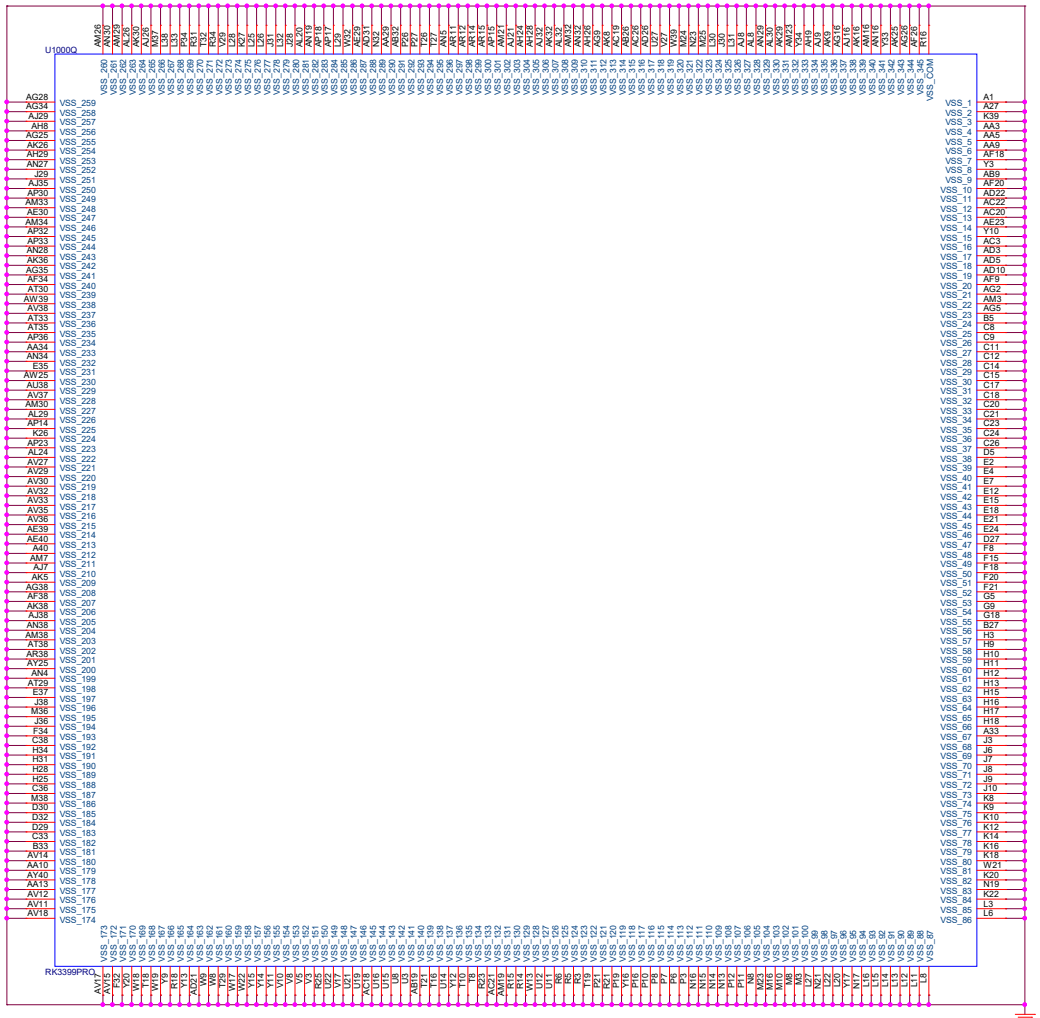
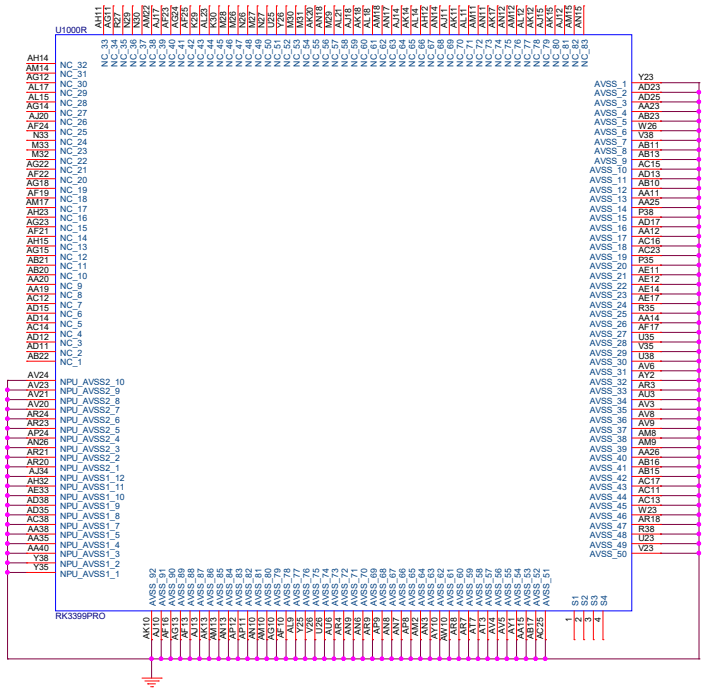
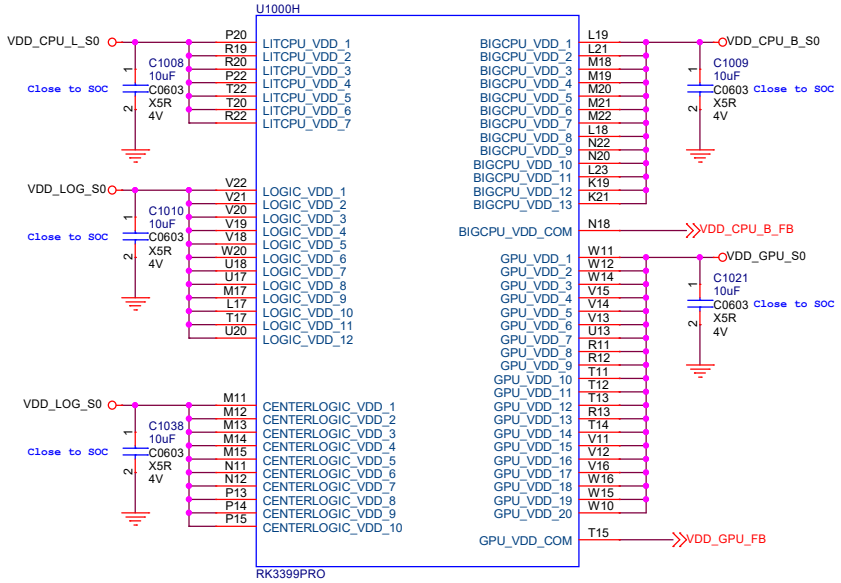
GND

