DDR3 16x2

Please copy DRAM PCB template and follow PCB layout guide. The circuit is only for single-side PCB layout.

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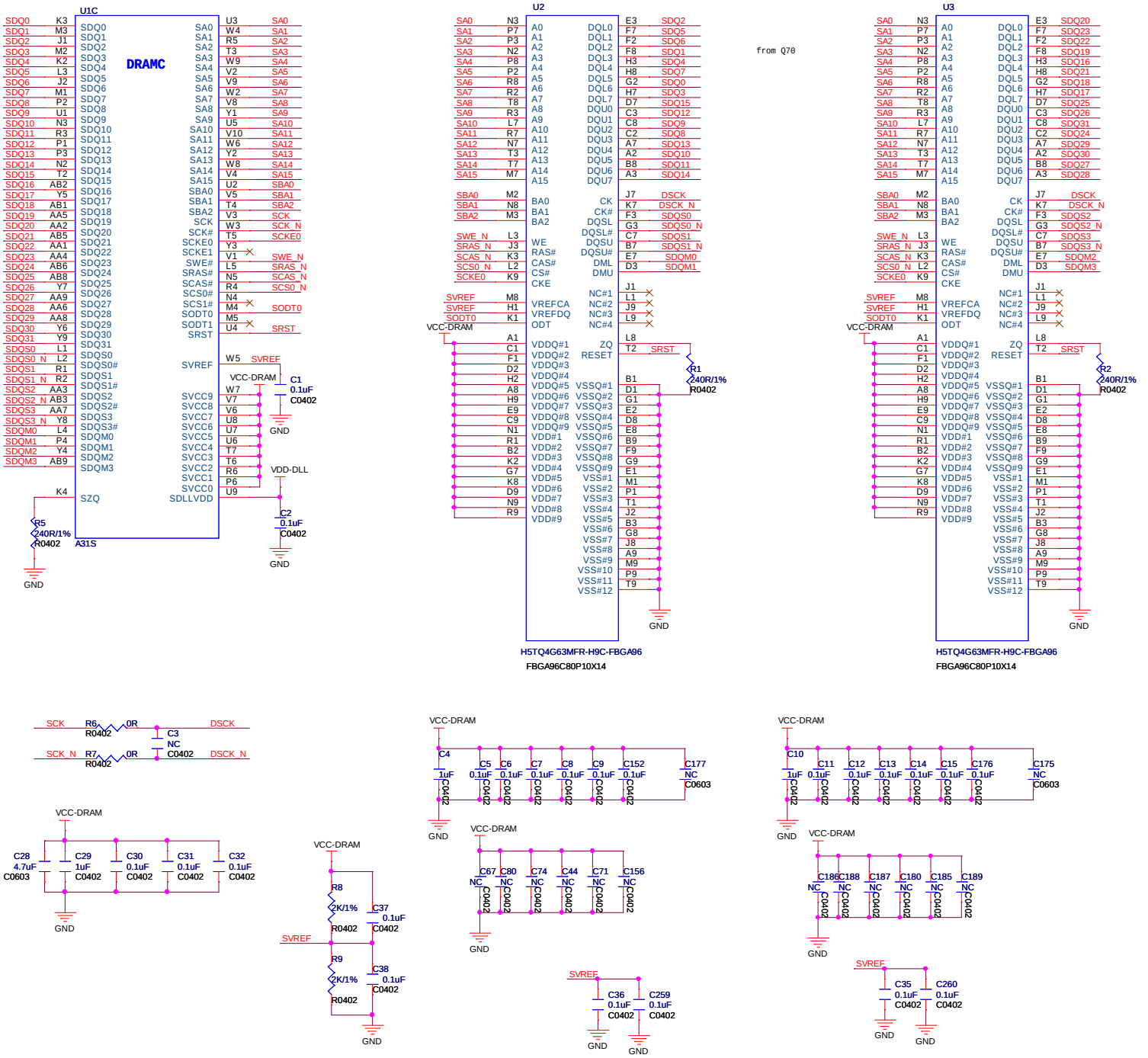
1.5/1.35
DDR3/DDR3L



Design Name	Q971_PAD_2X16BIT_DDR3
Size A3 / Page Name	DDR3 16x2
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POWER

Inductor option:
1. SPH40401R5METG
2. SWPA4018S1R5NT
3. SWPA3015S1R5NT
4. ECL4LG1R5NA
5. PSE25201B-1R5MS-39

Name	Default Voltage	Maximum Current	Comment	Name	Default Voltage	Maximum Current	Comment
DCDC1	3.0V	1A	For GPIO Default ON	DLDO1	0V	400mA	Default OFF
DCDC2	1.1V	2A	For GPU Default ON	DLDO2	0V	200mA	Default OFF
DCDC3	1.1V	2A	For CPU Default ON	DLDO3	0V	200mA	Default OFF
DCDC4	1.1V	600mA	For System Default ON	DLDO4	0V	100mA	Default OFF
DCDC5	1.2V	2A	For DRAM Default ON	ELDO1	0V	400mA	Default OFF
ALDO1	0V	300mA	Default OFF	ELDO2	0V	200mA	Default OFF
ALDO2	1.8V	300mA	For 1.8V IO/LPDDR2 Default ON	ELDO3	0V	200mA	Default OFF
ALDO3	3V	200mA	For SOC Analog Default ON	DC5LDO	1.1V	200mA	For CPUS, From DC/DC5 Default ON
GPIO0	0V	100mA	Default OFF	DC1SW	3.0V	0.1ohm	For LCD, From DC/DC1 Default OFF
GPIO1	0V	100mA	Default OFF	RTC-VCC	3V	30mA	For RTC Always On

