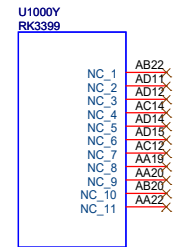
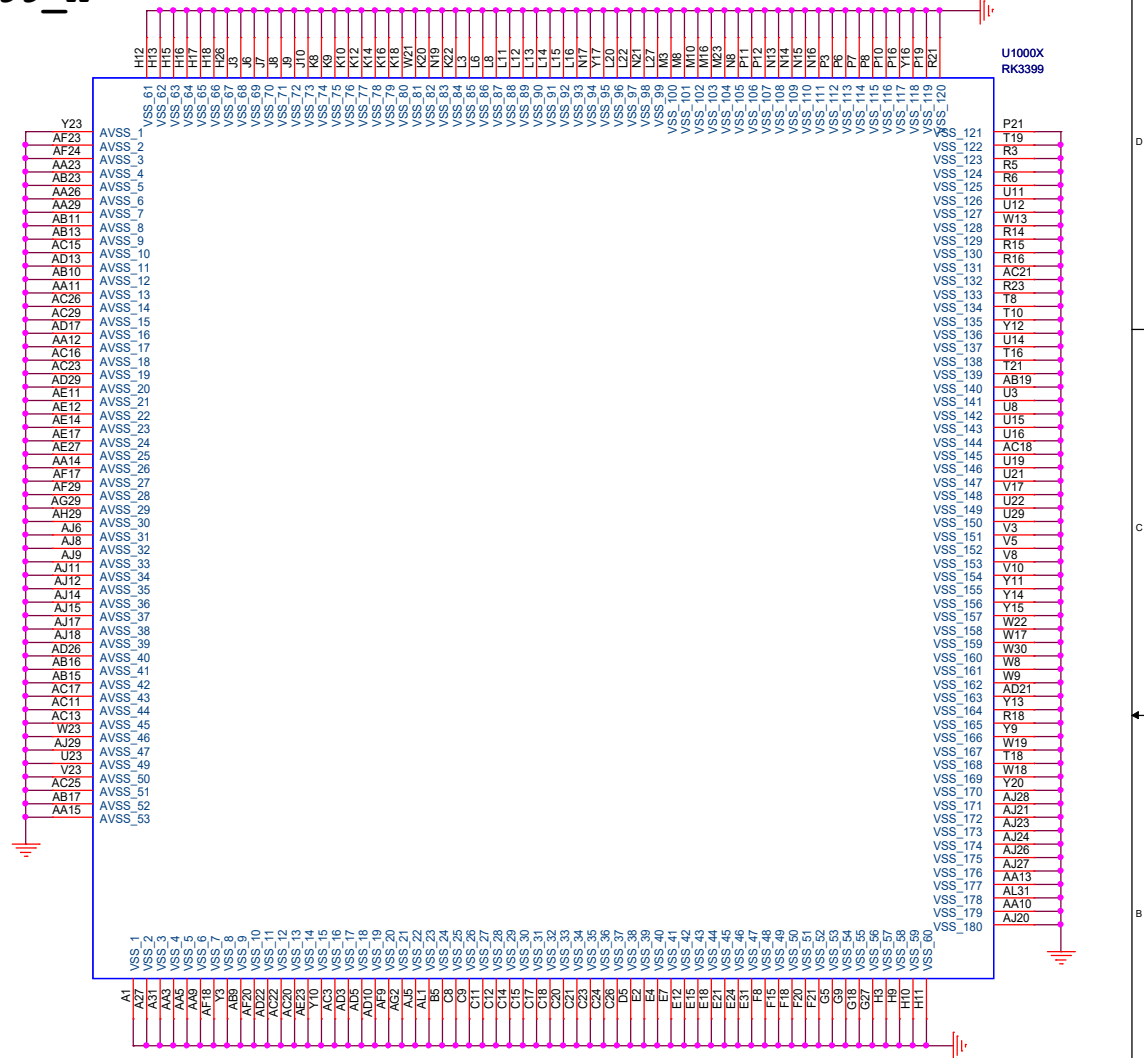
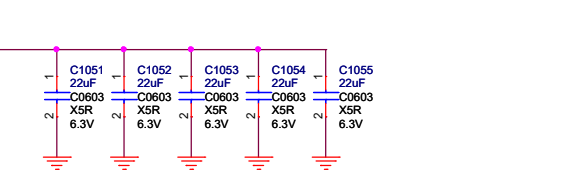
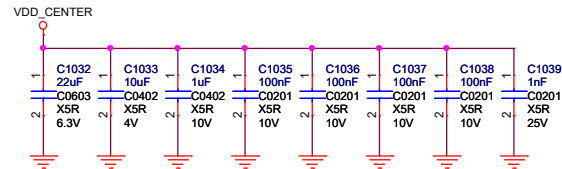
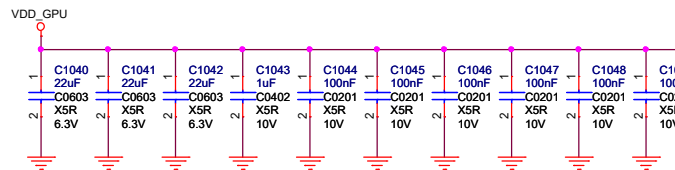
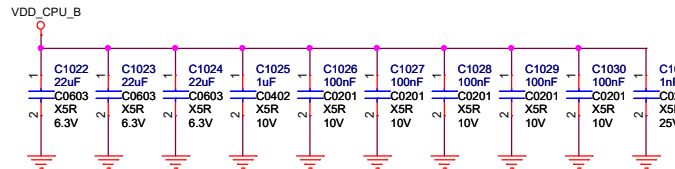
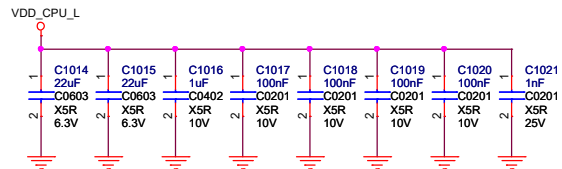
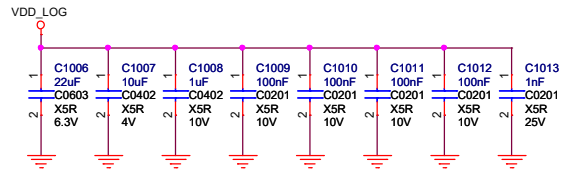
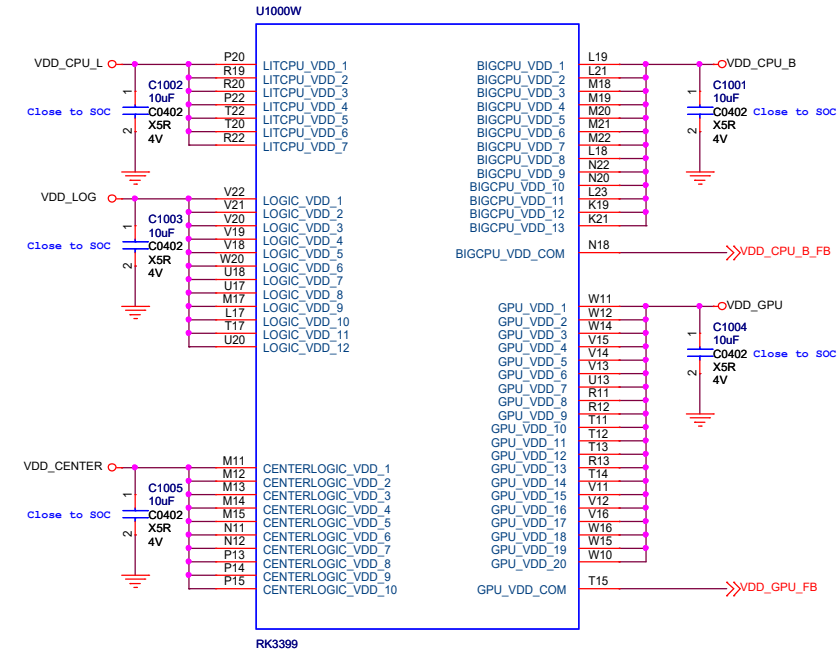


