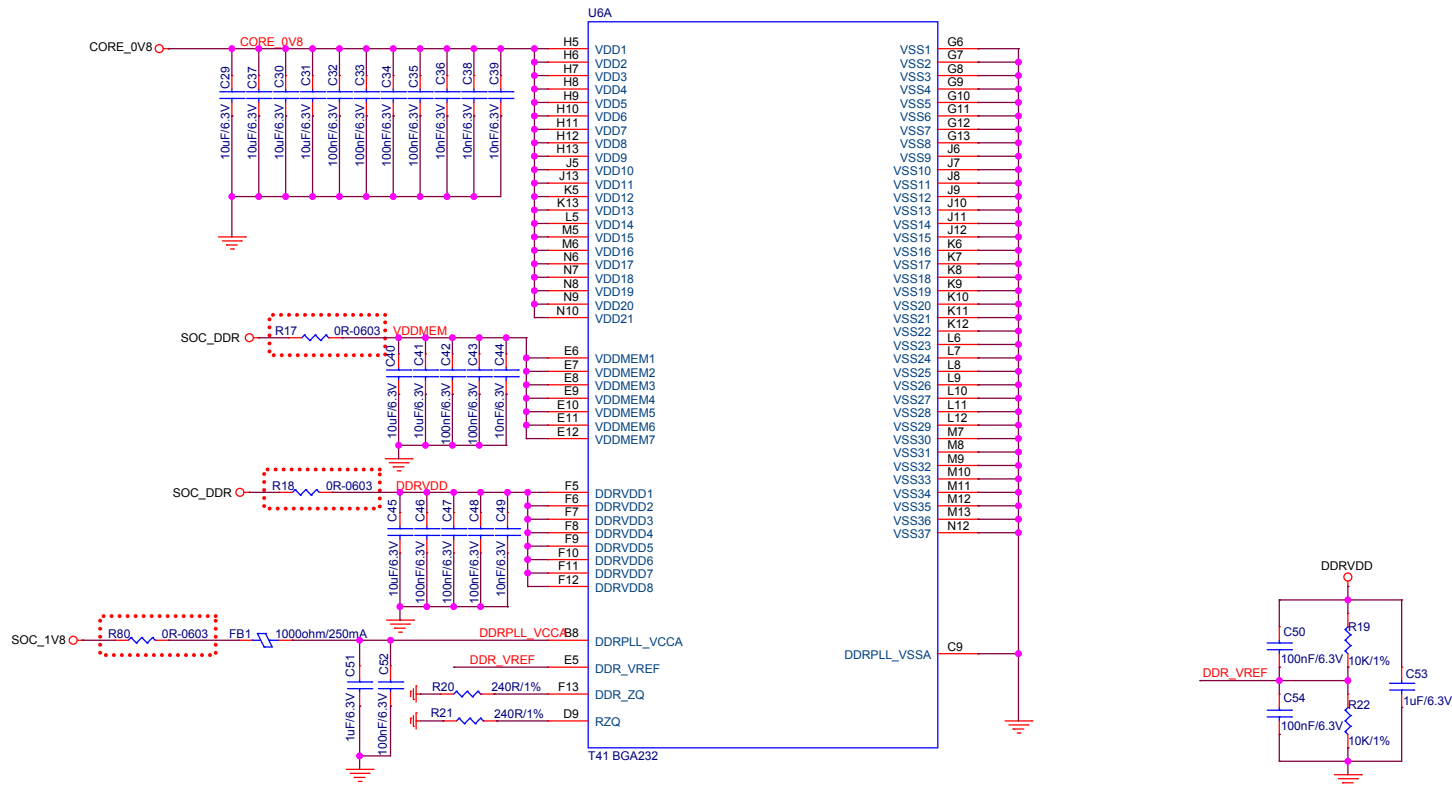
Title RD_T41_MARMOT

Size A3 Page Name PAGE03_POWER_SUPPLY

Date: Wednesday, October 26, 2022 Sheet 3 of 16

Rev V1.2

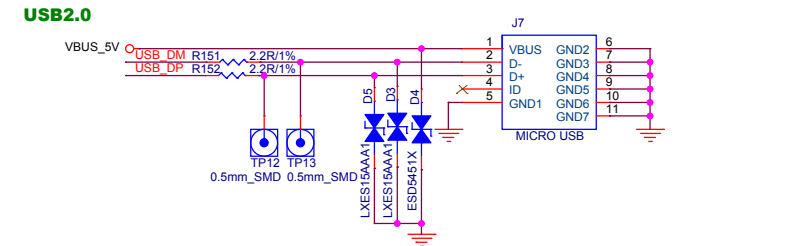
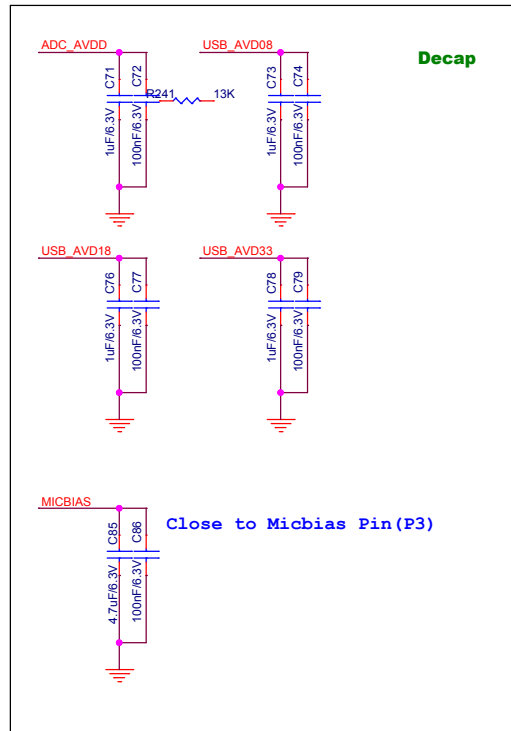
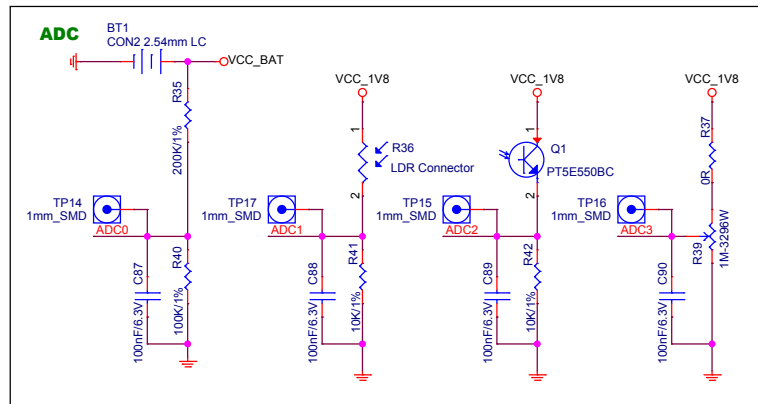
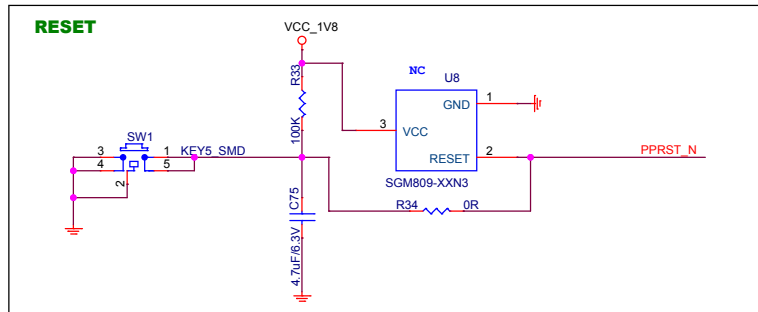
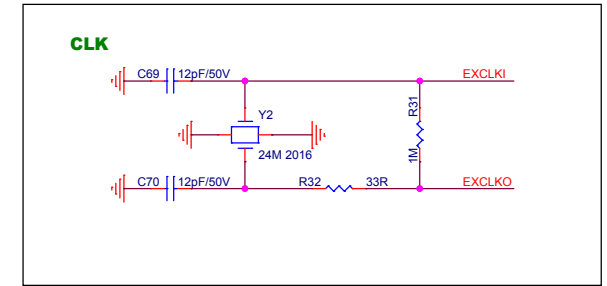
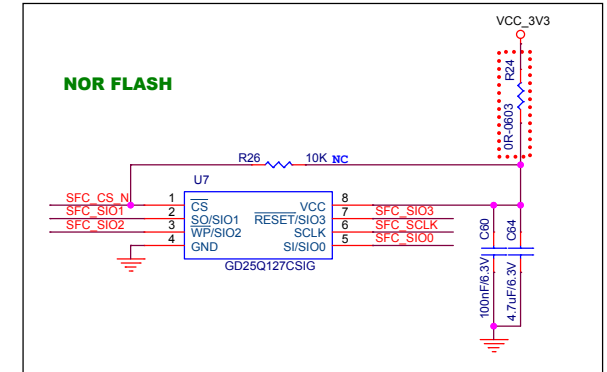
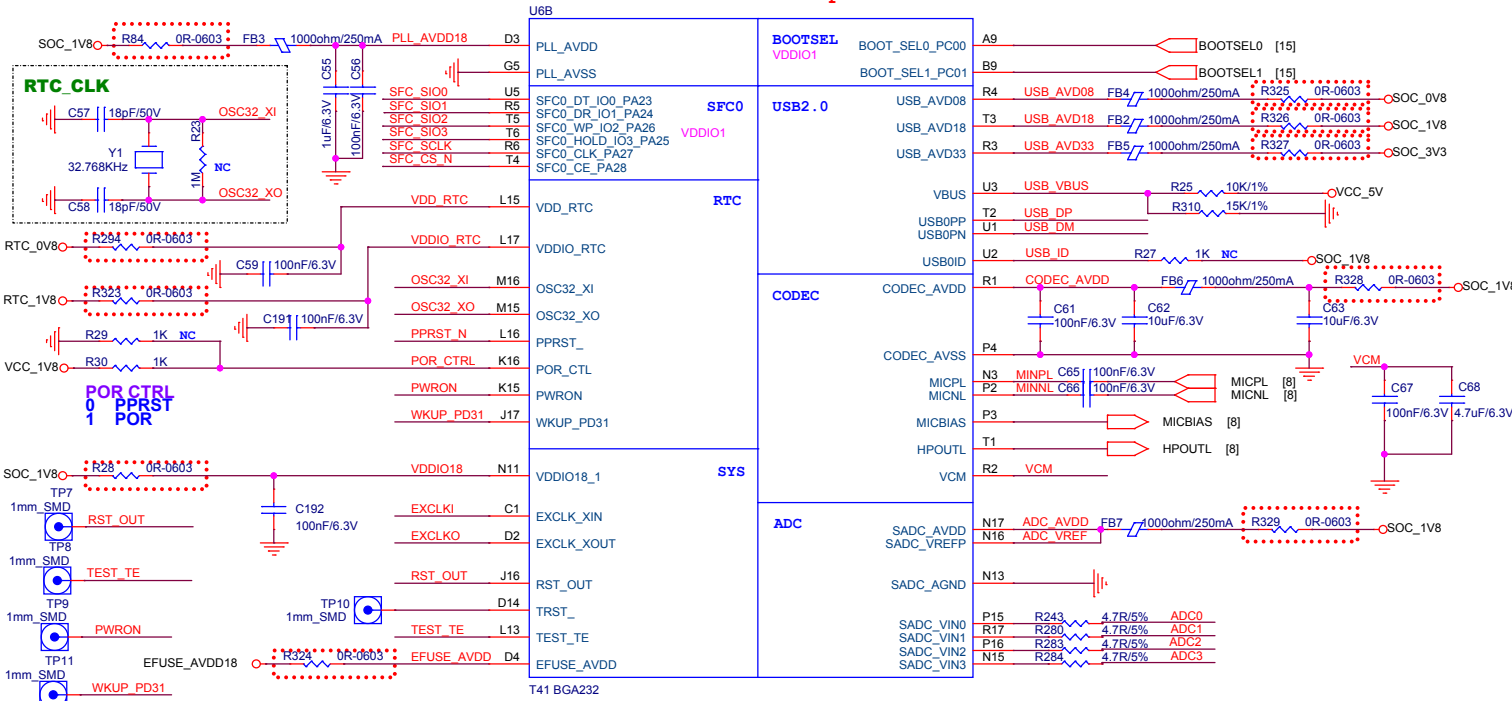