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CPU

U1A
3.0V
1.8/2.8V
CPUS GPIO
SYS Ctrl
CLK SRC
RTC PWR
A31S

U1L
Analog Interface
HDMI
USB
ADC
Audio Codec
A31S

U1D
GMAC
LCD1
MISC
3.3V
A31S

U1B
CPUS PWR
GPU PWR
CPU PWR
SYS PWR
COM GND
A31S

VCC-HDMI=3.0V
VCC-USB=3.0V
VCC-PM-CPUS=2.8V
AVCC-AP=3.0V
VCC-PA=3.0V
Value Can Not be Changed
B Close to A
30 mil
CPUS Debug
BYPASS CAP
CLK
Design Name: Q71_PAD_4X8BIT_DDR3
Page Name: CPU
Size: A3
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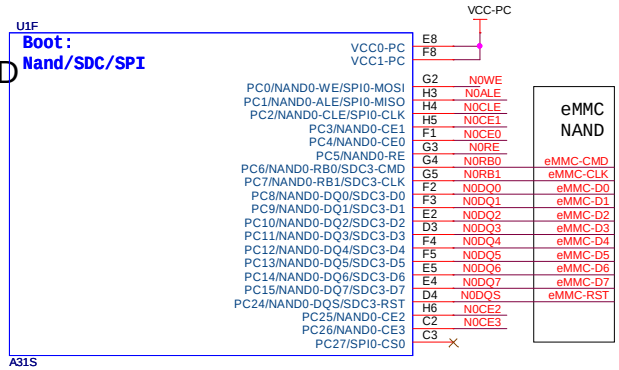
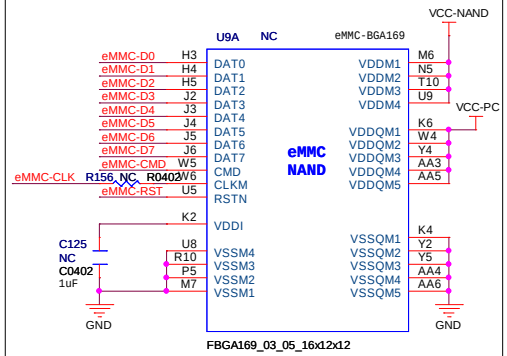
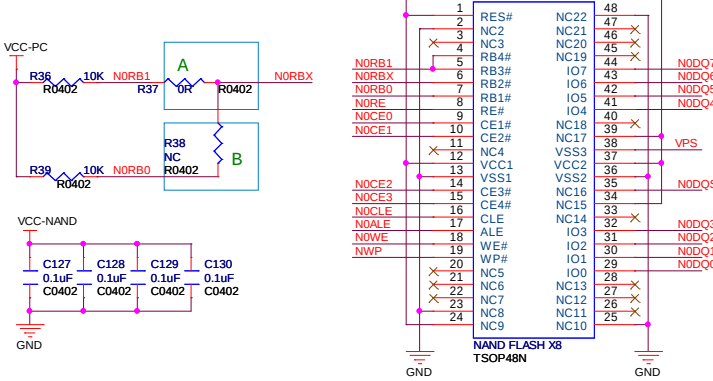
NAND

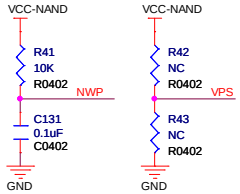
Nand Flash, eMMC

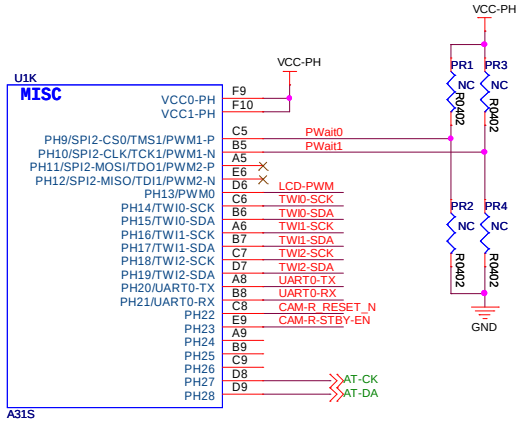
Both eMMC NAND and TSOP NAND layout together