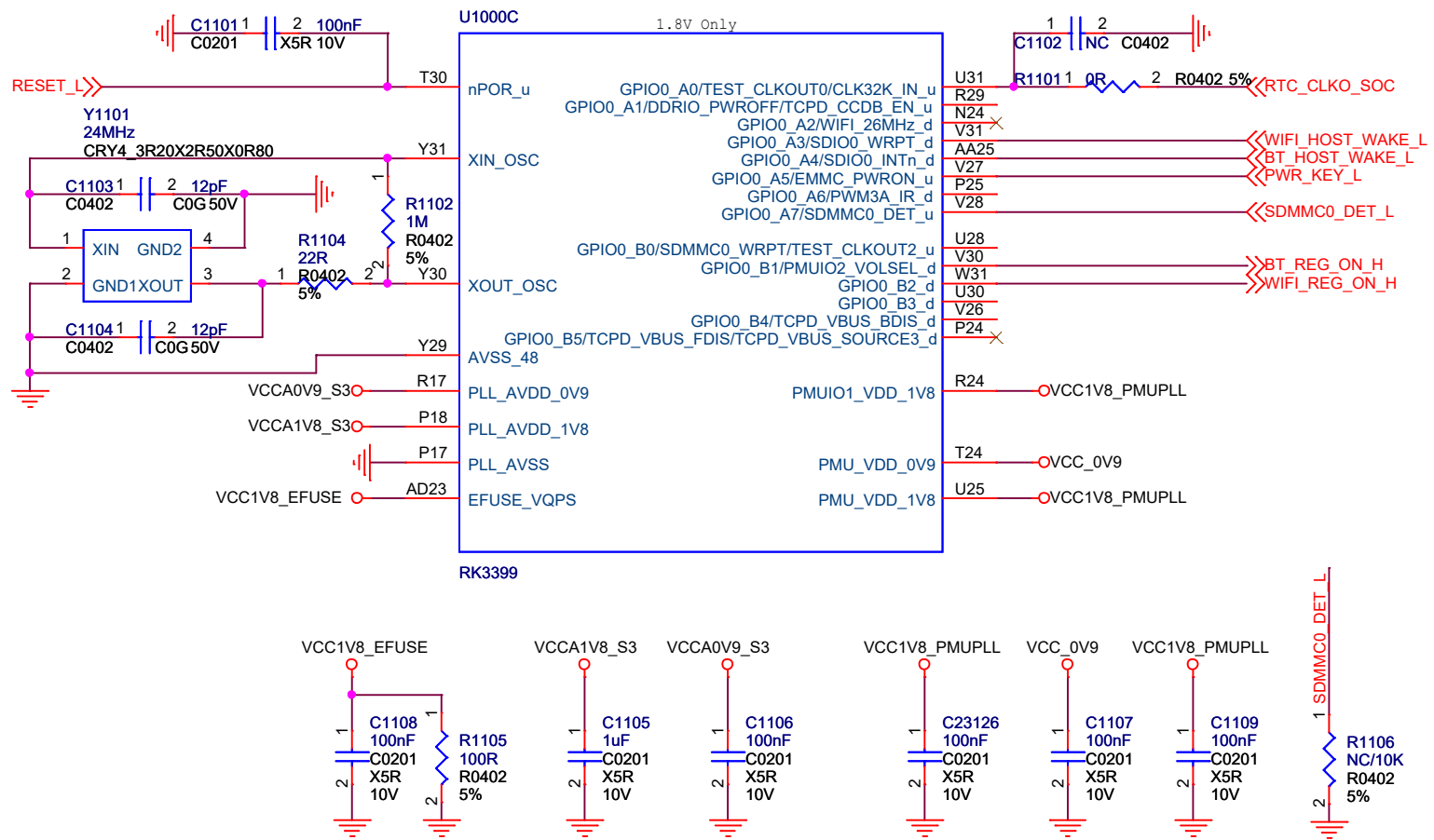


RK3399_W

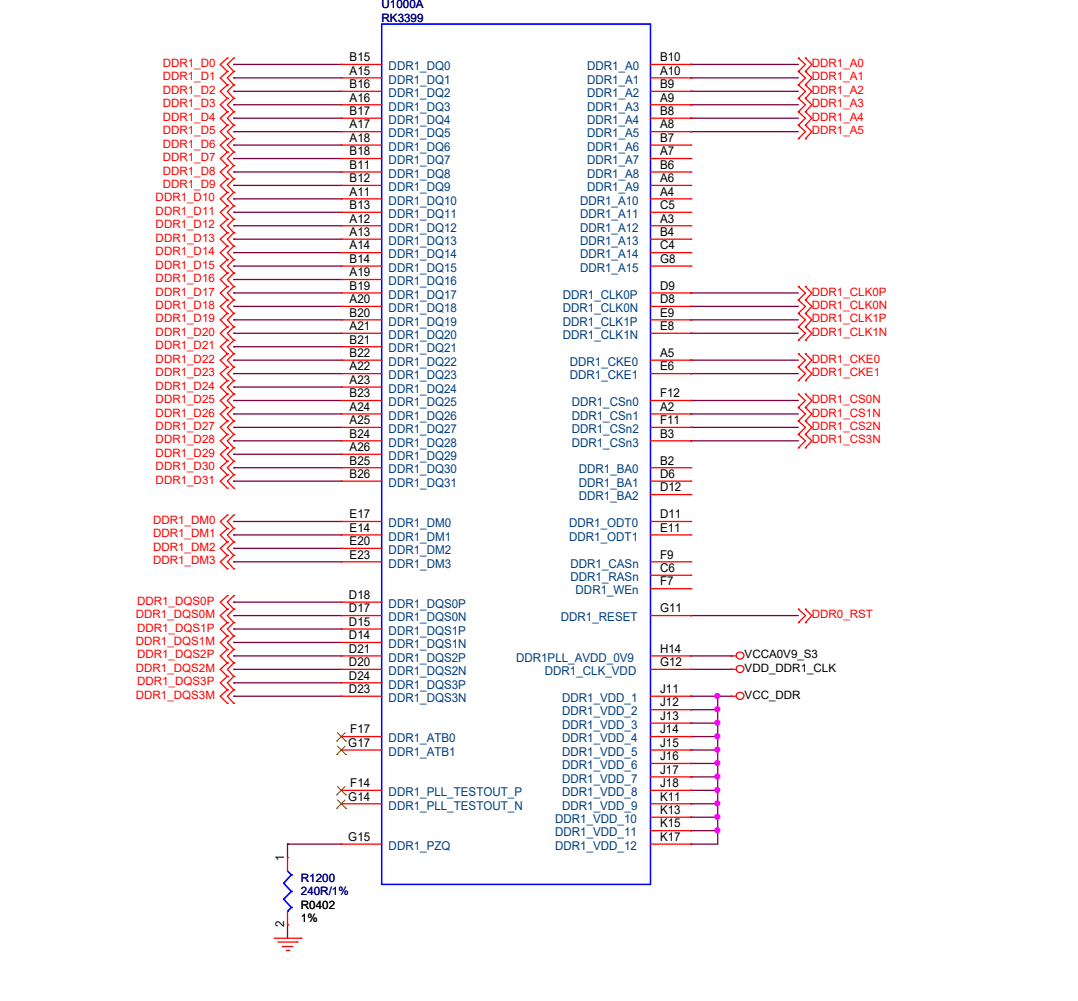
RK3399 X



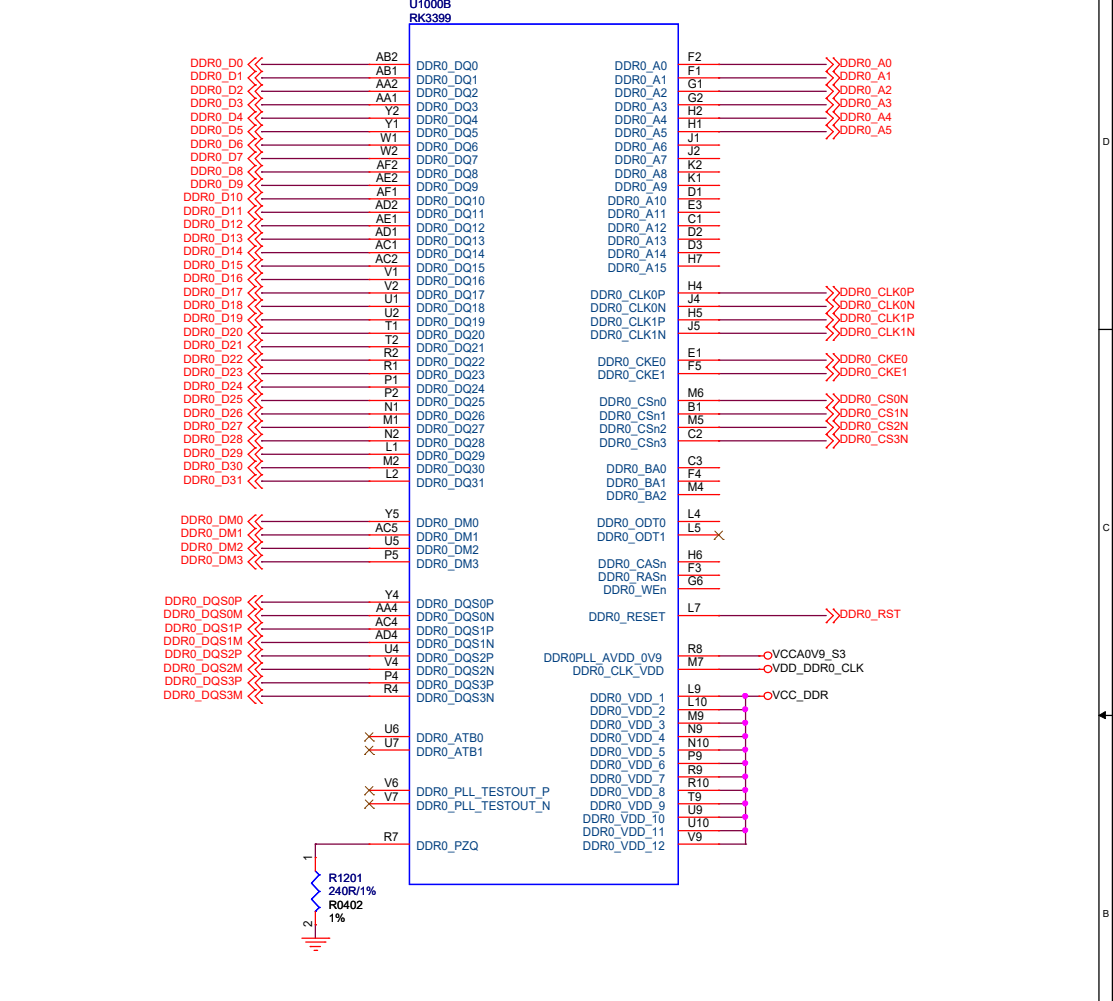
RK3399_C



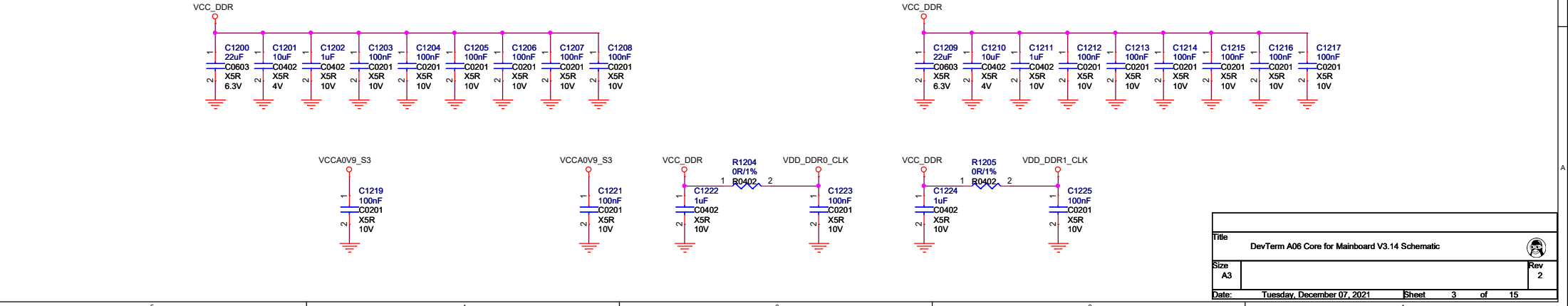
RK3399_A



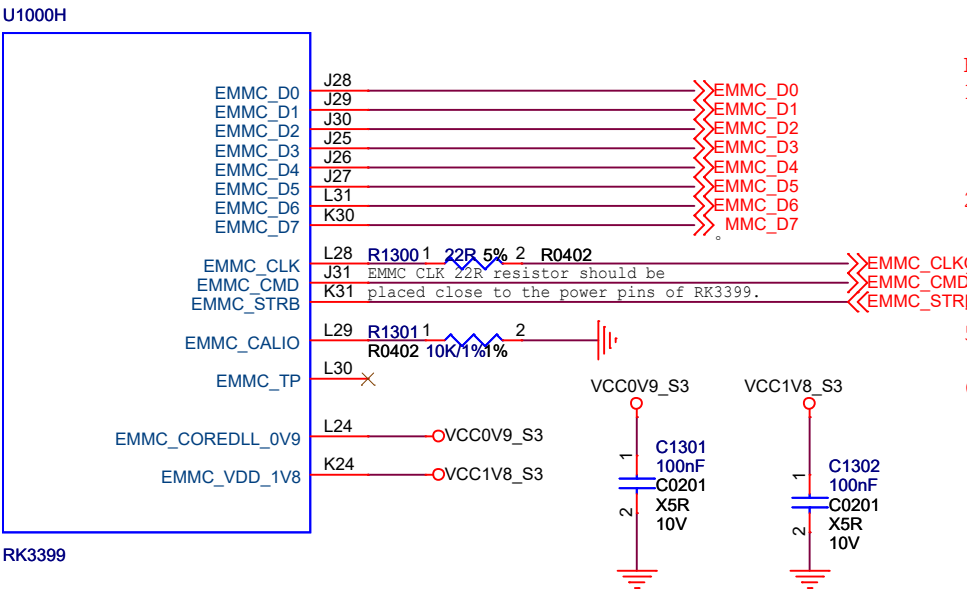
RK3399_B



DDR FILTER



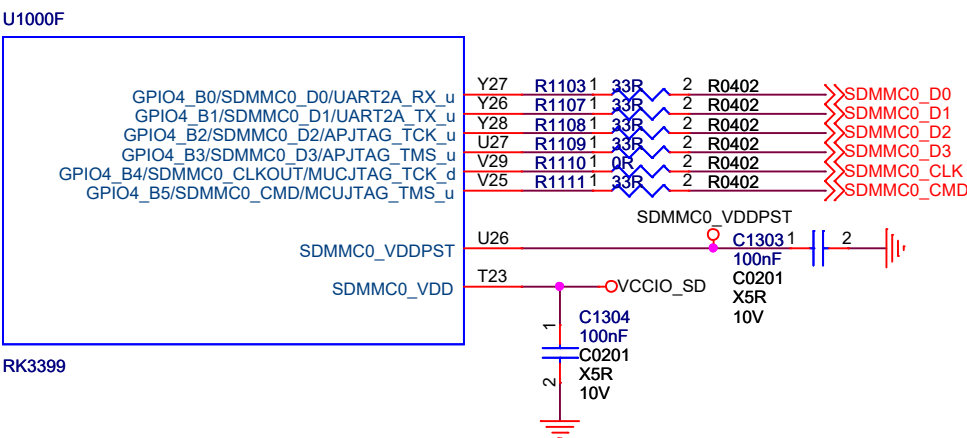
RK3399_H



- EMMC design rules:
- 1.Data[0:3],CMD and Strobe lines routing parallel as a group,and be isolated with other signals by GND line,the skew between group is less than 200mils;
 - 2.Clk should be isolated with other signals by GND line;The skew between data signals is less than 20ps;
 - 3.Max trace length < 3.93inches;
 - 4.Trace impedance 50ohm+/-10%;
 - 5.The distance between other signals follows the 3W rule;
 - 6.R1300 should be place close to RK3399;