T41_POWER



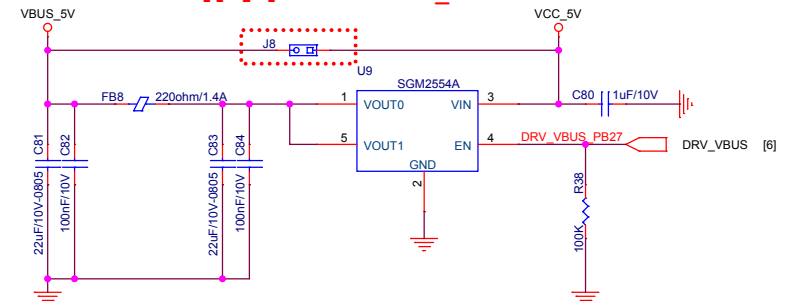
Note: The 0Ω resistance in [] is used for measuring power consumption and can be removed in the product board.

T41_SYS_APeripheral

Note: The 0Ω resistance in is used for measuring power consumption and can be removed in the product board.



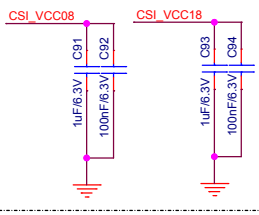
Note: The jumper in is used to select VCC_5V or SGM2554A to supply power to VBUS_5V.