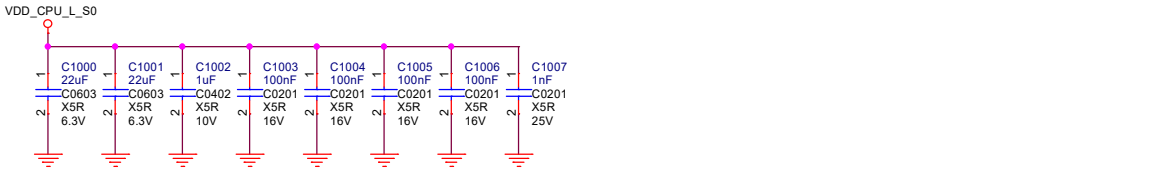


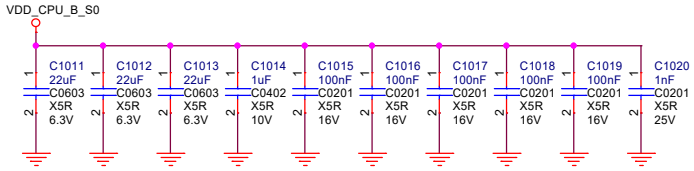


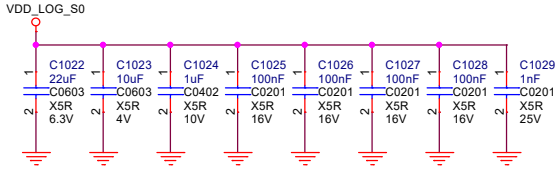
Title	RK3399Pro_vmarc		
Size A2	Document Number RK3399 Pro GND		Rev 1.1
Date: Wednesday, November 13, 2019	Sheet 1 of 17		

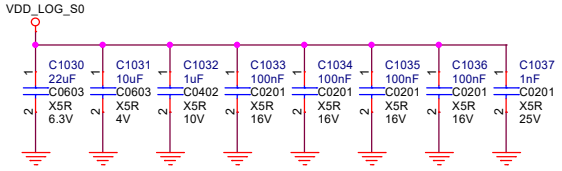
Power

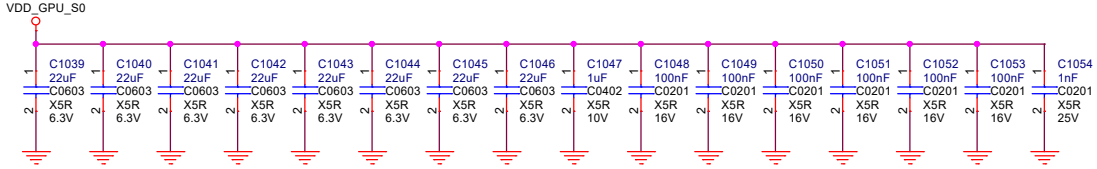




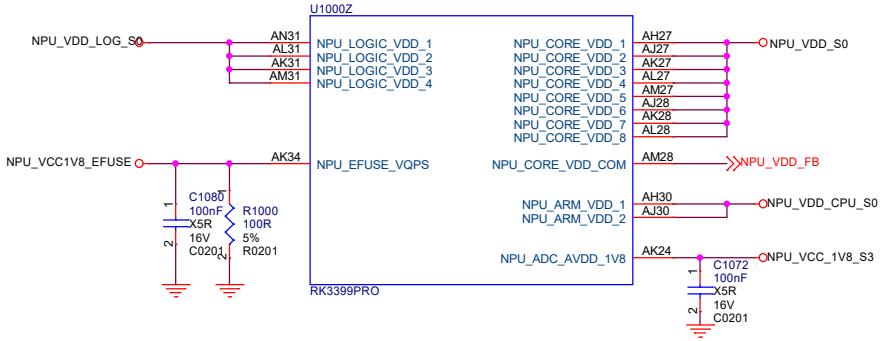


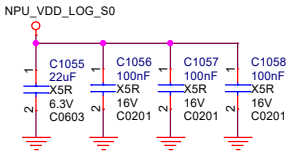


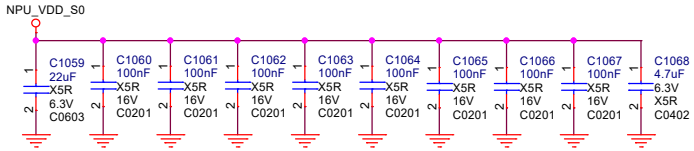


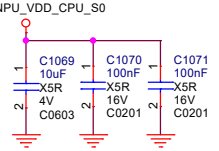


NPU Power



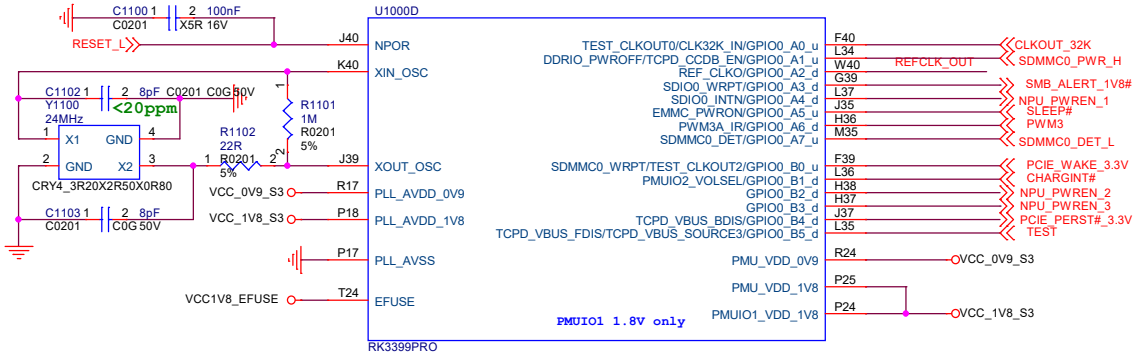


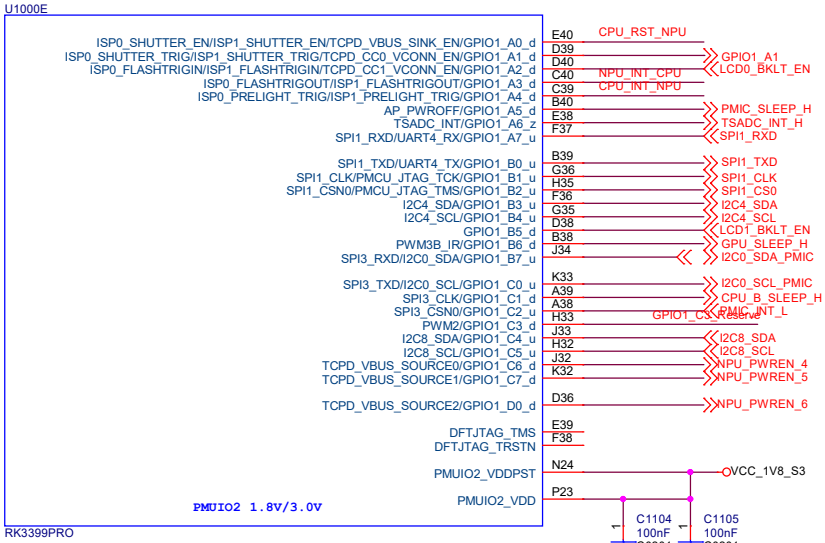




Title	RK3399Pro_vmarc		
Size A3	Document Number RK3399 Pro Power		Rev 1.1
Date: Wednesday, November 13, 2019	Sheet 2 of 17		