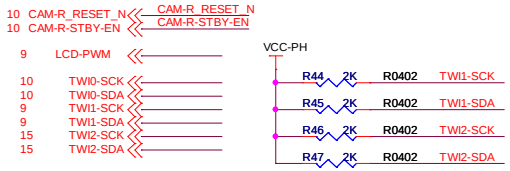


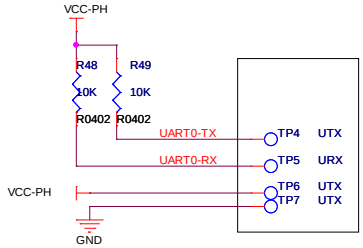




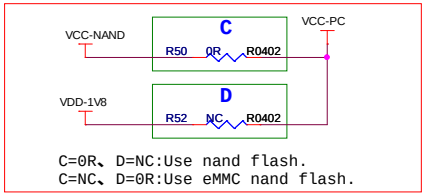


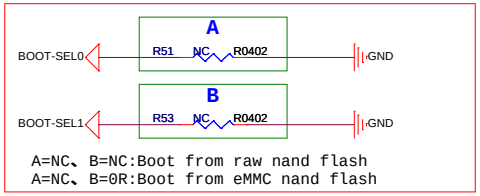






VCC-NAND =3.0V
VDD1-LPDDR2 =1.8V





MARK POINT

ID1 ID2 ID3 ID4 ID5 ID6

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DISP-CTP

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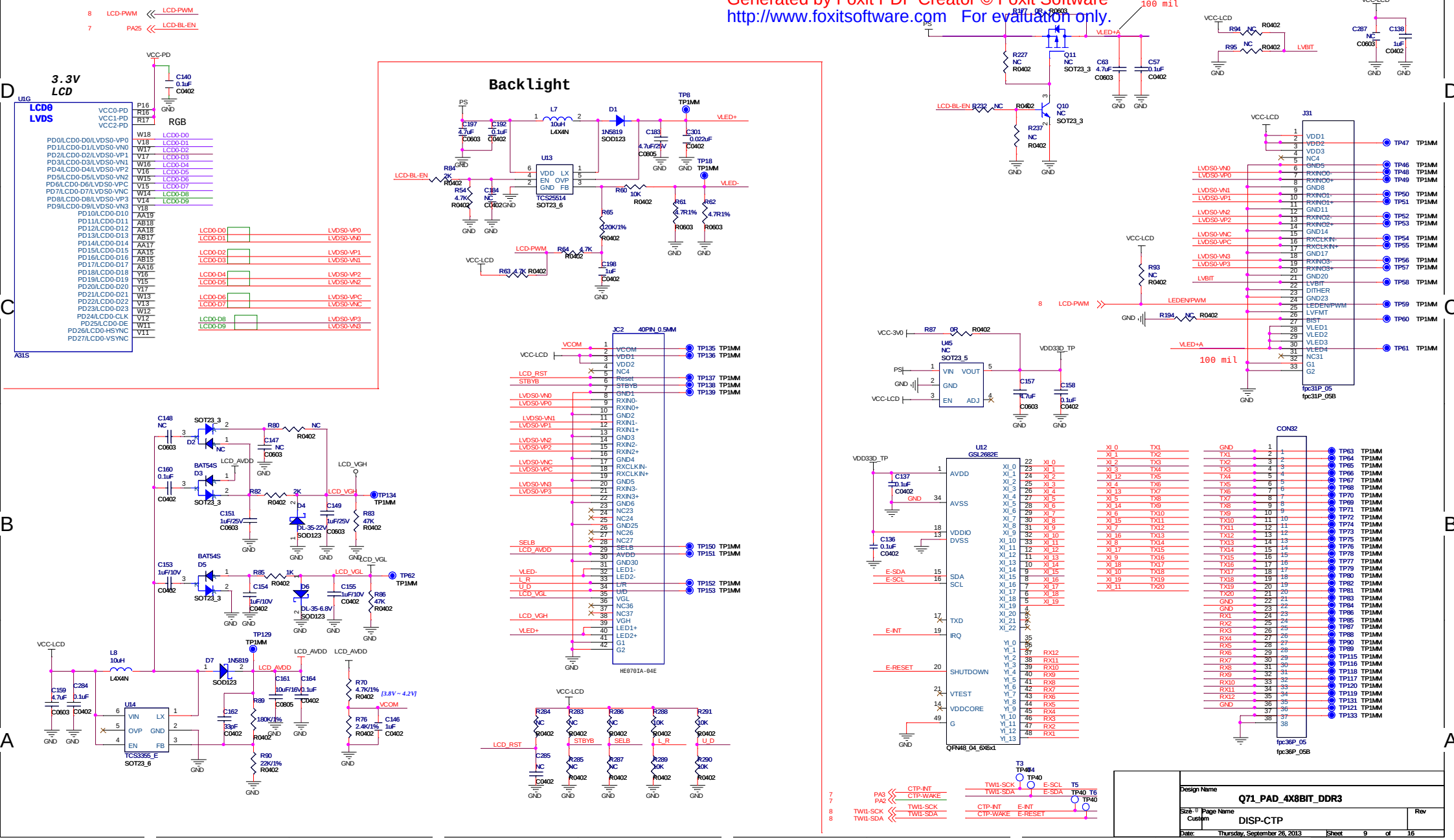
Backlight