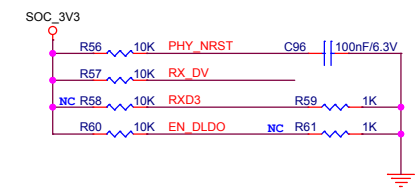
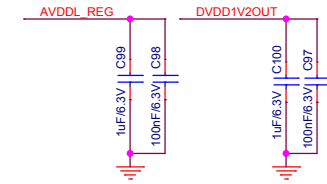
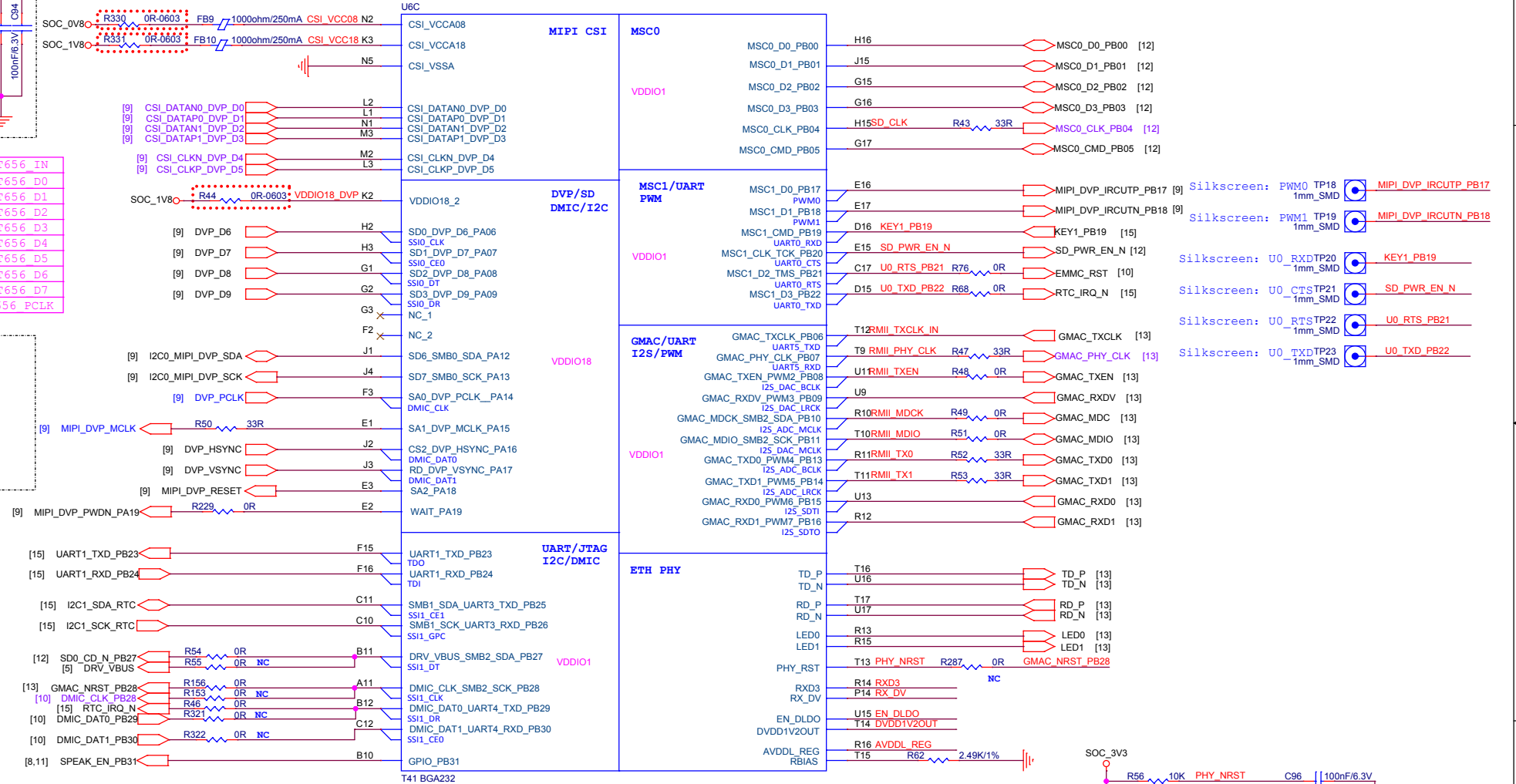
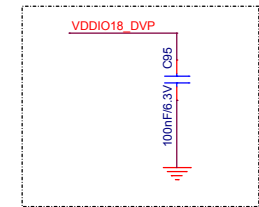
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INGENIC SEMICONDUCTOR CO., LTD		
Title	RD_T41_MARMOT	
Size	Page Name	Rev
A3	PAGE05_T41_SYS_APeripheral	V1.2
Date:	Monday, October 31, 2022	Sheet 5 of 16

T41_INTERFACE_1

Note: The 0Ω resistance in [] is used for measuring power consumption and can be removed in the product board.

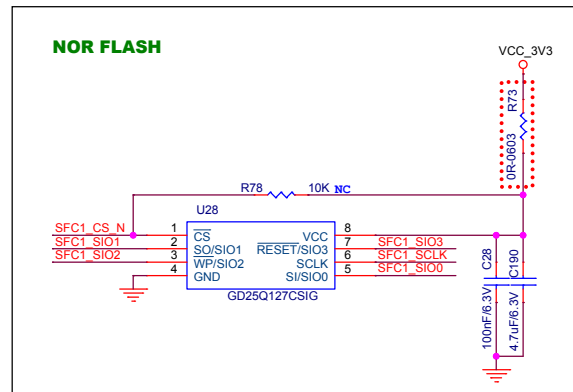
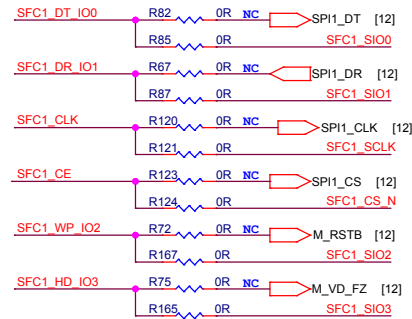
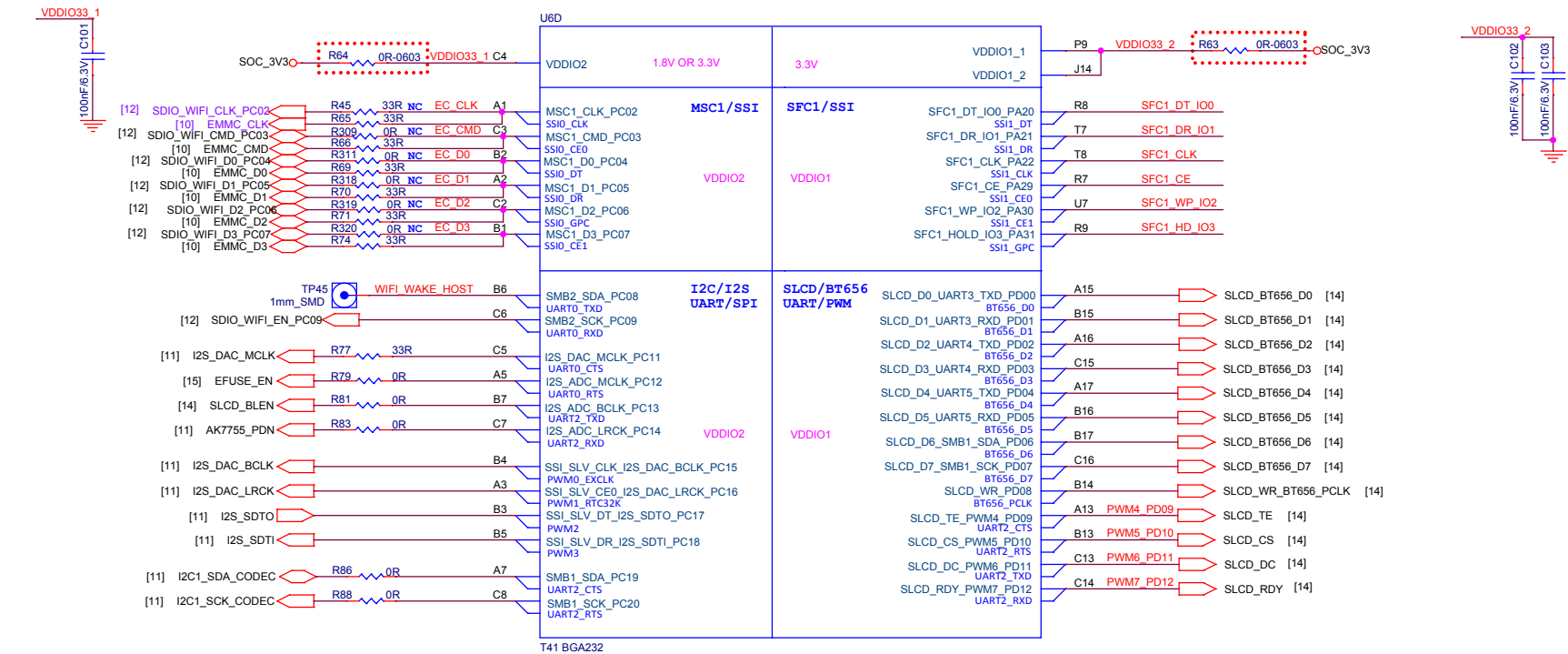


PIN	DVP	BT656 IN
I2	DVP D0	BT656 D0
L1	DVP D1	BT656 D1
N1	DVP D2	BT656 D2
M3	DVP D3	BT656 D3
M2	DVP D4	BT656 D4
L3	DVP D5	BT656 D5
H2	DVP D6	BT656 D6
H3	DVP D7	BT656 D7
F3	DVP PCLK	BT656 PCLK



T41_INTERFACE_2

Note: The 0Ω resistance in is used for measuring power consumption and can be removed in the product board.