PMUIO1/PMUIO2





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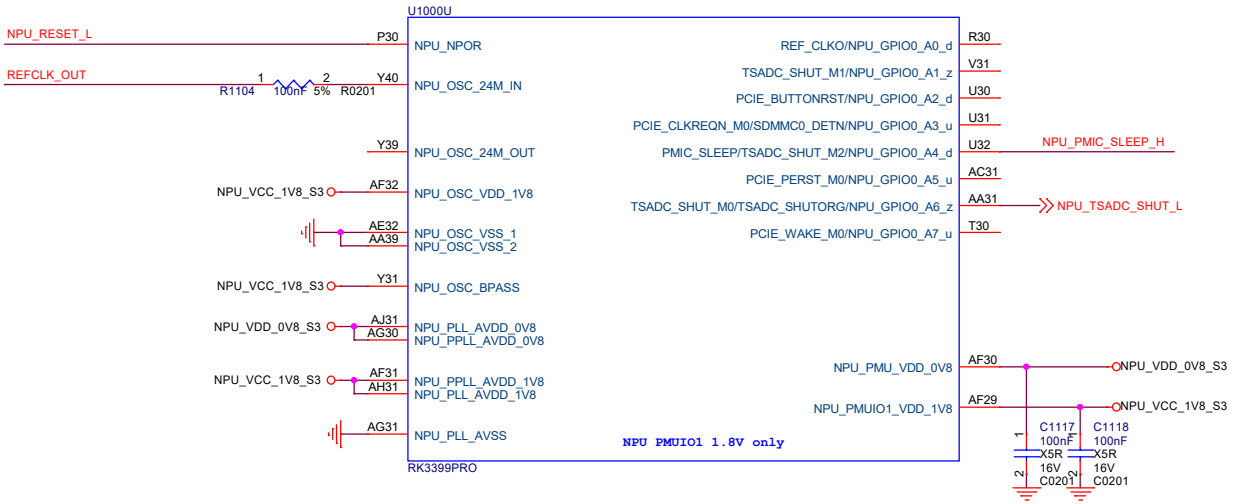
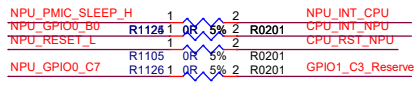
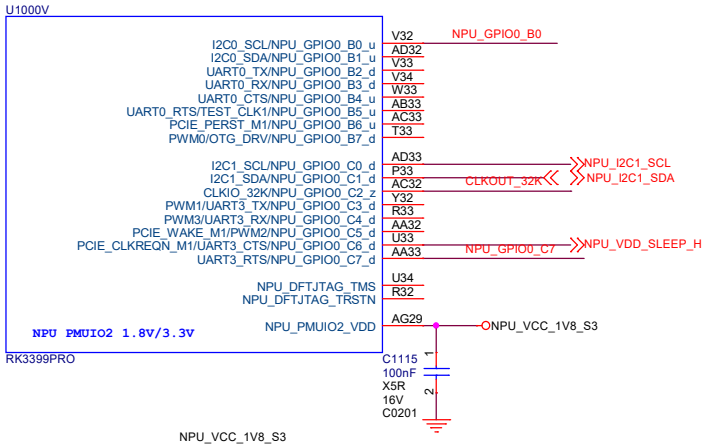
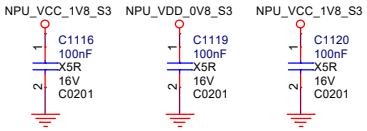
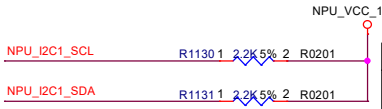




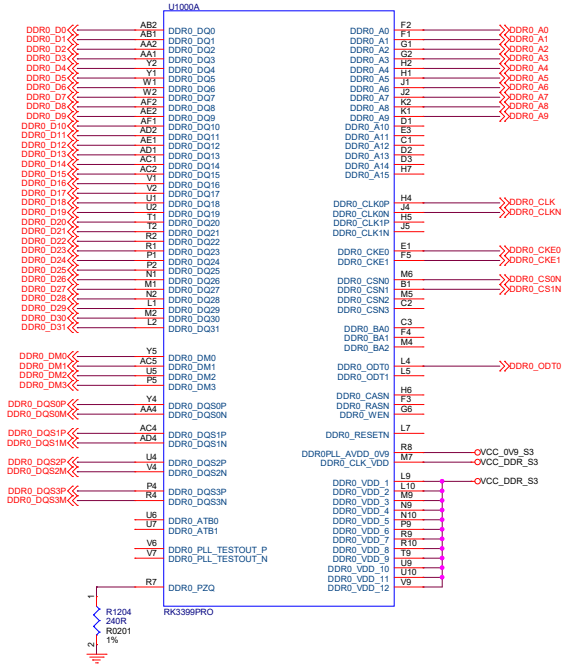


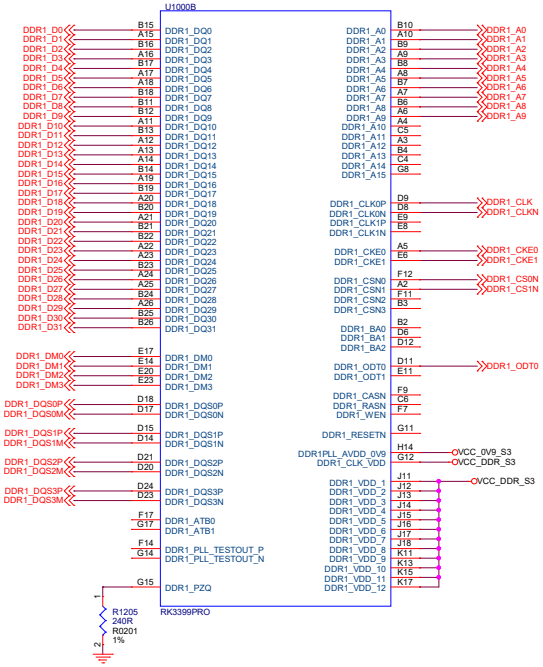




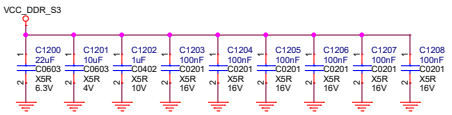
Title	RK3399Pro_vmarc	
Size A3	Document Number RK3399 Pro OSC/PMUIO1/PMUIO2	Rev 1.1
Date: Wednesday, November 13, 2019	Sheet 3 of 17	