Note:All the Power filter capacitors should be placed close to the power pins of RK3399

RK3399_F

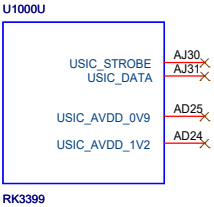


- SDMMC design rules:
- 1.Data[0:3] and CMD lines routing parallel as a group,and be isolated with other signals by GND line,the skew between group is less than 200mils;
 - 2.Clk should be isolated with other signals by GND line;The skew between data signals is less than 20ps;
 - 3.Max trace length < 3.93inches;
 - 4.Trace impedance 50ohm+/-10%;
 - 5.The distance between other signals follows the 3W rule;

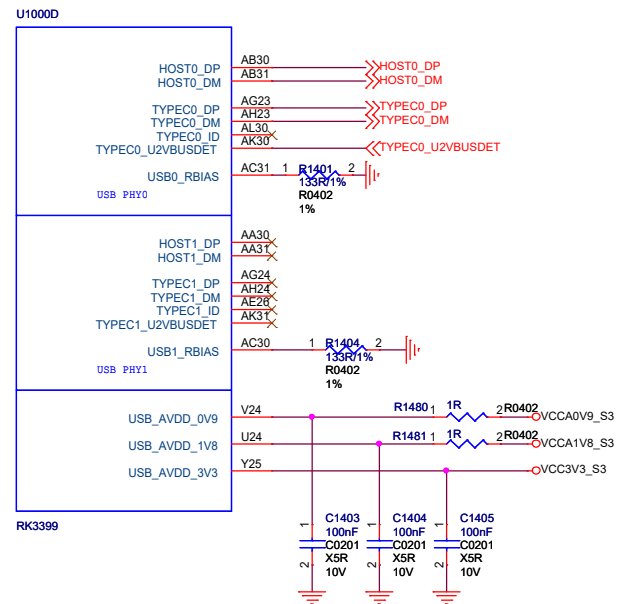
Note:All the Power filter capacitors should be placed close to the power pins of RK3399

Title			
DevTerm A06 Core for Mainboard V3.14 Schematic			
Size			Rev
A4			2
Date:	Tuesday, December 07, 2021	Sheet	4 of 15

RK3399_U



RK3399_D

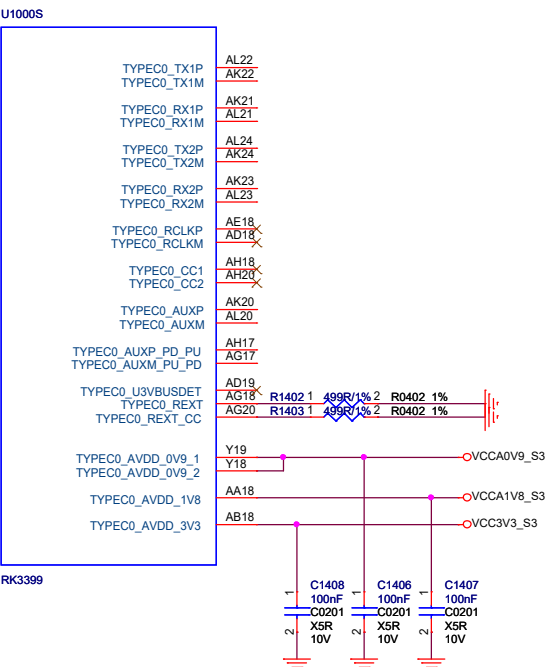


Note:All the Power filter capacitors should be placed close to the power pins of RK3399

USB2.0 design rules:

- 1.Max intra-pair skew < 4ps;
- 2.Max trace length < 6inchs;
- 3.Max allowed via < 6;
- 4.Trace impedance 90ohm+/-10%;
- 5.The distance between other signals follows the 3W rule;

RK3399_S

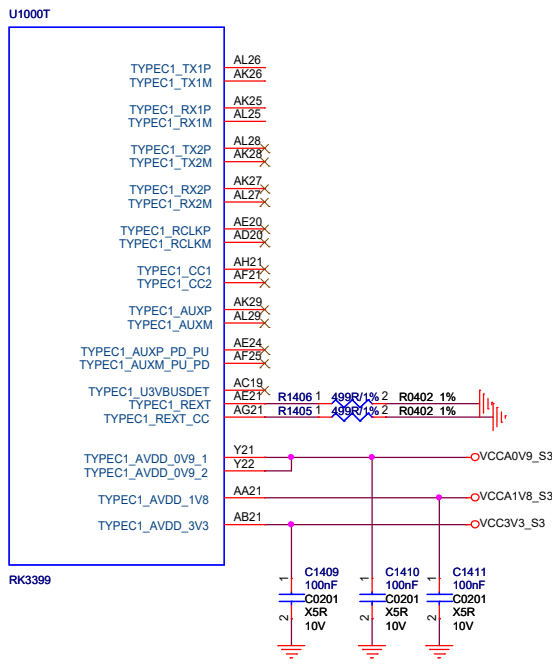


Note:All the Power filter capacitors should be placed close to the power pins of RK3399

USB3.0 design rules:

- 1.Max intra-pair skew < 4ps;
- 2.Max length skew between TX and RX < 1.6ns;
- 3.Max trace length < 6inchs;
- 4.Max allowed via < 4;
- 5.Trace impedance 90ohm+/-10%;
- 6.The distance between other signals follows the 3W rule;

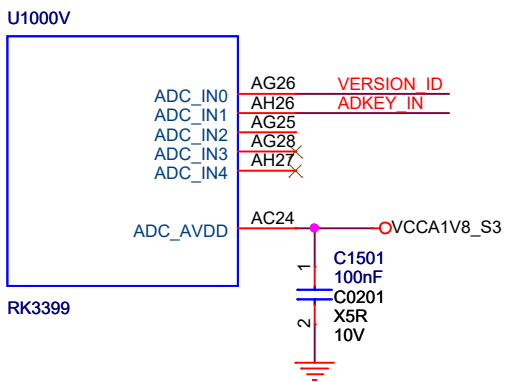
RK3399_T



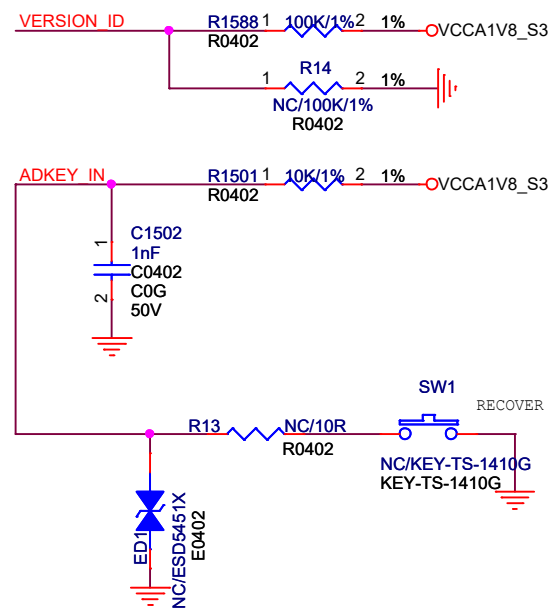
DP design rules:

- 1.Max intra-pair skew < 4ps;
- 2.Max trace length < 6inchs;
- 3.Max allowed via < 4;
- 4.Trace impedance 90ohm+/-10%;
- 5.The distance between other signals follows the 3W rule;