Silkscreen: PWM4 TP26 1mm_SMD → PWM4_PD09
 Silkscreen: PWM5 TP27 1mm_SMD → PWM5_PD10
 Silkscreen: PWM6 TP28 1mm_SMD → PWM6_PD11
 Silkscreen: PWM7 TP29 1mm_SMD → PWM7_PD12

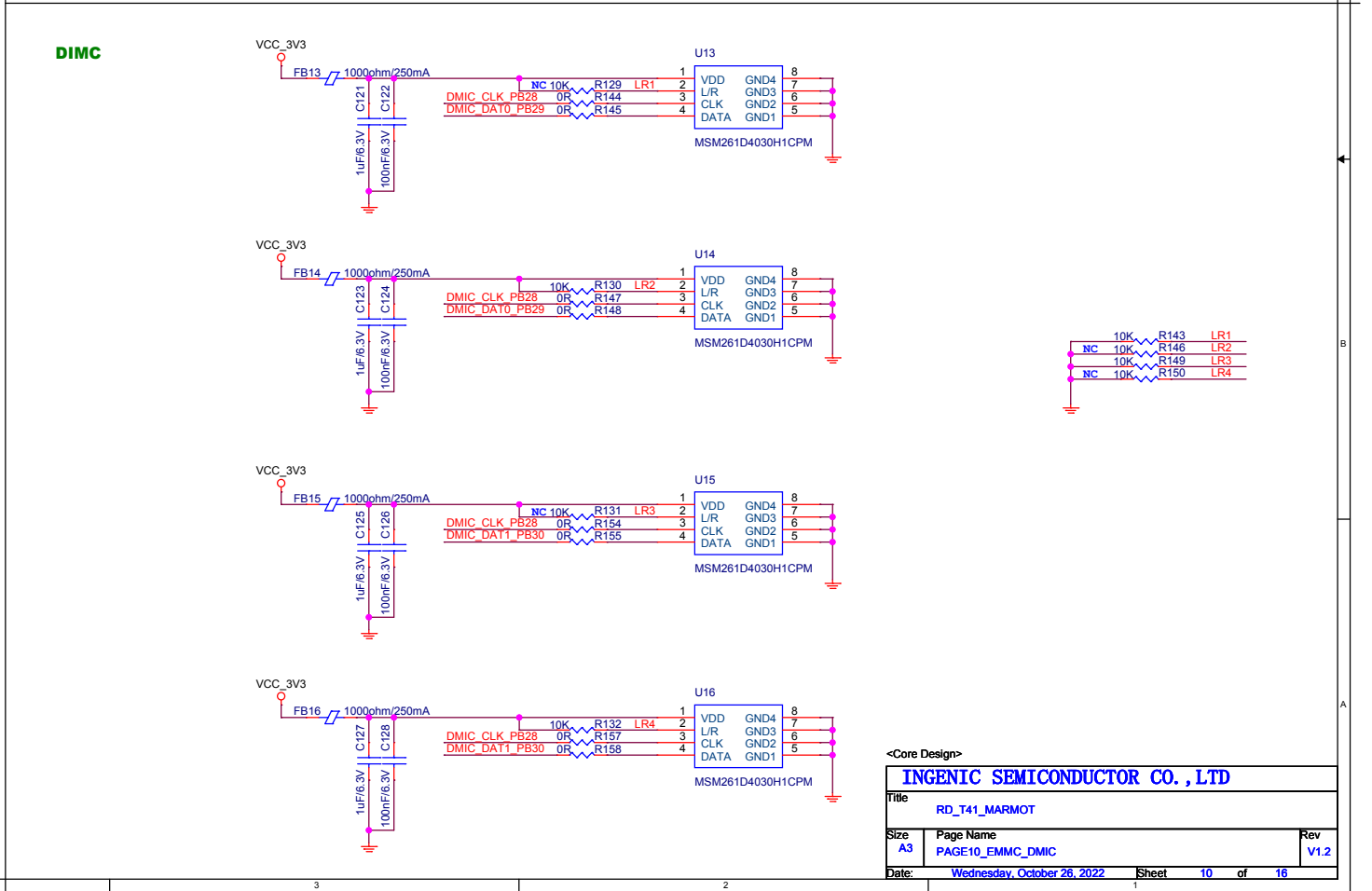
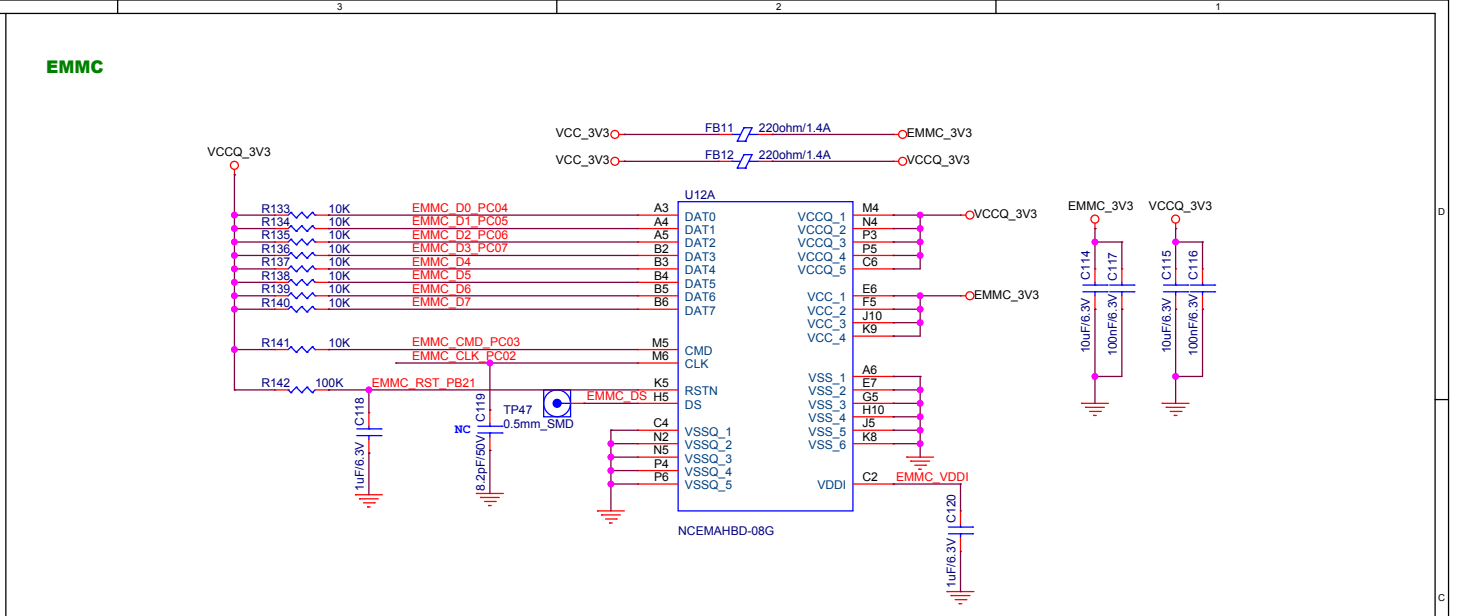
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INGENIC SEMICONDUCTOR CO., LTD