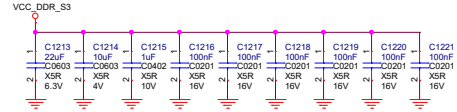
DDR Controller



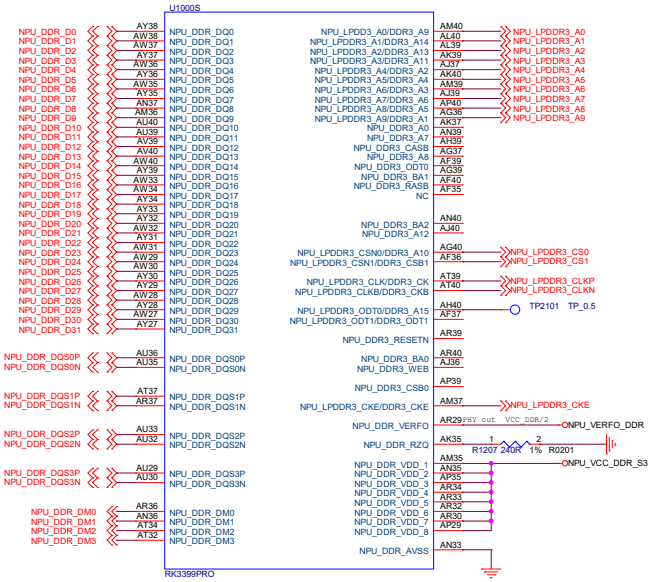


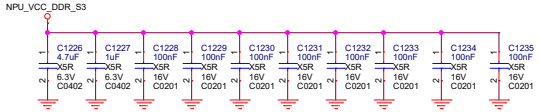
DDR FILTER





NPU DDR Controller

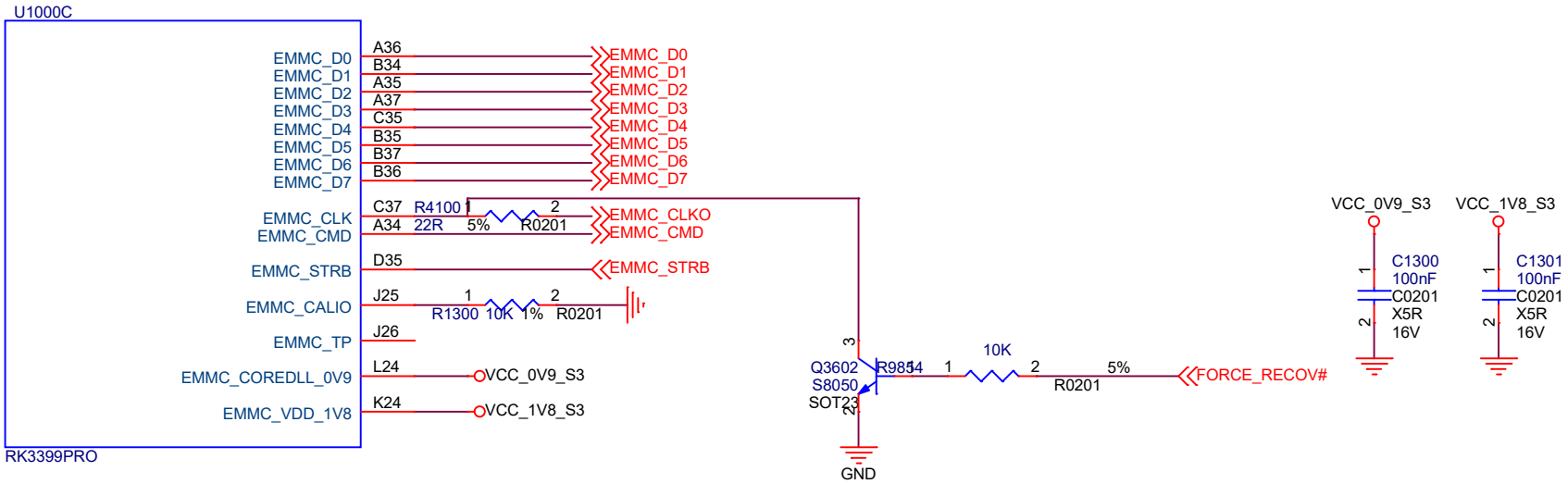




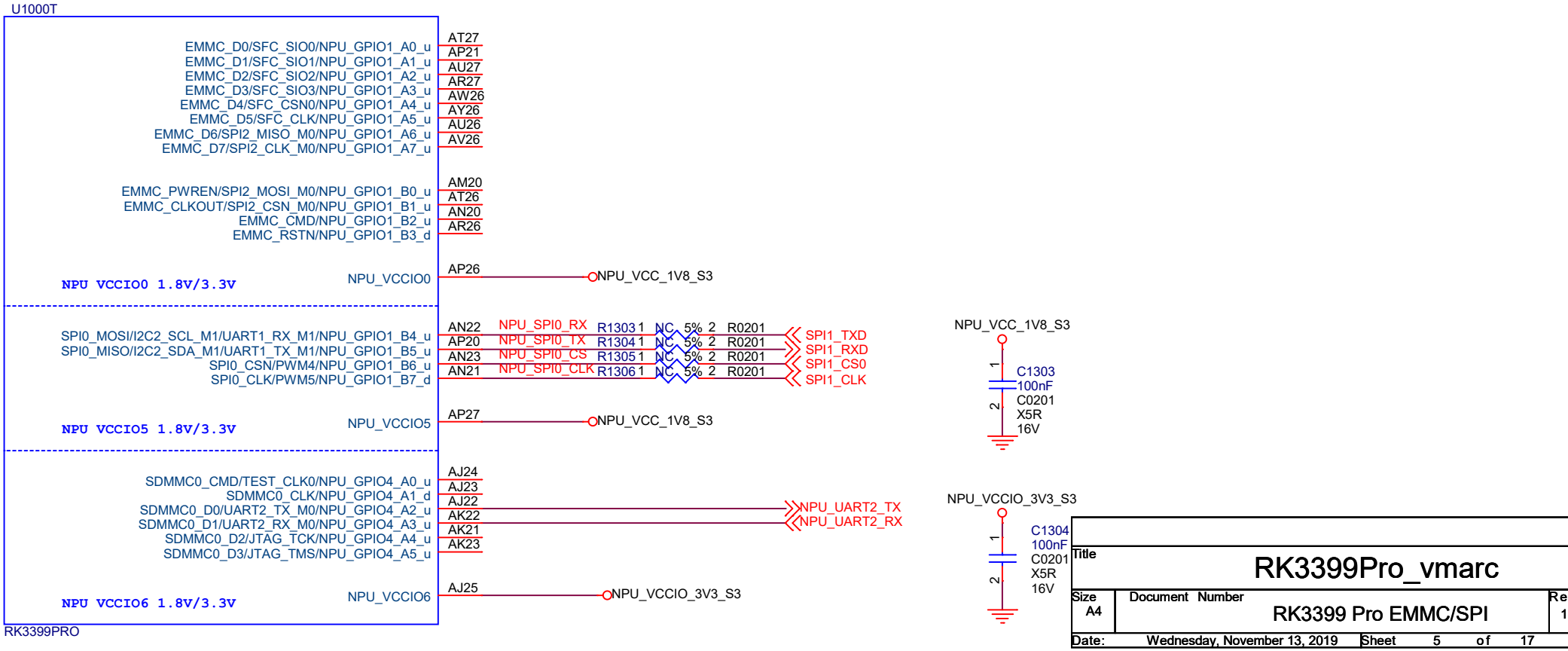
LPDDR3/LPDDR2	DDR3
A0	A9
A1	A14
A2	A13
A3	A11
A4	A2
A5	A4
A6	A3
A7	A6
A8	A5
A9	A1
	A0
	A7
	CASB
	A8
	ODT0
	BA1
	RASB
	CSB0
	BA2
	A12
	BA0
	WEB
CK	CK
CKB	CKB
CKE	CKE
CSB0	A10
CSB1	CSB1
ODT0	A15
ODT1	ODT1
	RESETN

Title	RK3399Pro_vmarc		
Size A2	Document Number RK3399 Pro DDR		Rev 1.1
Date: Wednesday, November 13, 2019	Sheet 4 of 17		