RK3399_V

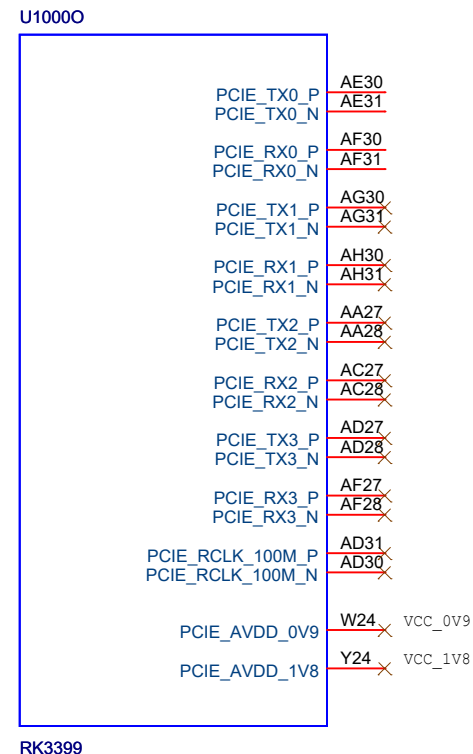


Note:All the Power filter capacitors should be placed close to the power pins of RK3399



KEY BAORD

RK3399_O



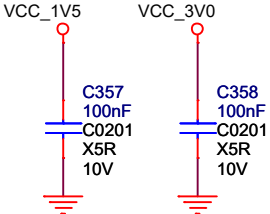
RK3399_L

U1000L



RK3399

The power domain can be designed to be 1.8V or 3.0v.
It should be noted that software configuration needs
to be consistent with hardware design.

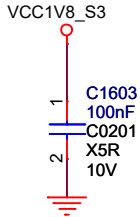


RK3399_R

U1000R

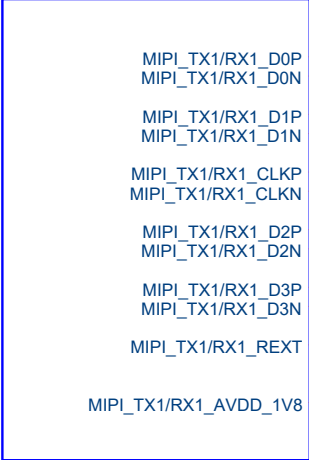


RK3399



RK3399_P

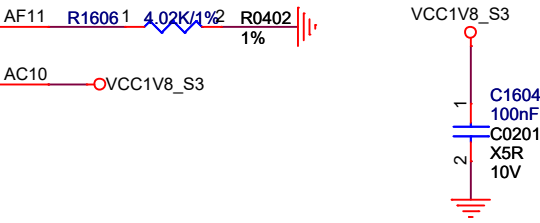
U1000P



RK3399

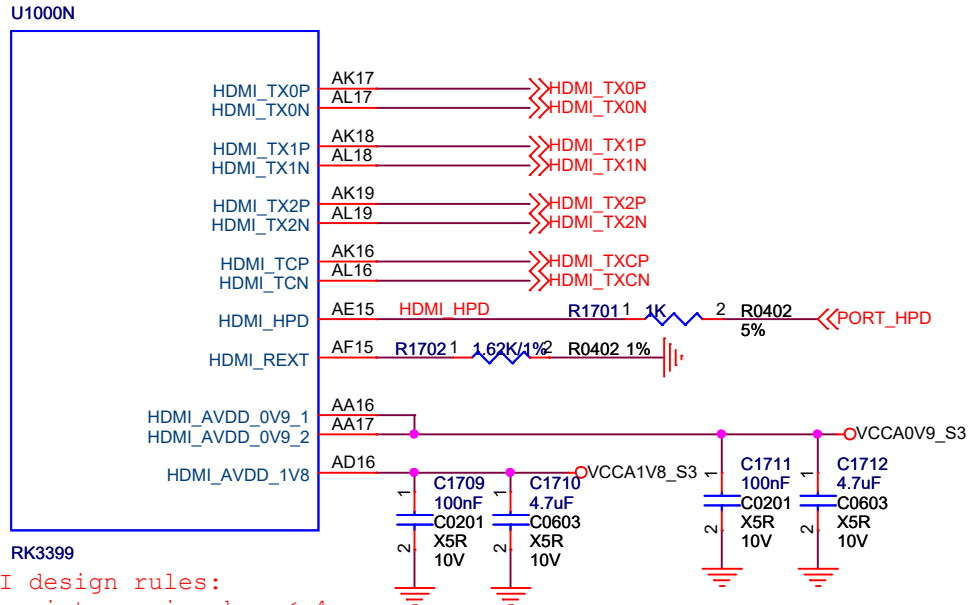
MIPI design rules:

- 1.Max intra-pair skew < 4ps;
- 2.Max length skew between clk and data < 7ps;
- 3.Max trace length < 7.2inches;
- 4.Max allowed via < 4;
- 5.Trace impedance 100ohm+/-10%;
- 6.The distance between other signals follows the 3W rule;



Title		
DevTerm A06 Core for Mainboard V3.14 Schematic		
Size	Rev	
A4	2	
Date:	Tuesday, December 07, 2021	Sheet 7 of 15

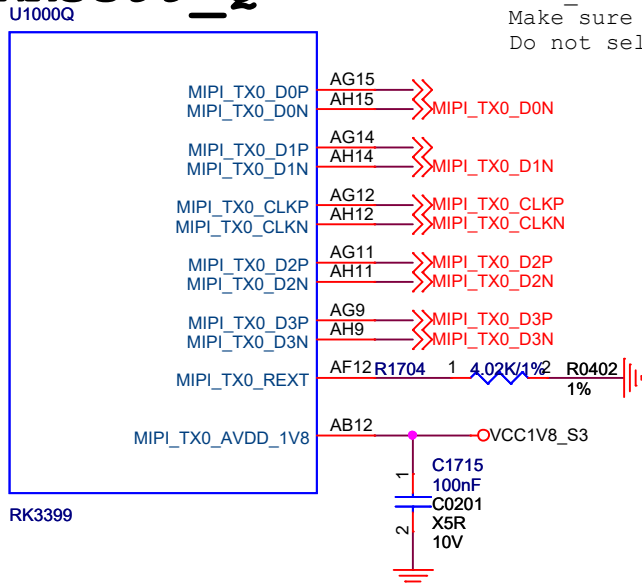
RK3399_N



HDMI design rules:

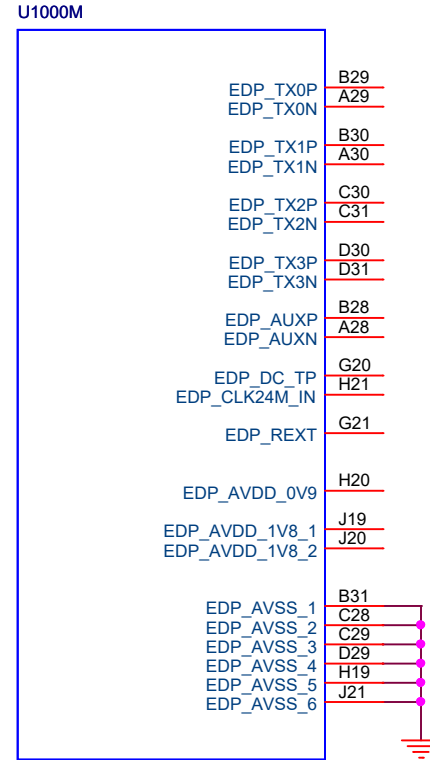
- 1.Max intra-pair skew < 4ps;
- 2.Max length skew between clk and data < 80ps;
- 3.Max trace length < 9.8inches;
- 4.Max allowed via < 4;
- 5.Trace impedance 100ohm+/-10%;
- 6.The distance between other signals follows the 3W rule;

RK3399_Q



The product definition is a single MIPI_DSI display screen.
Make sure you choose the MIPI_TX0 channel.
Do not select the MIPI_TX1/RX1 channel.