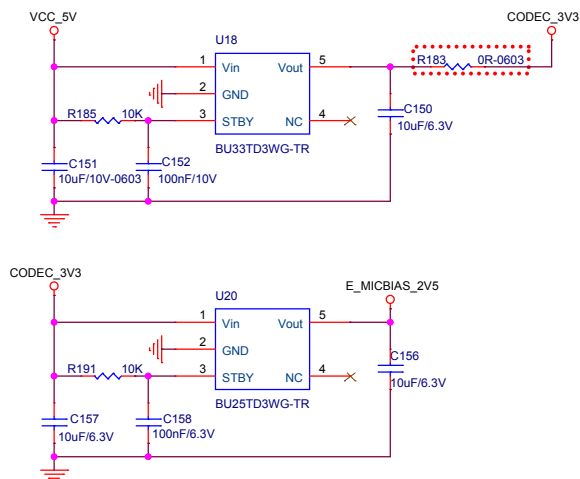
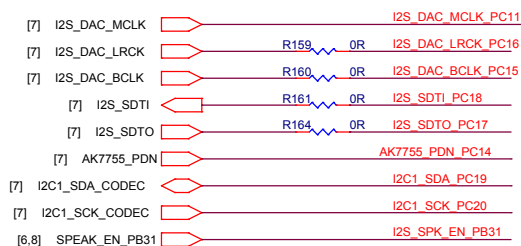
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 Page Name: PAGE07_T41_INTERFACE_2
 Date: Wednesday, October 26, 2022
 Sheet: 7 of 16
 Rev: V1.2

EMMC_DMIC

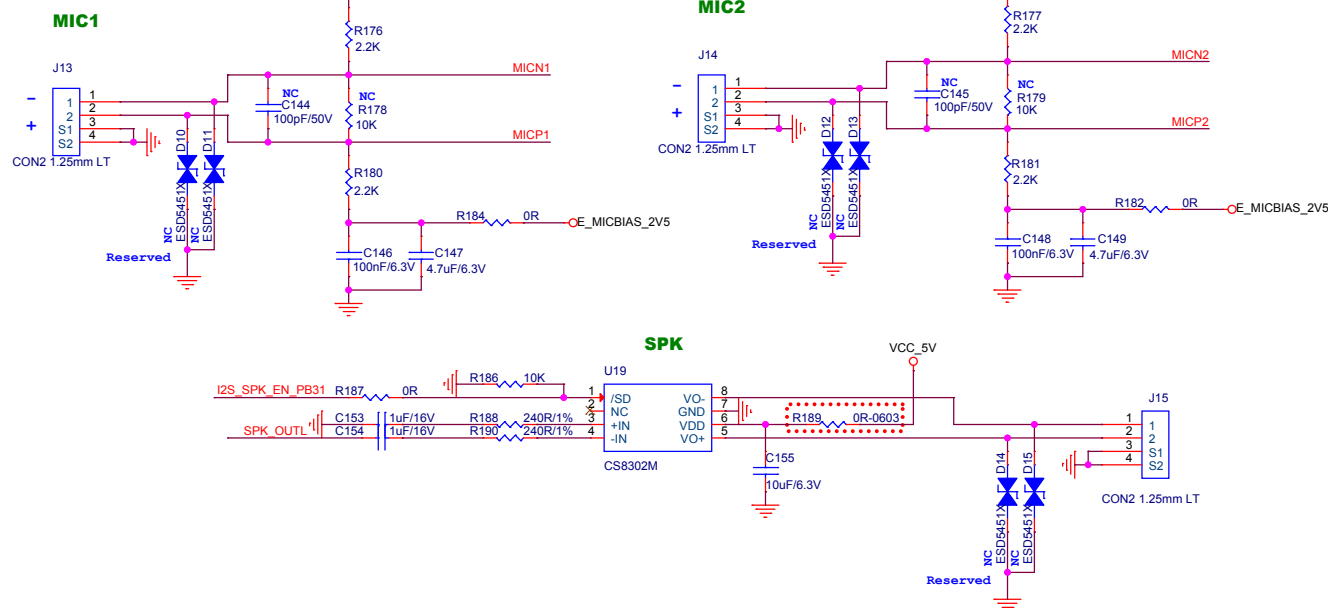
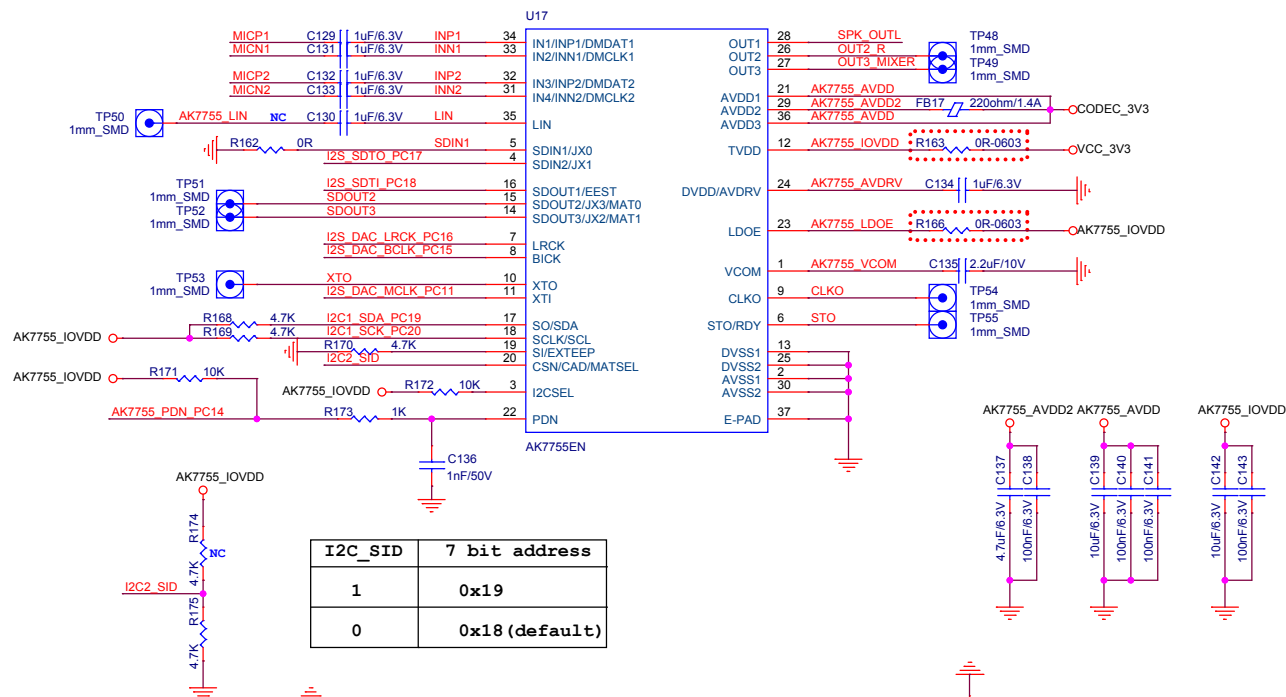
Pin	Signal	Connector Pin
[7]	EMMC_CLK	EMMC_CLK_PC02
[7]	EMMC_CMD	EMMC_CMD_PC03
[7]	EMMC_D0	EMMC_D0_PC04
[7]	EMMC_D1	EMMC_D1_PC05
[7]	EMMC_D2	EMMC_D2_PC06
[7]	EMMC_D3	EMMC_D3_PC07
[6]	EMMC_RST	EMMC_RST_PB21
[6]	DMIC_CLK_PB28	DMIC_CLK_PB28
[6]	DMIC_DAT0_PB29	DMIC_DAT0_PB29
[6]	DMIC_DAT1_PB30	DMIC_DAT1_PB30



I2S_CODEC



Note: The 0Ω resistance in [.....] is used for measuring power consumption and can be removed in the product board.