Design Name	Q71_PAD_4X8BIT_DDR3
Size: B / Page Name	DISP-CTP
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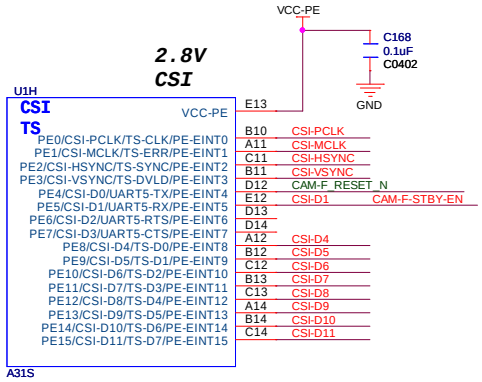
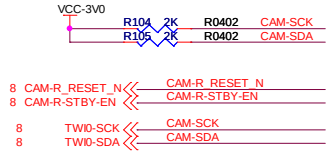
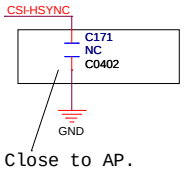
CAMERA

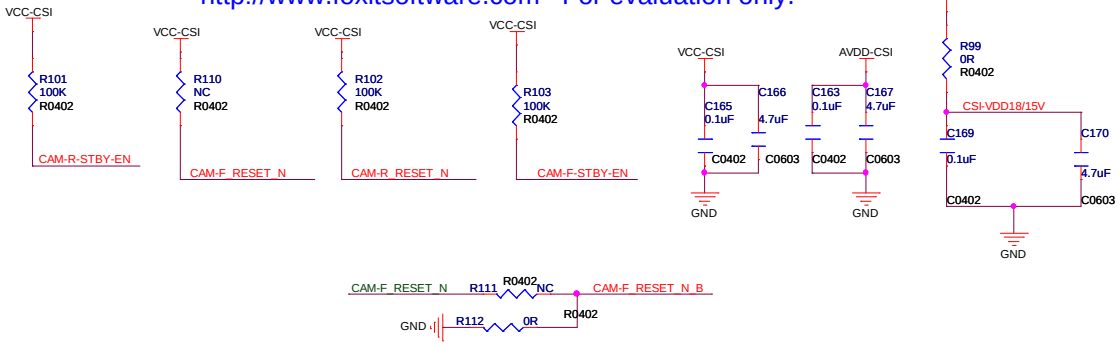
VCC-PE=2.8V





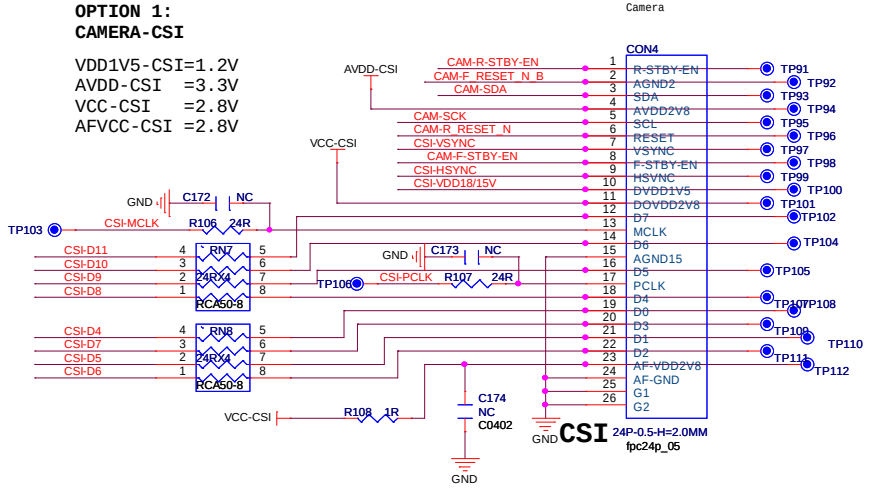


Close to AP.



OPTION 1:
CAMERA-CSI

VDD1V5-CSI=1.2V
AVDD-CSI =3.3V
VCC-CSI =2.8V
AFVCC-CSI =2.8V



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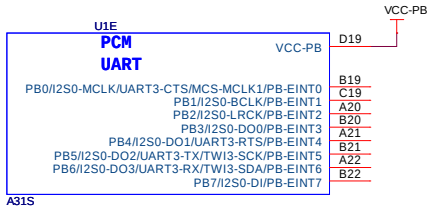
MODEM