RK3399_M



RK3399

eDP design rules:

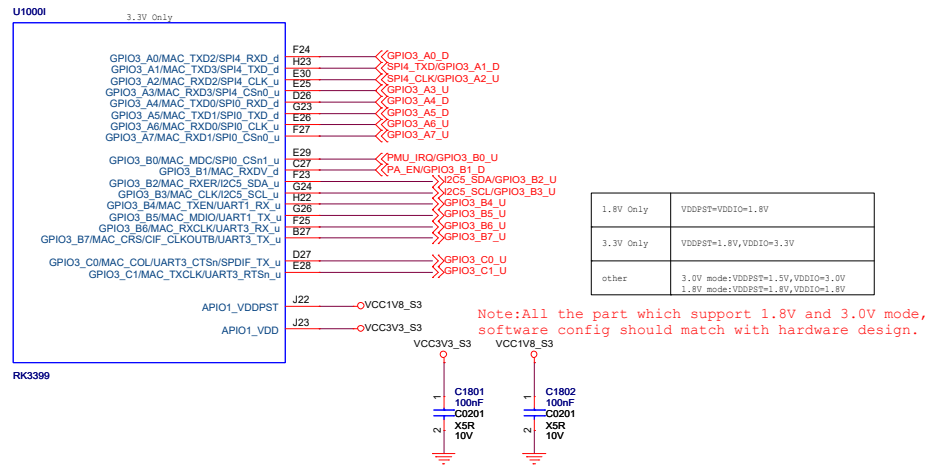
- 1.Max intra-pair skew <4 ps;
- 2.Max trace length < 6inches;
- 3.Max allowed via < 4;
- 4.Trace impedance 90ohm+/-10%;
- 5.The distance between other signals follows the 3W rule;

MIPI design rule:

- 1.Max intra-pair skew < 4 ps;
- 2.Max length skew between clk and data < 7ps;
- 3.Max trace length < 7.2 inches;
- 4.Max allowed via < 4;
- 5.Trace impedance 100ohm+/-10%;
- 6..The distance between other signals follows the 3W rule;

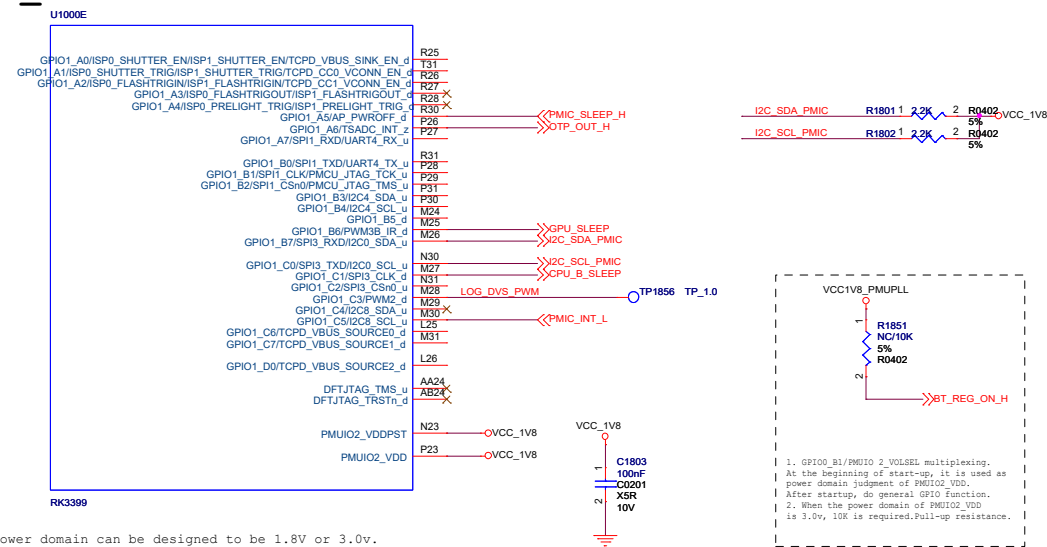
Title		
DevTerm A06 Core for Mainboard V3.14 Schematic		
Size	A4	Rev 2
Date:	Tuesday, December 07, 2021	Sheet 8 of 15

RK3399_I



Note:All the Power filter capacitors should be placed close to the power pins of RK3399

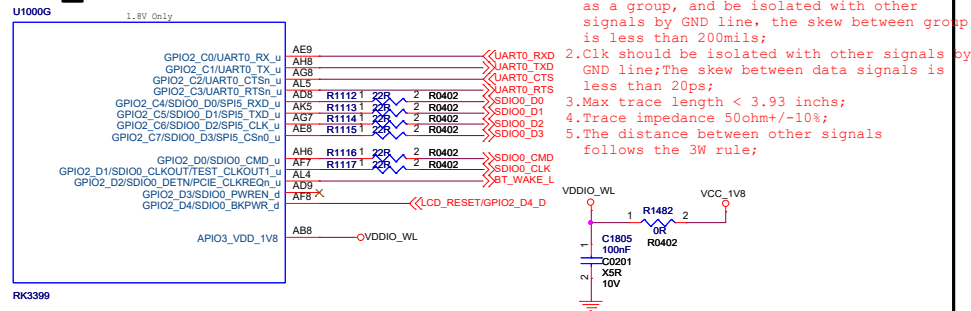
RK3399_E



The power domain can be designed to be 1.8V or 3.0v. It should be noted that software configuration needs to be consistent with hardware design.

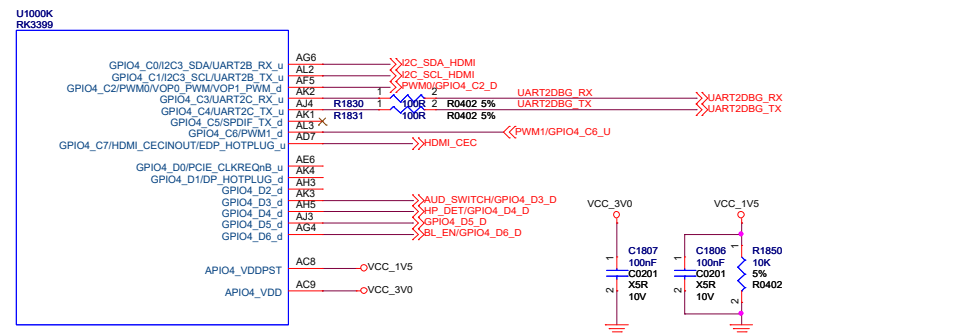
Note:All the Power filter capacitors should be placed close to the power pins of RK3399

RK3399_G



Note:All the Power filter capacitors should be placed close to the power pins of RK3399

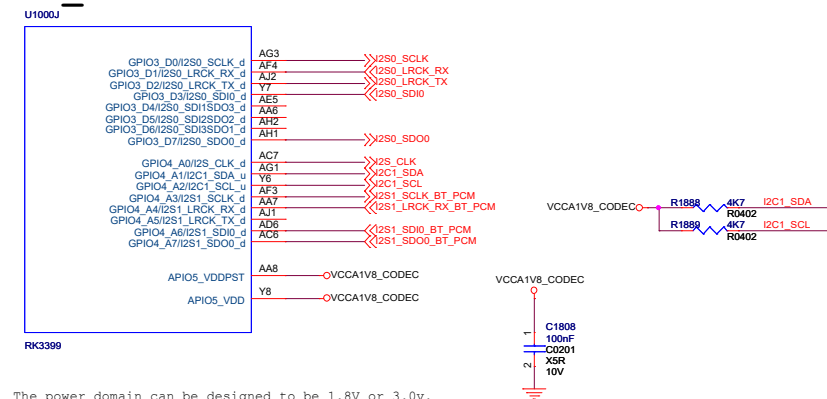
RK3399_K



The power domain can be designed to be 1.8V or 3.0v. It should be noted that software configuration needs to be consistent with hardware design.