<Core Design>

INGENIC SEMICONDUCTOR CO., LTD

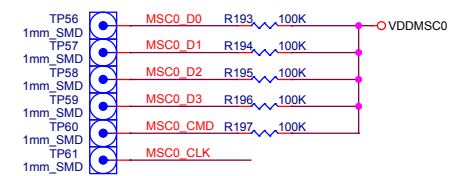
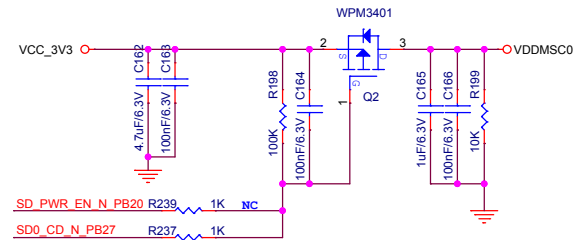
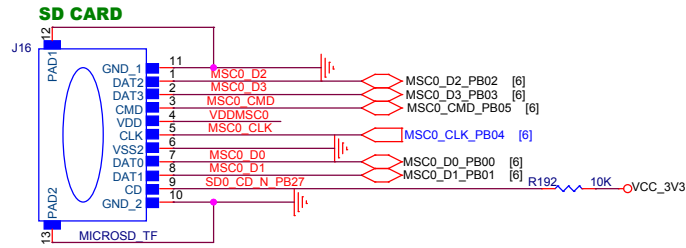
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Site	Page Name	Page
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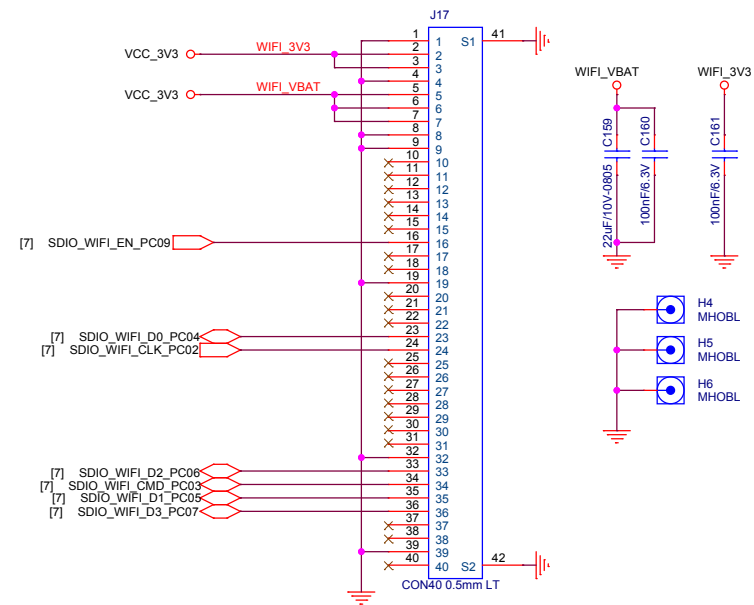
Size	Page Name	Rev
A3	PAGE11 I2S CODEC	V1.2