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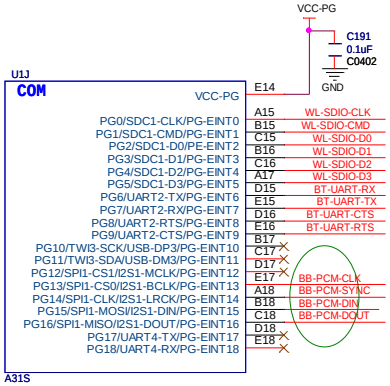
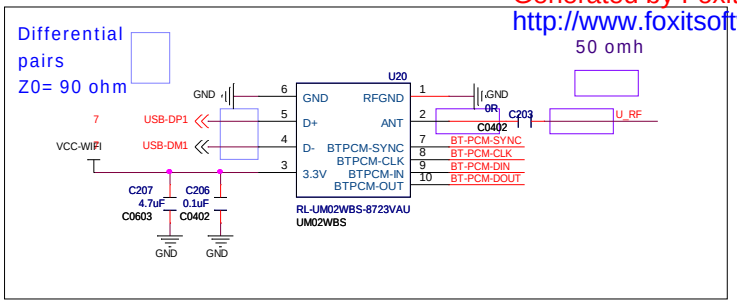
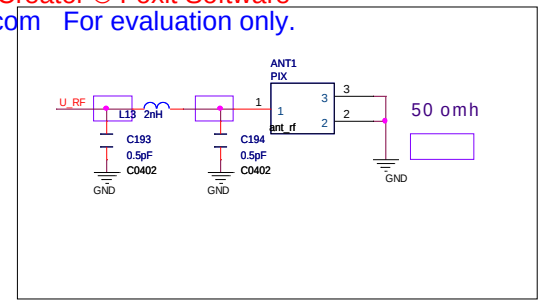
WIFI-BT-GPS-FM







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Size: Custom	Page Name: WIFI-BT-GPS-FM	1.0	Rev
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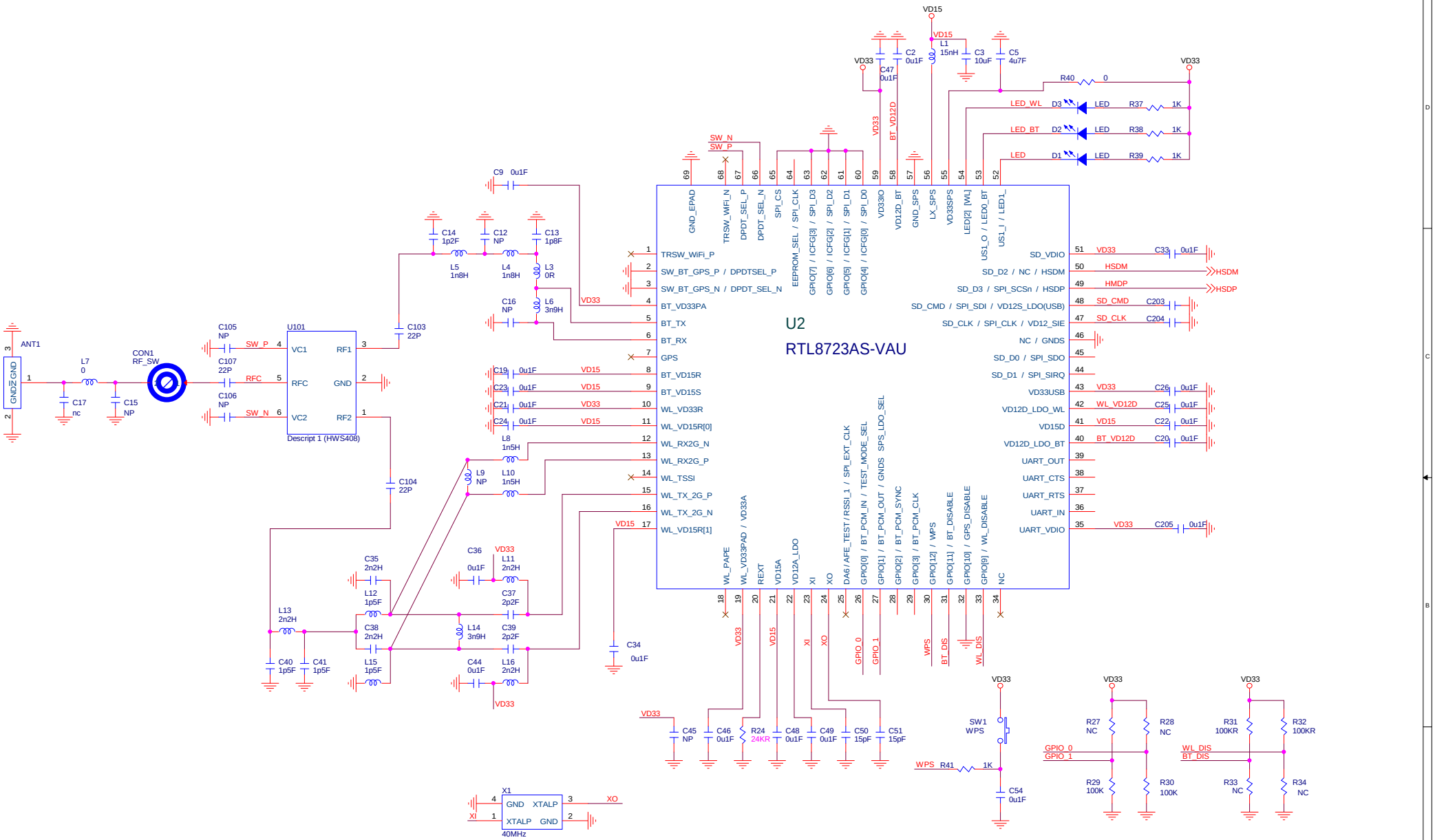