EMMC Controller

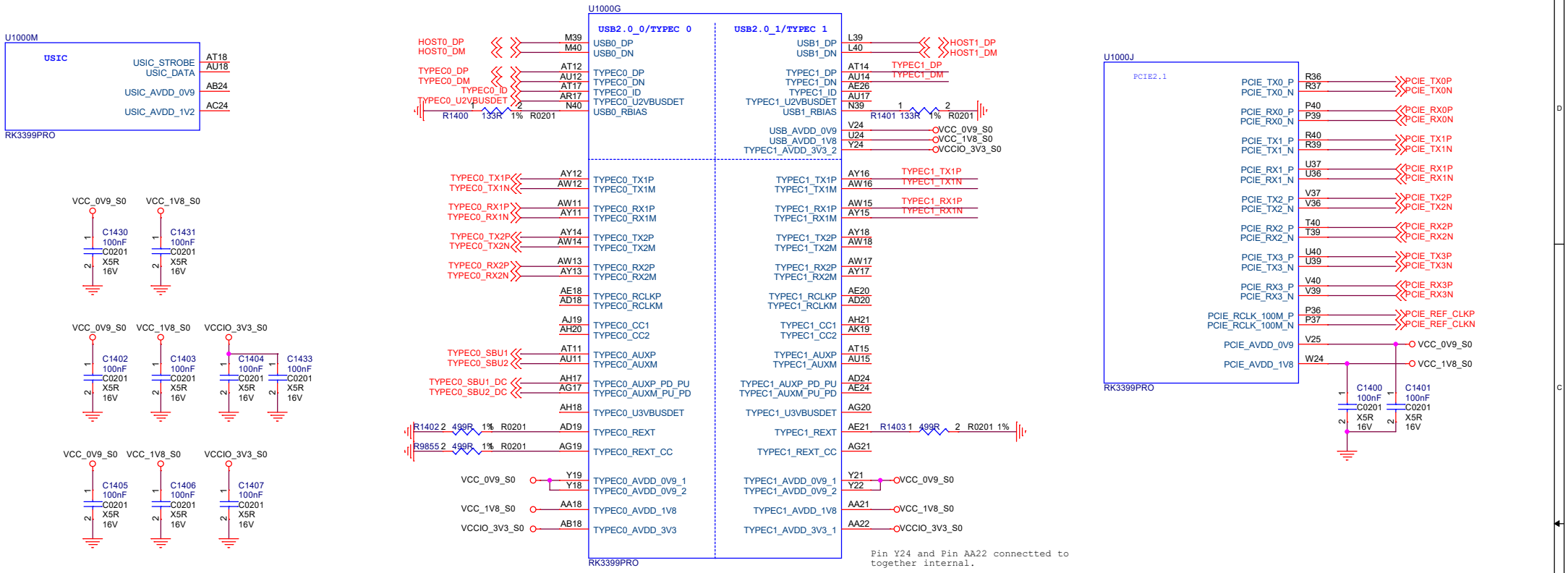


NPU EMMC Controller



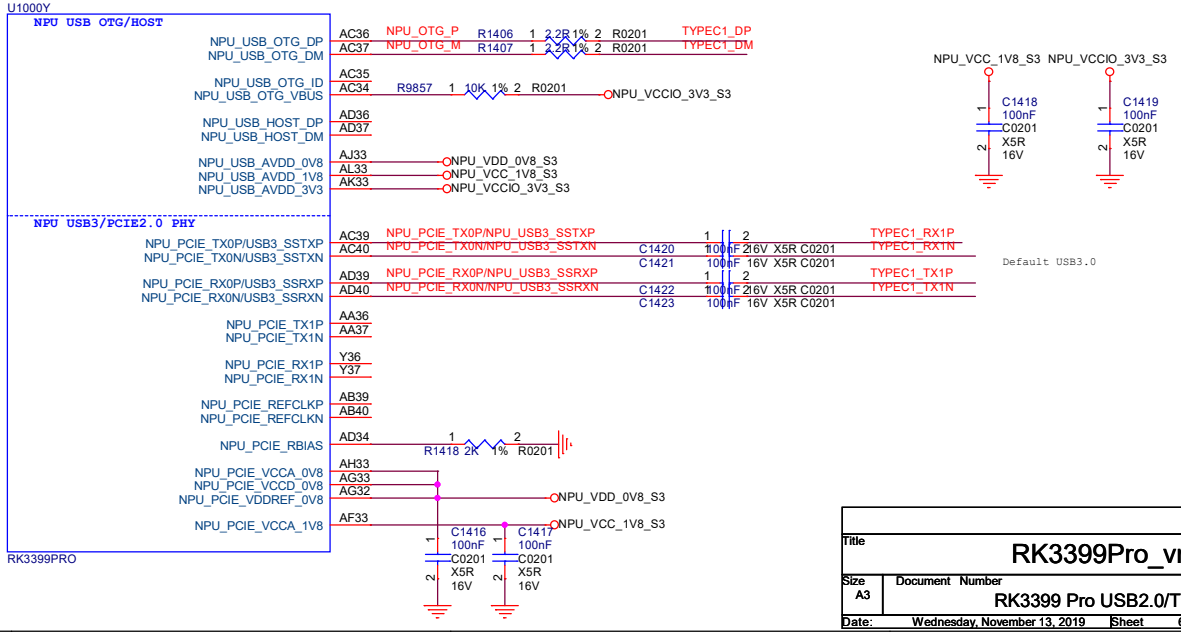
Title	RK3399Pro_vmarc	
Size A4	Document Number RK3399 Pro EMMC/SPI	Rev 1.1
Date: Wednesday, November 13, 2019	Sheet 5 of 17	

USB Controller



PCIE Controller

NPU PCIE/USB3.0 Controller



Title	RK3399Pro_vmarc	
Size A3	Document Number: RK3399 Pro USB2.0/TYPEC/PCIE	Rev 1.1
Date: Wednesday, November 13, 2019	Sheet 6 of 17	

GPIO/SARADC

U1000N

I2C3_SDA/UART2B_RX/GPIO4_C0_u — AF6 — I2C3_SDA_HDMI
I2C3_SCL/UART2B_TX/GPIO4_C1_u — AK2 — I2C3_SCL_HDMI
PWM0/VOP0_PWM/VOP1_PWM/GPIO4_C2_d — AF5 — PWM0 7
UART2C_RX/GPIO4_C3_u — AK3 — UART2_RX 7
UART2C_TX/GPIO4_C4_u — AJ4 — UART2_TX 7
SPDIF_TX/GPIO4_C5_d — AM1 — SPDIF_TX 7
PWM1/GPIO4_C6_d — AG6 — PWM1 7
HDMI_CECINOUT/EDP_HOTPLUG/GPIO4_C7_u — AD7 — VIN_PWR_BAD#

PCIE_CLKREQNB/GPIO4_D0_u — AJ3 — PCIE_CLKREQNB
DP_HOTPLUG/GPIO4_D1_d — AK4 — USB1_EN_OC#
GPIO4_D2_d — AG4 — USB0_EN_OC#
GPIO4_D3_d — AM4 — GPIO4_D3
GPIO4_D4_d — AM5 — GPIO4_D4
GPIO4_D5_d — AL2 — GBE0_SDP
GPIO4_D6_d — AF4 — GBE1_SDP

APIO4_VDDPST — AC8 — VCC_1V5_S0
APIO4_VDD — AC9 — VCCIO_3V0_S0

APIO4 1.8V/3.0V

VCC_1V5_S0 VCCIO_3V0_S0

R1514 10K 5% R0201 — C1501 100nF C0201 X5R 16V — C1502 100nF C0201 X5R 16V

I2S0_SCLK/GPIO3_D0_d — AG3 — I2S0_SCLK
I2S0_LRCK_RX/GPIO3_D1_d — AK1 — I2S0_LRCK_RX
I2S0_LRCK_TX/GPIO3_D2_d — AJ2 — R9851 0R 5% R0201
I2S0_SDI0/GPIO3_D3_d — AL1 — I2S0_SDI0
I2S0_SDI1SDO3/GPIO3_D4_d — AA6 — GPIO3_D5/I2S0_SDI2
I2S0_SDI2SDO2/GPIO3_D5_d — AH2 — GPIO3_D6/I2S0_SDI3
I2S0_SDI3SDO1/GPIO3_D6_d — AJ1 — I2S0_SDO0
I2S0_SDO0/GPIO3_D7_d