Note:All the Power filter capacitors should be placed close to the power pins of RK3399

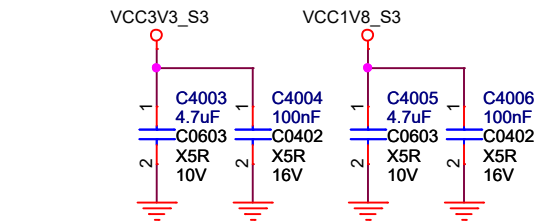
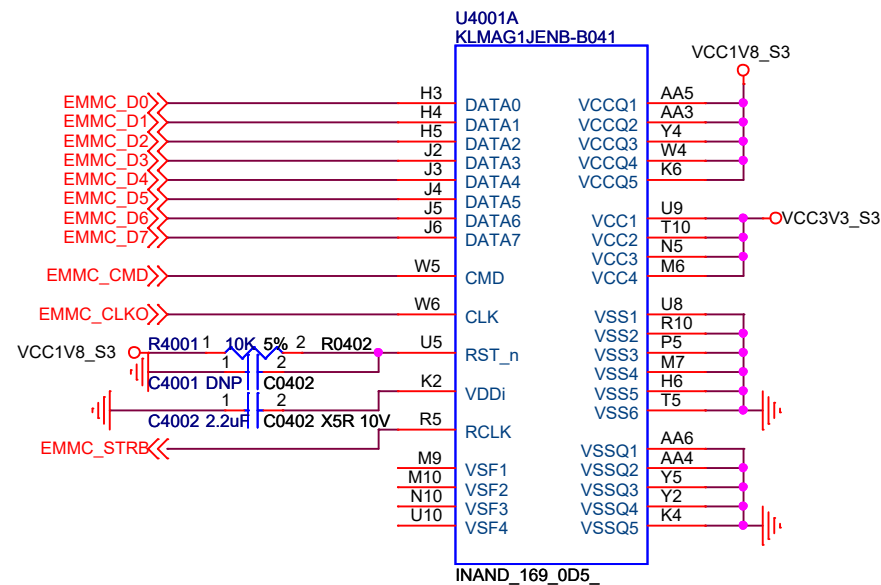
RK3399_J



Note:All the Power filter capacitors should be placed close to the power pins of RK3399

The power domain can be designed to be 1.8V or 3.0v. It should be noted that software configuration needs to be consistent with hardware design.

eMMC FLASH

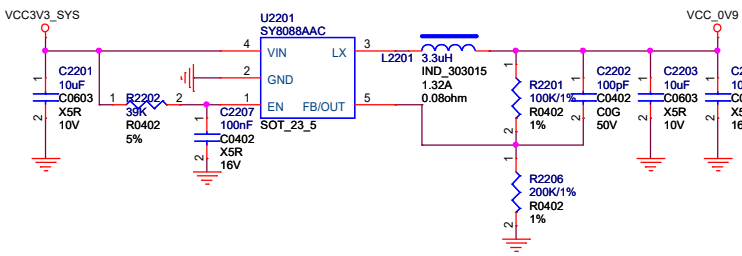


Note:All the Power filter capacitors should be placed close to the power pins of eMMC

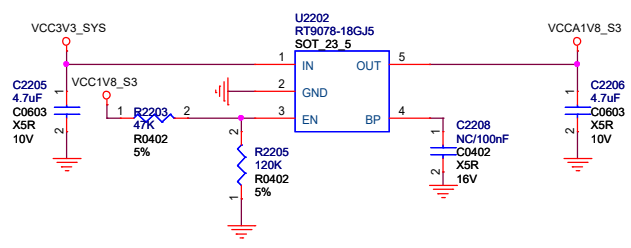
Note:
Reserve TestPoint for firmware update.
If EMMC_CLKO=0V at power-on reset,
then system will enter into Maskrom mode.

EMMC_CLKO TP4005
TP4006

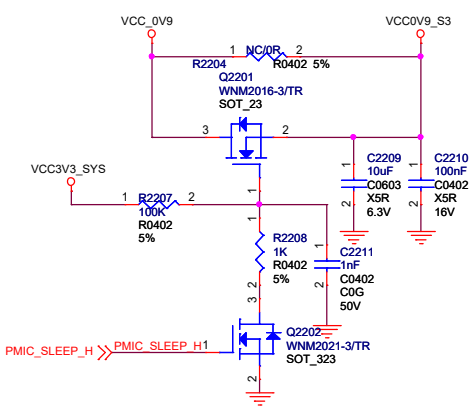
VCC_0V9



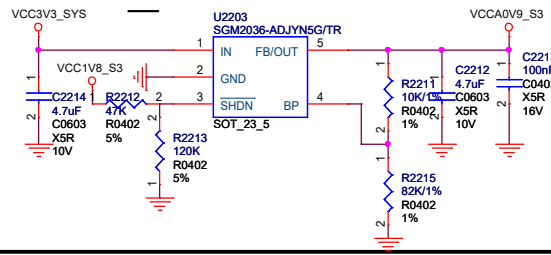
VCCA1V8_S3



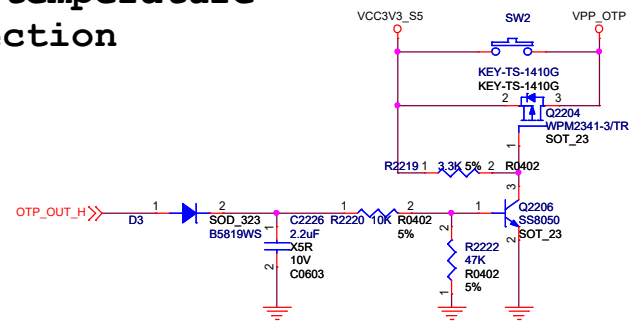
VCC0V9_S3



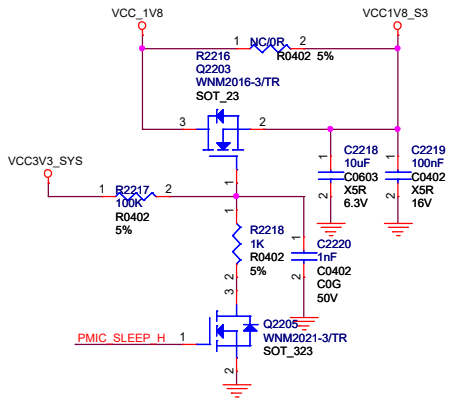
VCCA0V9_S3



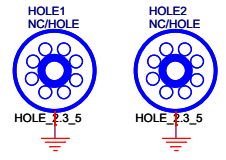
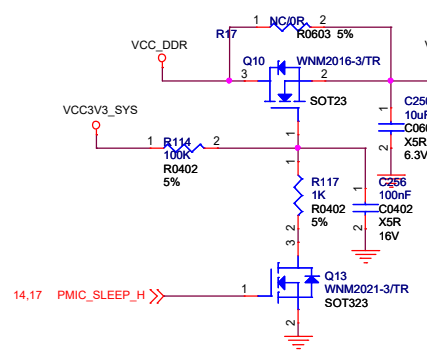
Over-temperature Protection