SM23A00-1V4	
Realtek Confidential	
Title	
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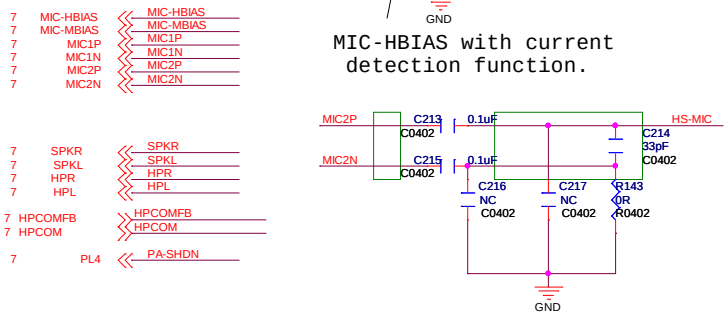
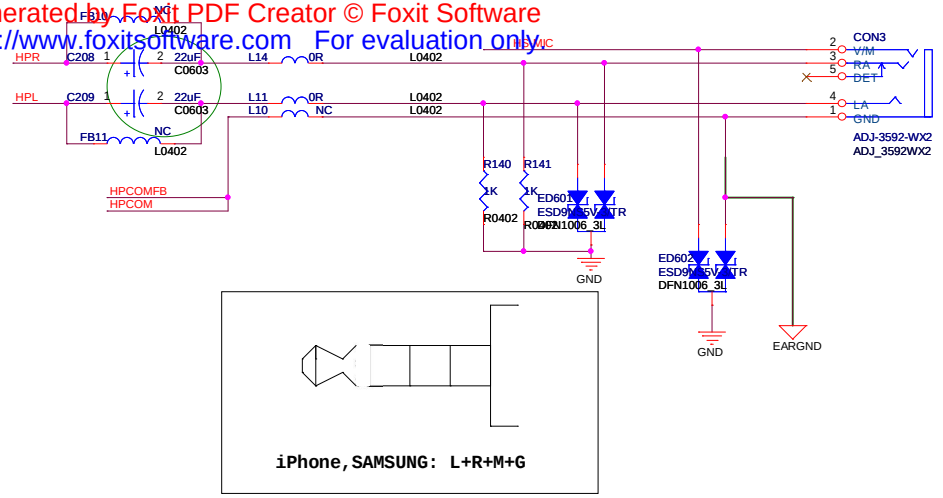
AUDIO IN/OUT