VCC_1V8_S0

I2C1_SDA — R9865 2.2K 5% R0201
I2C1_SCL — R9866 2.2K 5% R0201

I2S_CLK/GPIO4_A0_d — AC7 — I2S_CLK
I2C1_SDA/GPIO4_A1_u — AG1 — I2C1_SDA
I2C1_SCL/GPIO4_A2_u — Y6 — I2C1_SCL
I2S1_SCLK/GPIO4_A3_d — AF3 — I2S1_SCLK
I2S1_LRCK_RX/GPIO4_A4_d — AA7 — I2S1_LRCK
I2S1_LRCK_TX/GPIO4_A5_d — AH1 — R1504 0R 5% R0201
I2S1_SDI0/GPIO4_A6_d — AD6 — I2S1_SDI
I2S1_SDO0/GPIO4_A7_d — AC6 — I2S1_SDO

APIO5_VDDPST — AA8 — VCC_1V8_S0
APIO5_VDD — Y8

C1503 100nF C0201 X5R 16V — C1504 100nF C0201 X5R 16V

APIO5 1.8V/3.0V

VCC_1V8_S3 VCC_1V8_S3 VCC_1V8_S3

R1508 10K 1% R0201 — ADC0_IN2
R1 10K 1% R0201 — ADC0_IN3
R2 10K 1% R0201 — ADC0_IN4

ADC_IN0 — W27 — ADC0_IN0
ADC_IN1 — Y29 — ADC0_IN1
ADC_IN2 — Y28 — ADC0_IN2
ADC_IN3 — Y27 — ADC0_IN3
ADC_IN4 — AA28 — ADC0_IN4
ADC_IN5 — AA27

ADC_AVDD — AA24 — VCC_1V8_S3

C1505 100nF C0201 X5R 16V

VCC_1V8_S3

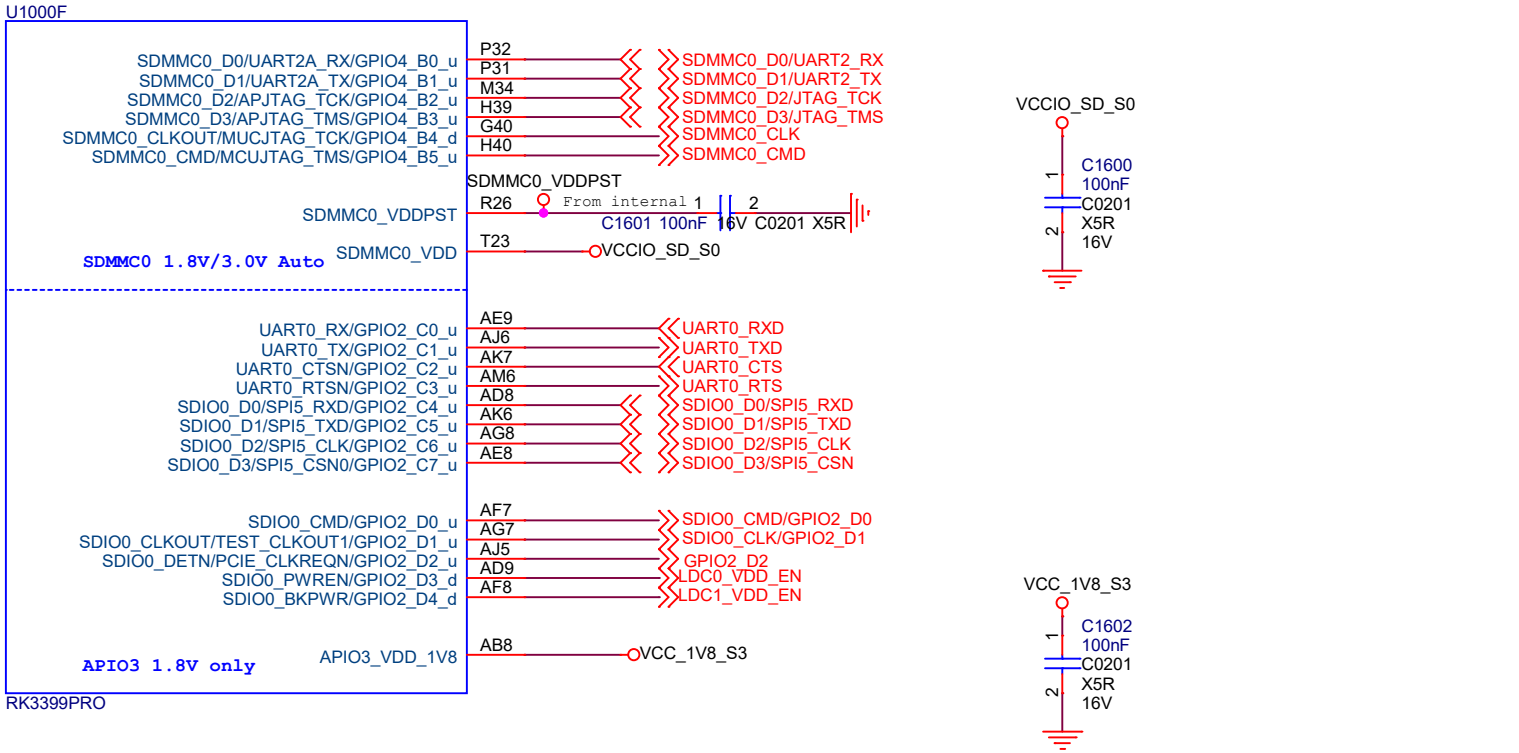
R9856 10K 1% R0201 — ADC0_IN1

SARADC 1.8V only

RK3399PRO

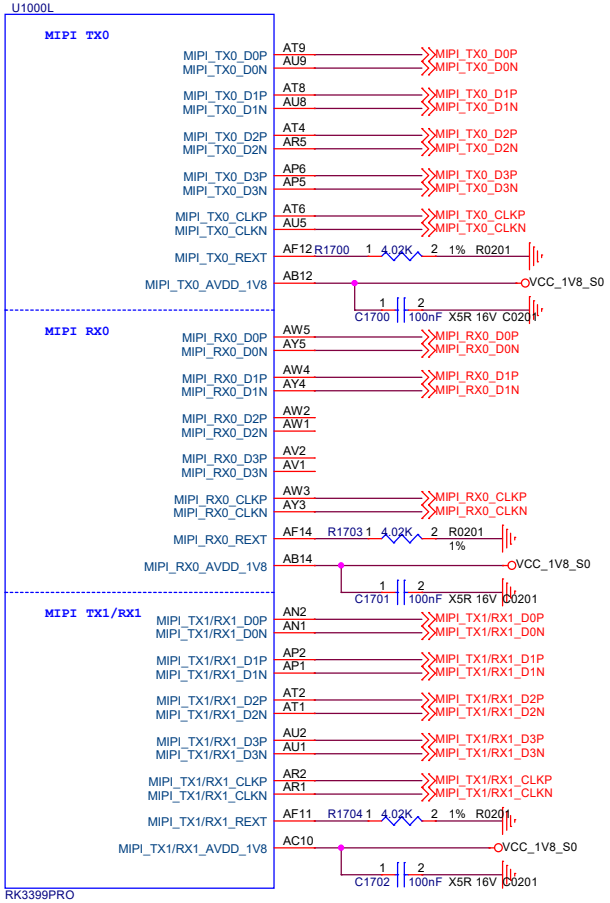
Title	RK3399Pro_vmarc	
Size A	Document Number: RK3399 Pro SARADC/GPIO	Rev 1.1
Date: Wednesday, November 13, 2019	Sheet 7 of 17	