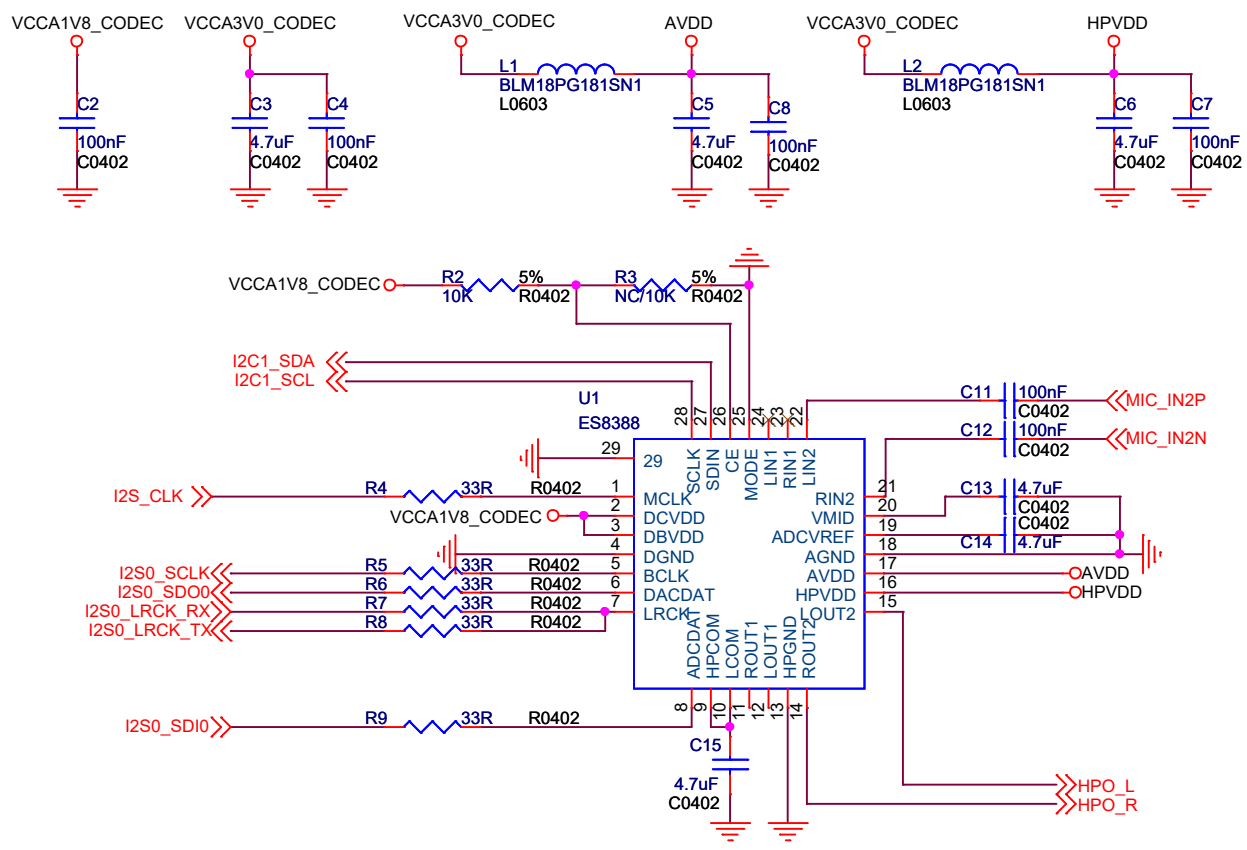
VCC1V8_S3

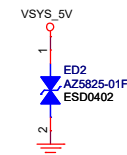
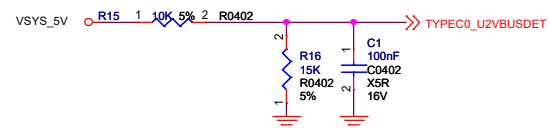
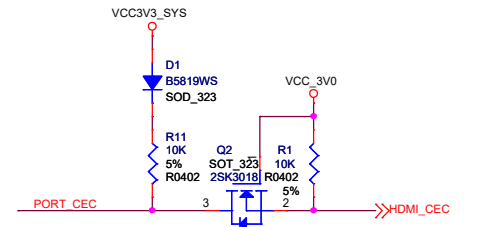
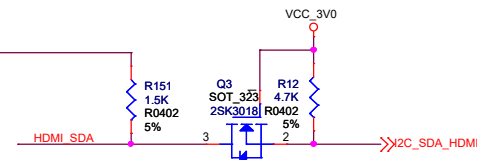
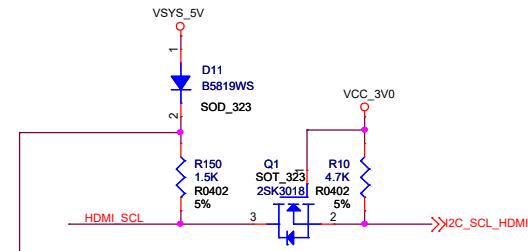
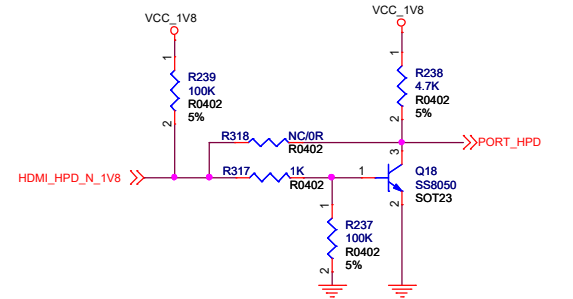
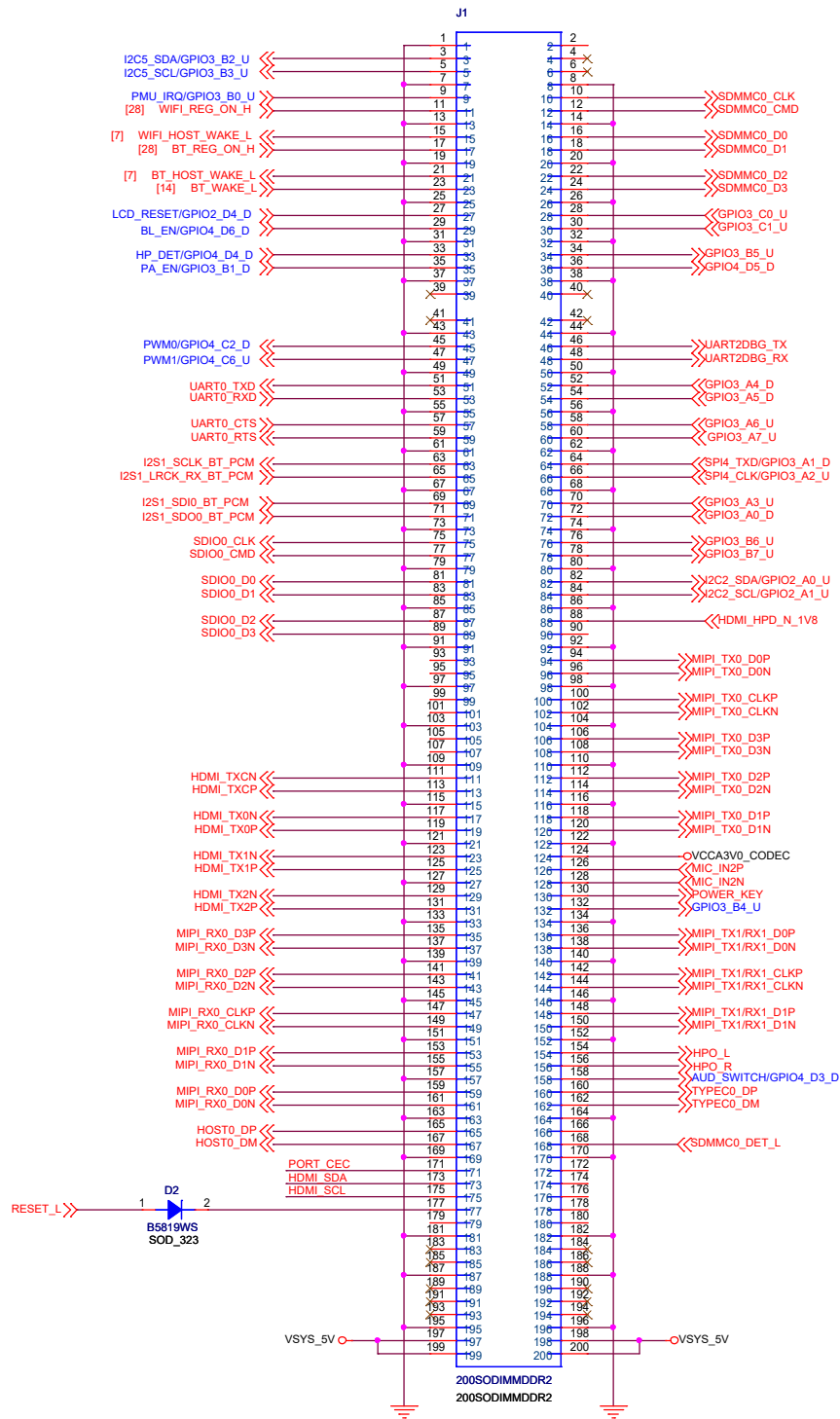


VCC_DDR



CODEC





Title		DevTerm A06 Core for Mainboard V3.14 Schematic
Size	A3	Rev 2
Date:	Tuesday, December 07, 2021	Sheet 15 of 15