Head Phone

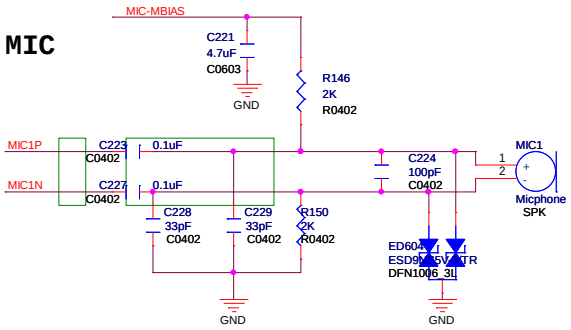
Differential pairs



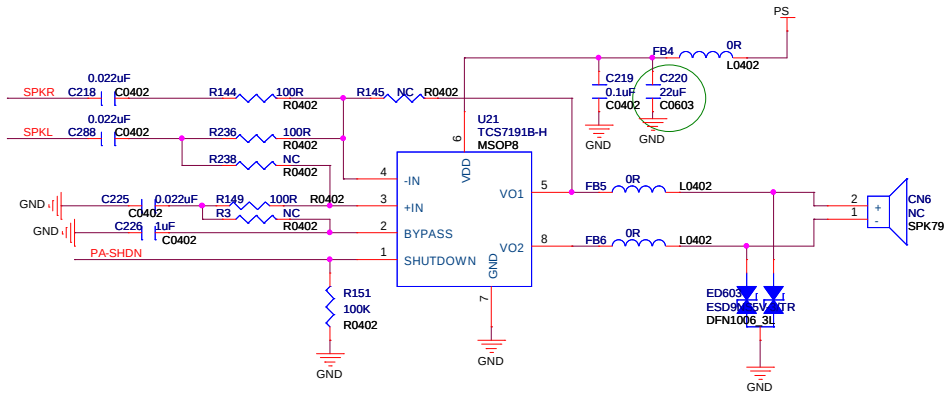


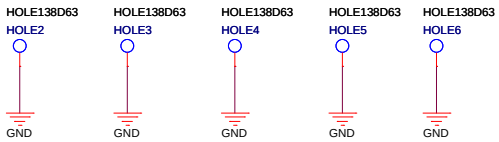
MIC

Differential pairs



Speaker





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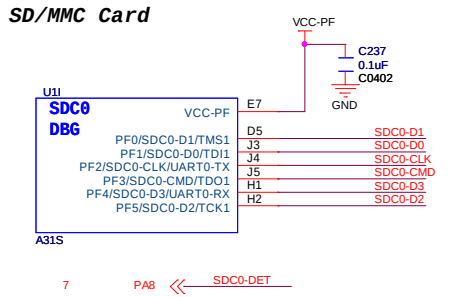
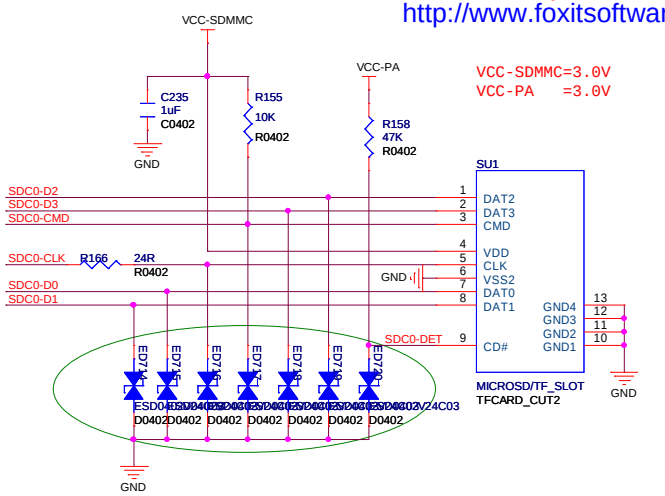
CARD-USB-HDMI

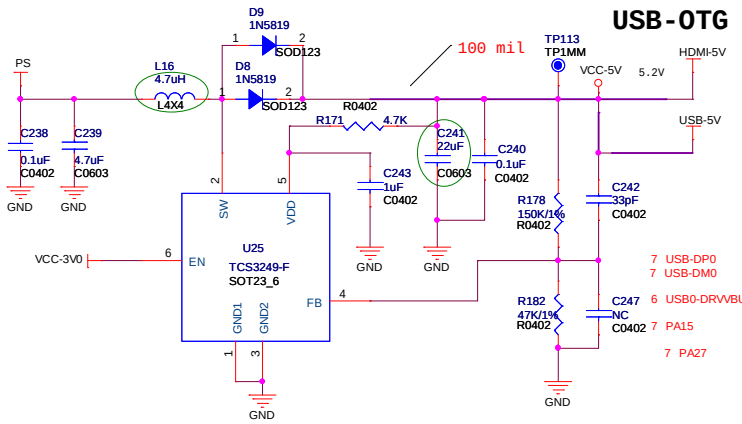
CARD

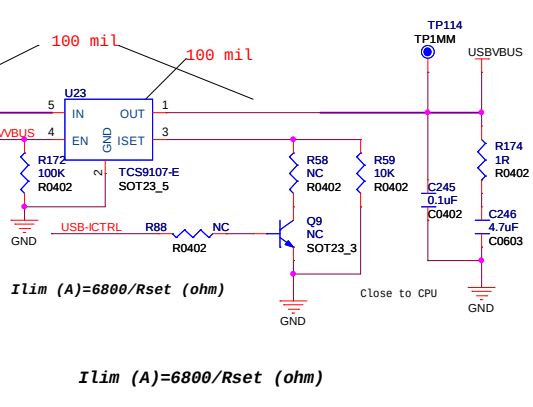


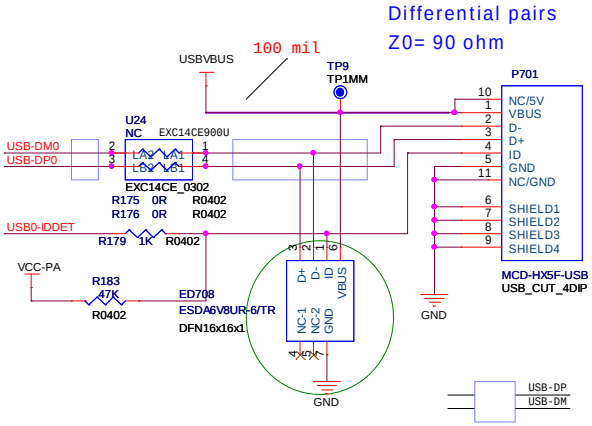
CARD



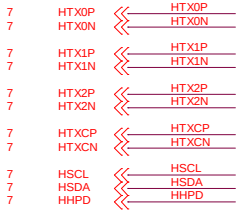
USB-OTG

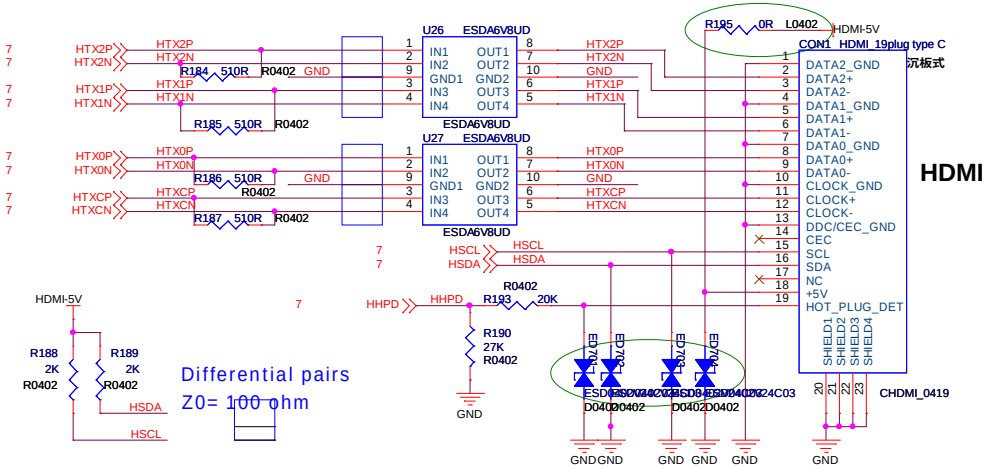






HDMI





HDMI

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Size	A3
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SENSORs