SDMMC0/SDIO0 Controller

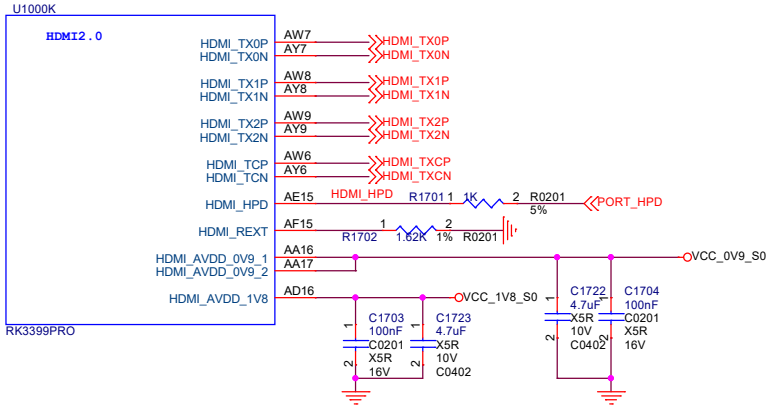


Title	RK3399Pro_vmarc		
Size A4	Document Number RK3399 Pro SDMMC0/SDMMC1		Rev 1.1
Date: Wednesday, November 13, 2019	Sheet 8 of 17		

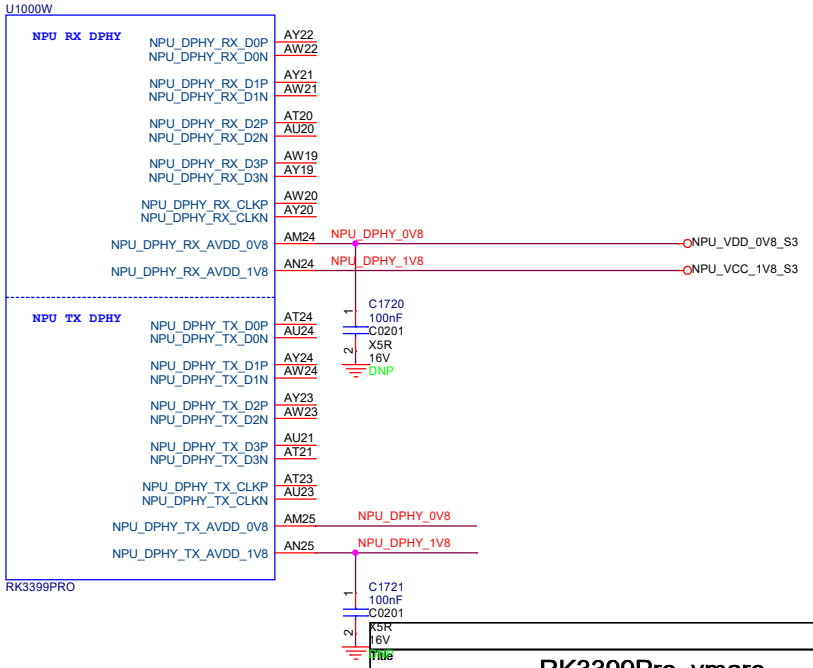
MIPI CSI/DSI Controller



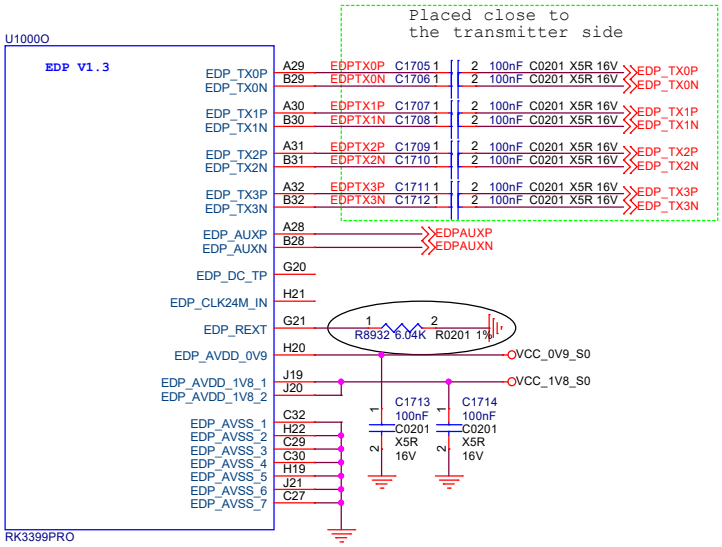
HDMI Controller



NPU MIPI DSI/CSI Controller

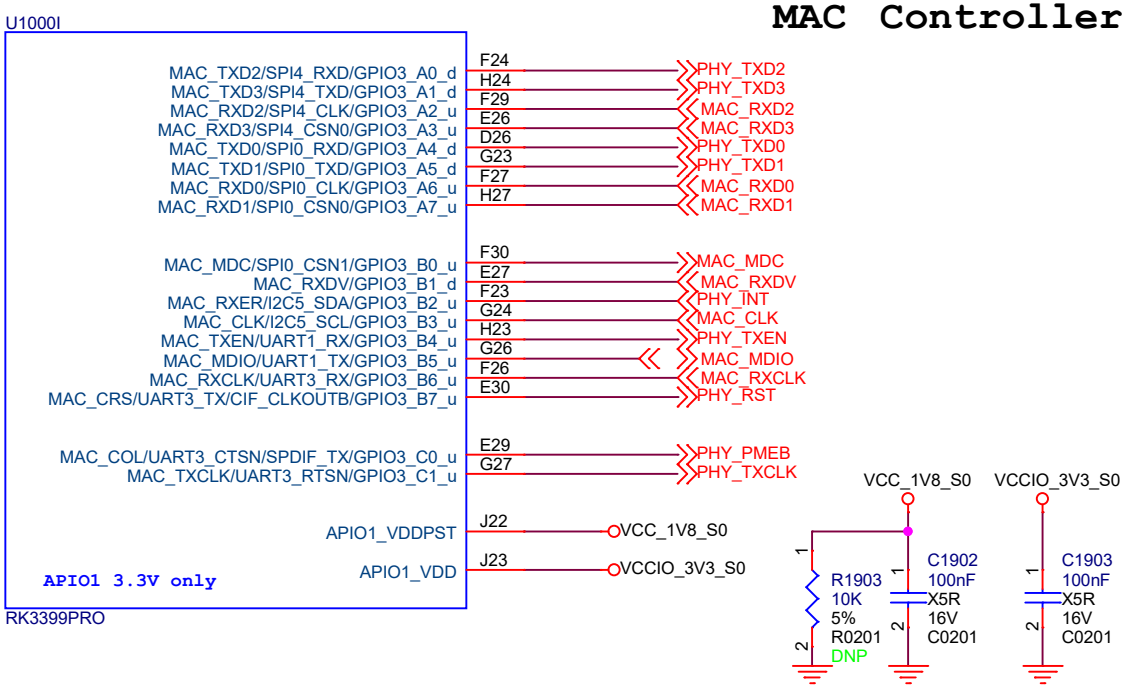


EDP Controller

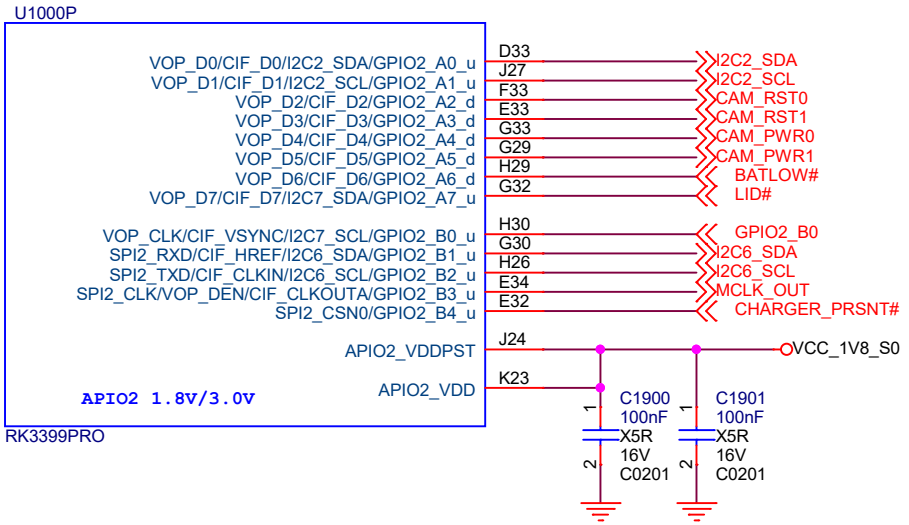


Title	RK3399Pro_vmarc		
Size A3	Document Number RK3399 Pro Display		Rev 1.1
Date: Thursday, November 14, 2019	Sheet 9	of 17	