Date: Wednesday, October 26, 2022 Sheet 11 of 16

SD_WIFI_AF_MOTOR



WIFI CONNECTOR



[7] SPI1_DT 0R SPI1_DT_PA20

[7] SPI1_DR 0R SPI1_DR_PA21

[7] SPI1_CLK 0R SPI1_CLK_PA22

[7] SPI1_CS 0R SPI1_CS_PA29

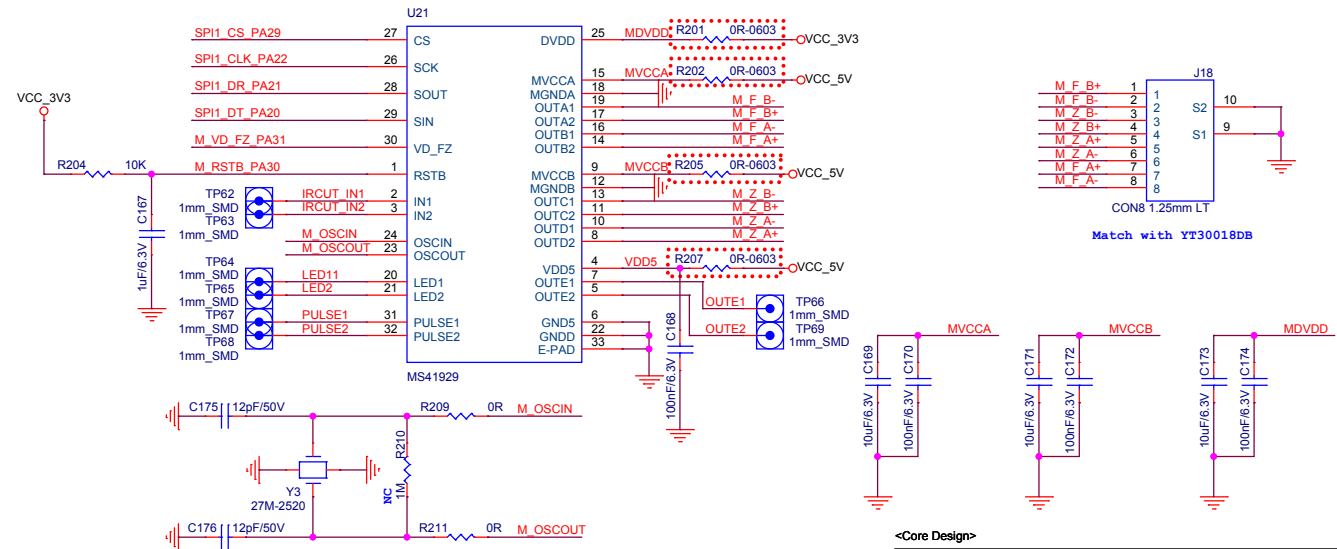
[7] M_VD_FZ 0R M_VD_FZ_PA31

[7] M_RSTB 0R M_RSTB_PA30

[6] SD0_CD_N_PB27 SD0_CD_N_PB27

[6] SD_PWR_EN_N SD_PWR_EN_N_PB20

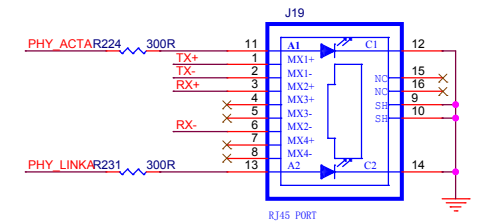
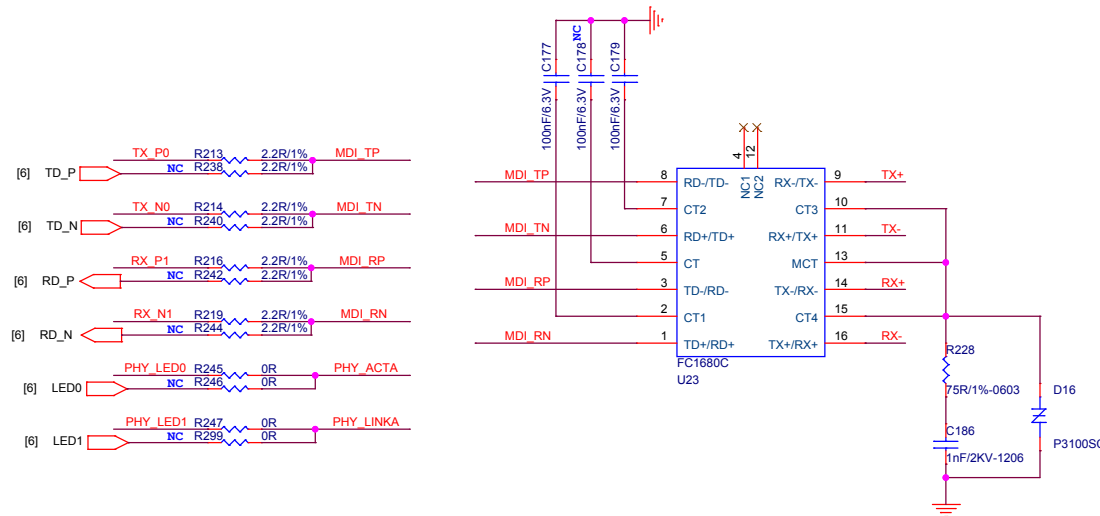
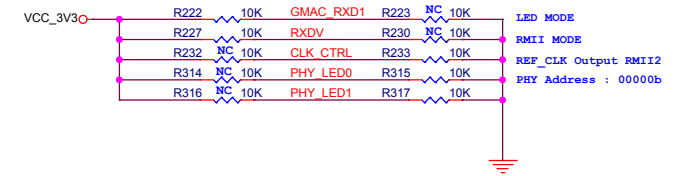
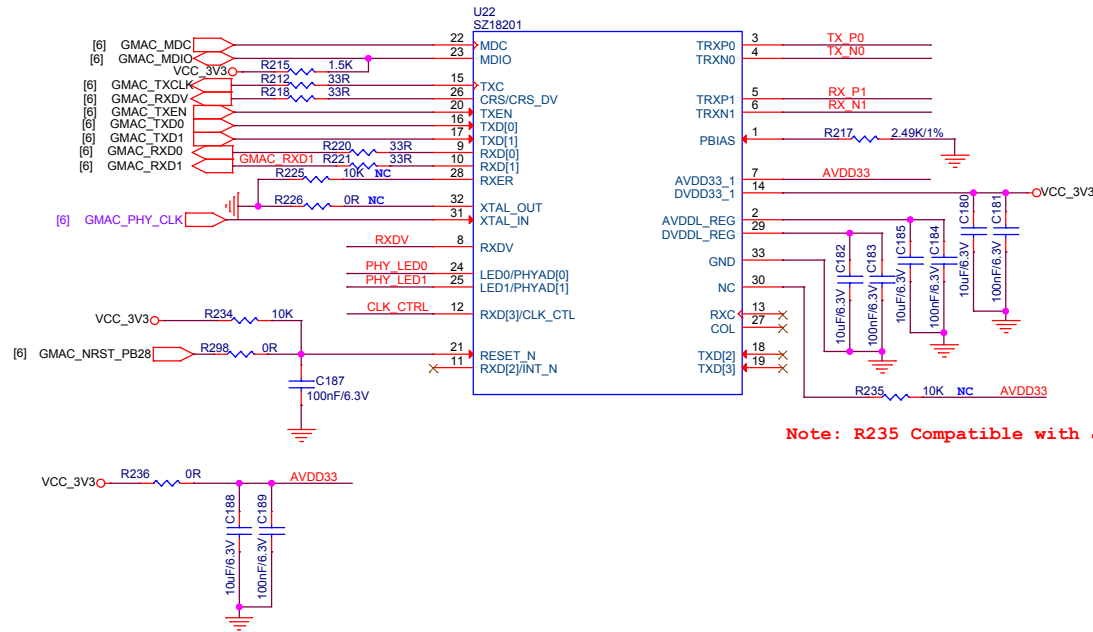
SPI AF MOTOR



Note: The 0Ω resistance in [] is used for measuring power consumption and can be removed in the product board.

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INGENIC SEMICONDUCTOR CO., LTD			
Title	RD_T41_MARMOT		
Size	Page Name	Rev	
A3	PAGE12_SD_WIFI_AF_MOTOR	V1.2	
Date:	Wednesday, October 26, 2022	Sheet	12 of 16

ETH_PHY



<Core Design>

INGENIC SEMICONDUCTOR CO., LTD

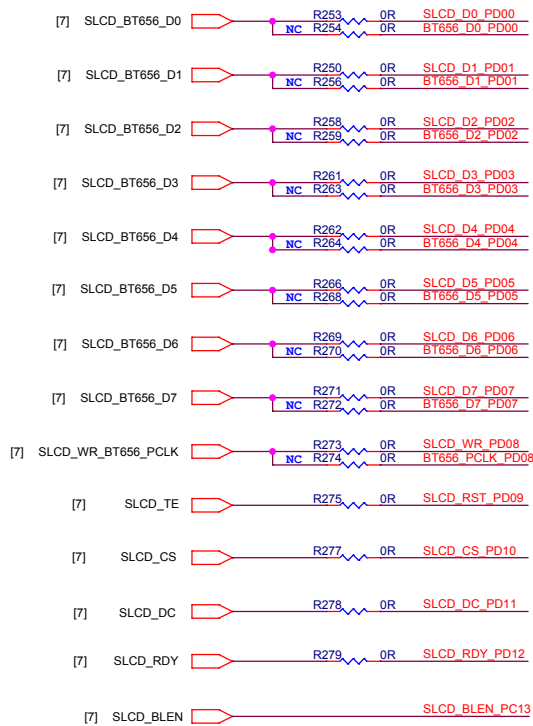
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Size A3 Page Name PAGE13_ETH_PHY

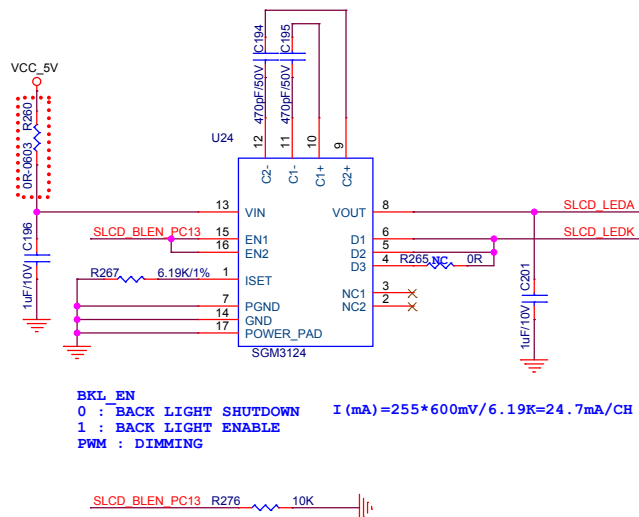
Date: Wednesday, October 26, 2022

Sheet 13 of 16

Rev V1.2

SLCD_BT656_OUT

Note: The 0Ω resistance in [] is used for measuring power consumption and can be removed in the product board.