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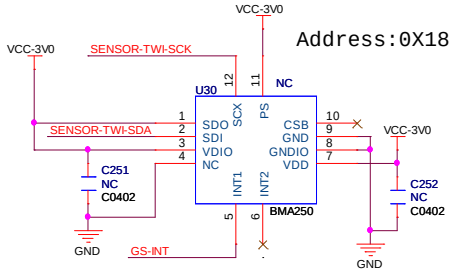
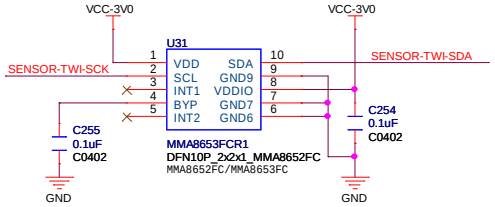
8 TWI2-SCK — SENSOR-TWI-SCK
8 TWI2-SDA — SENSOR-TWI-SDA
7 PA9 — GS-INT

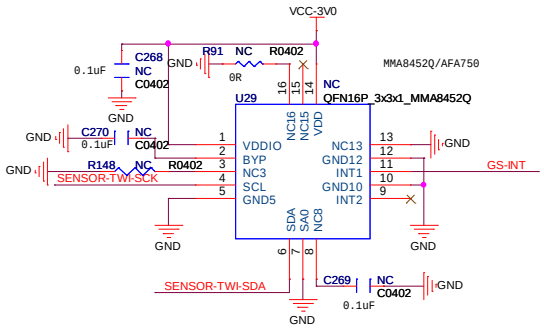
3D G-Sensor



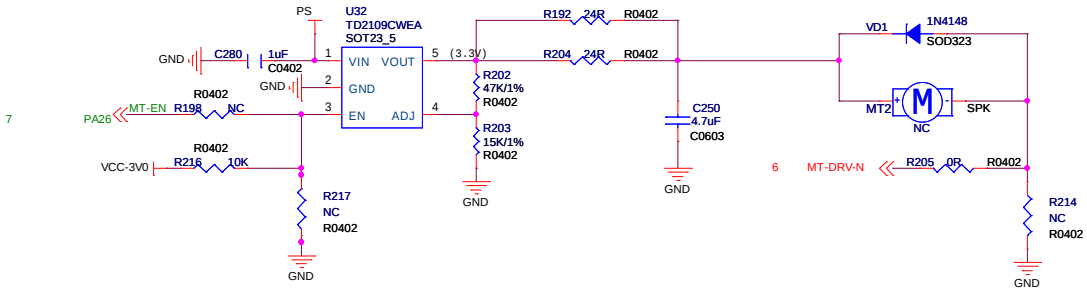
1、The first pin paced on the left lower corner of product on top view.

3D G-Sensor

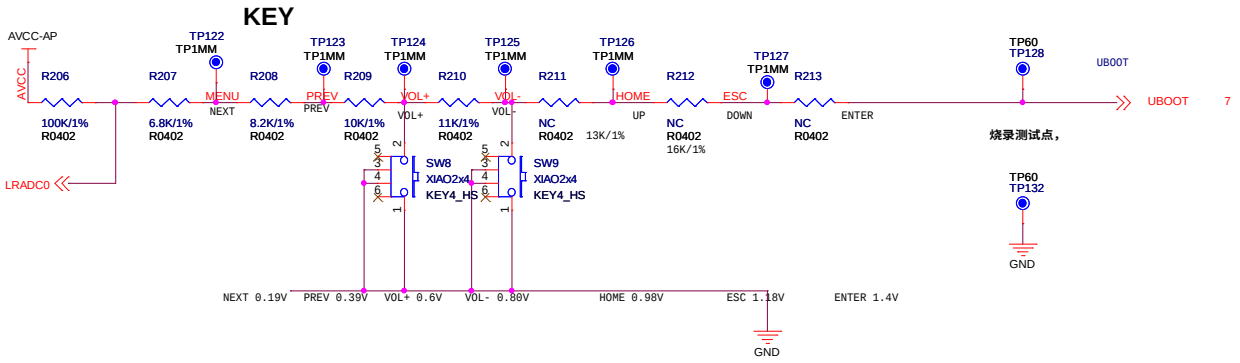




MOTOR



KEY



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Size A3	Page Name SENSORs-KEY	Rev 1.0
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