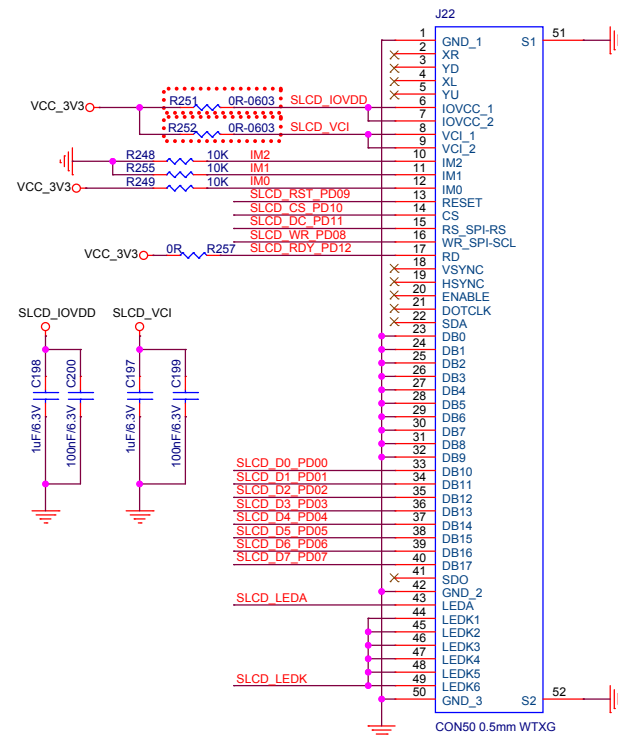
SLCD_BackLight_Power

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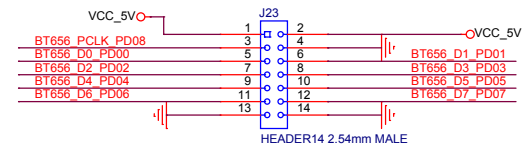
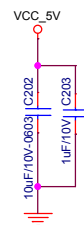
BKL_EN
0 : BACK LIGHT SHUTDOWN      I (mA)=255*600mV/6.19K=24.7mA/CH
1 : BACK LIGHT ENABLE
PWM : DIMMING

```

2.8' SLCD WZ028QVFBA006-RT



BT656



<Core Design>

INGENIC SEMICONDUCTOR CO., LTD

Title	RD_T41_MARMOT
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Size A3	Page Name PAGE14_SLCD_BT656_OUT
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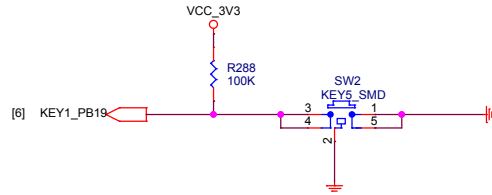
Rev	V1.2
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Date: Wednesday, October 26, 2022 Sheet 14 of 16

UART_RTC_BOOT_EFUSE_KEY

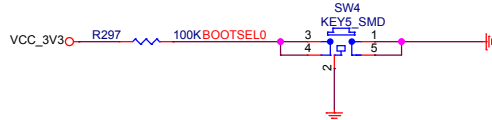
[6] RTC_IRQ_N  RTC_IRQ_N_PB29

KEY

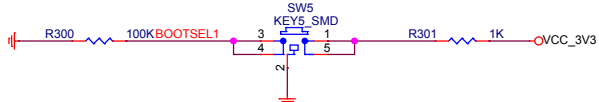


BOOT CONFIGURATION

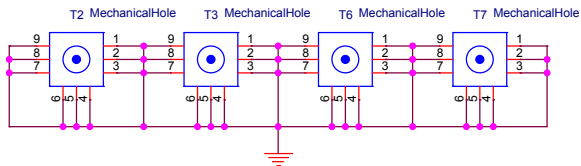
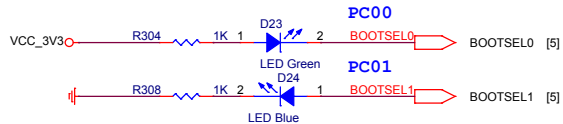
MSC BOOT



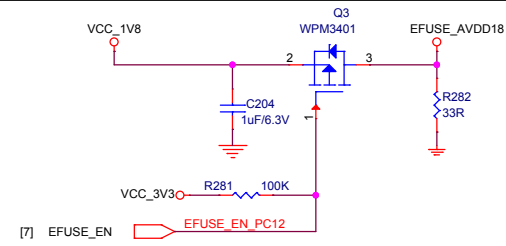
USB BOOT



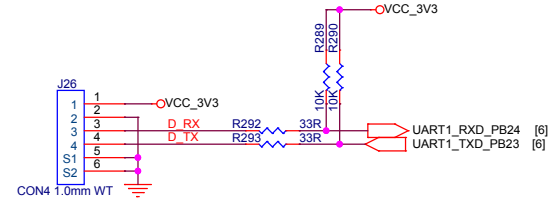
BOOT_SEL1	BOOT_SEL0	BOOT FROM
0	0	NMC/SD boot@MSC0 (NMC/SD use GPIO Port B, MSC1 use GPIO Port C)
1	0	UART boot @ CS2 (Ymodem@115200/9600)
1	1	USB boot @USB2.0 device, EXTCLK=24MHz
0	1	SFC boot @ CS4 (SPI boot)



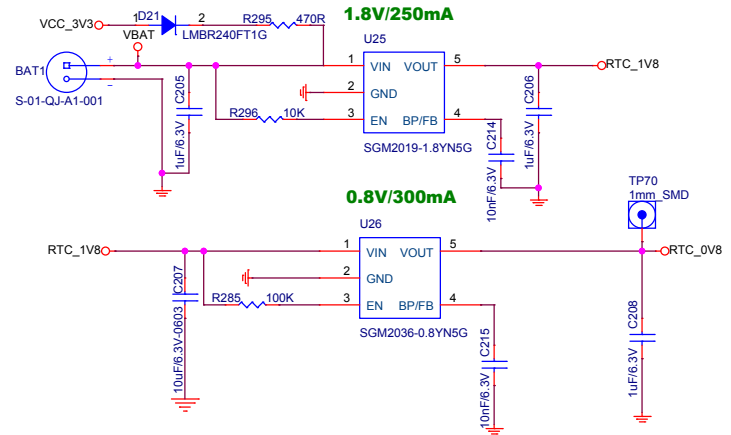
EFUSE



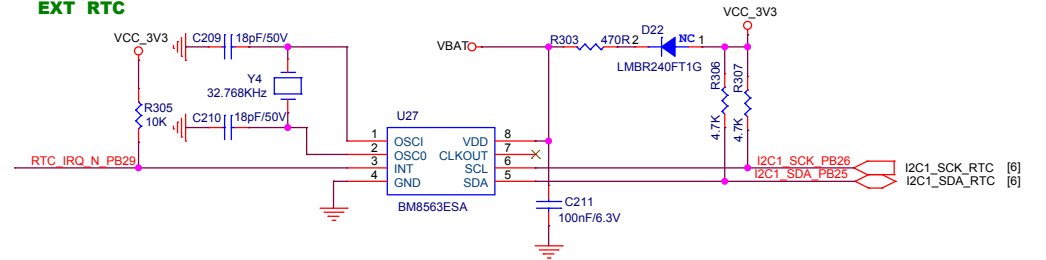
DEBUG_UART



INT RTC



EXT RTC



<Core Design>

INGENIC SEMICONDUCTOR CO., LTD

Title	RD_T41_MARMOT	Rev	V1.2
Size	Page Name		
A3	PAGE15_UART_RTC_BOOT_EFUSE_KEY		
Date:	Wednesday, October 26, 2022	Sheet	15 of 16

Date	Revision	Change
June0 14 2022	Rev1.0	1. First Revision
Sep 20 2022	Rev1.1	1.Change PHY_NRST to PB28 2.Change Key Control to PB19 3.Add NOR Flash to SFC1 4.Add Jumper Res: R237 5.Update T41 package 6.Change D21 to SMD 7.Add Filter Cap:C59,C191
Nov 01 2022	Rev1.2	1.T41.G3&F2 Ball Change to NC. 2.ADC Channel Series 4.7R Resistor. 3.Update T41 package