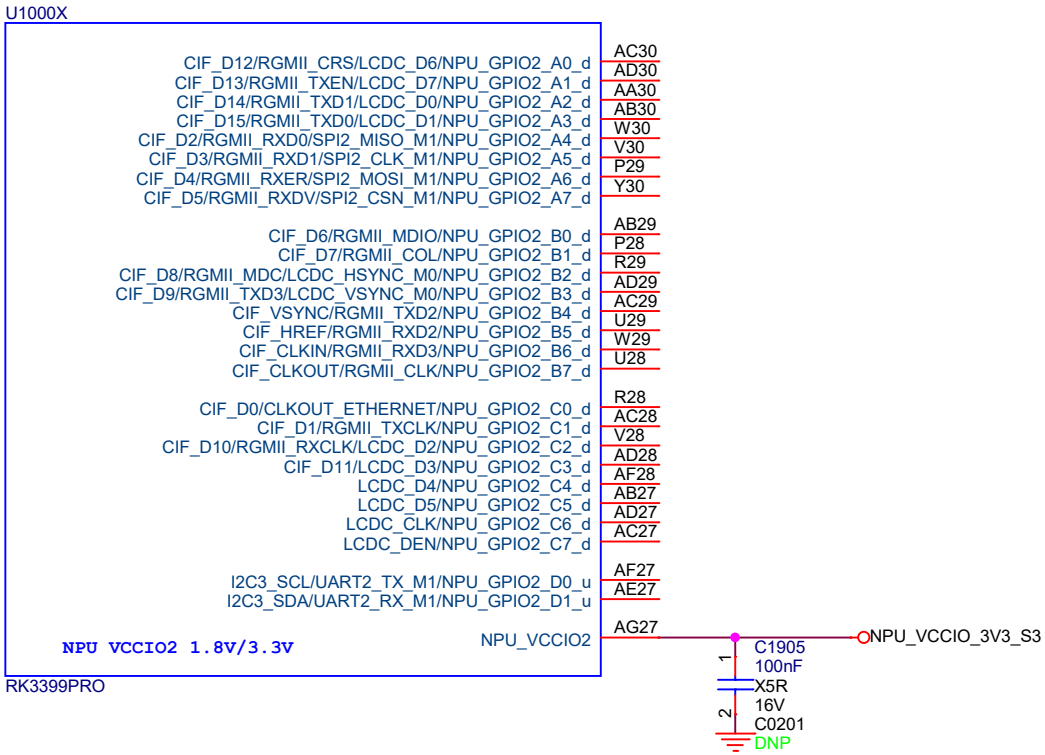
MAC Controller



VOP/CIF Controller

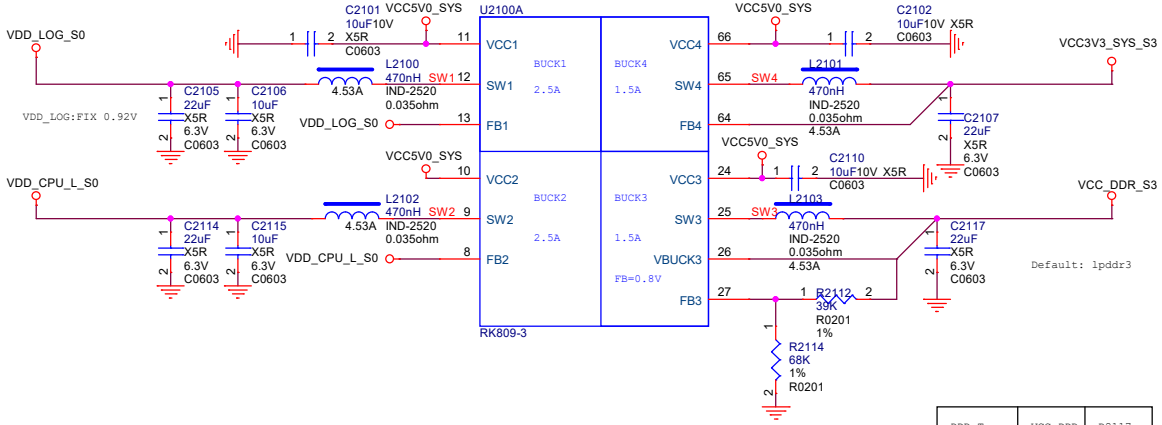


NPU CIF/RGMII/LCDC Controller



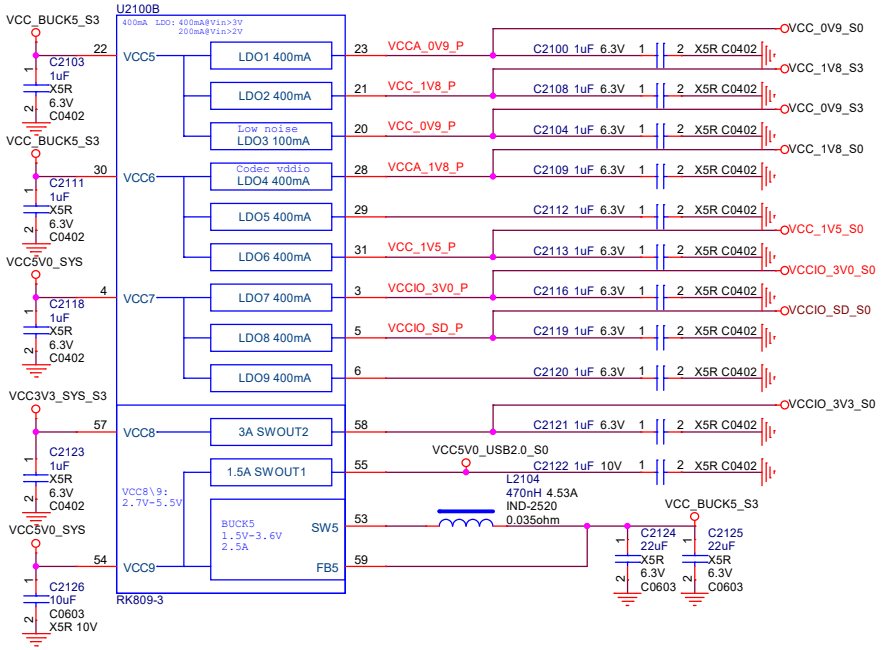
Title	RK3399Pro_vmarc		
Size A4	Document Number RK3399 Pro RGMII/LCDC/CIF		Rev 1.1
Date: Thursday, November 14, 2019	Sheet 10 of 17		

PMIC RK809-3 DCDC

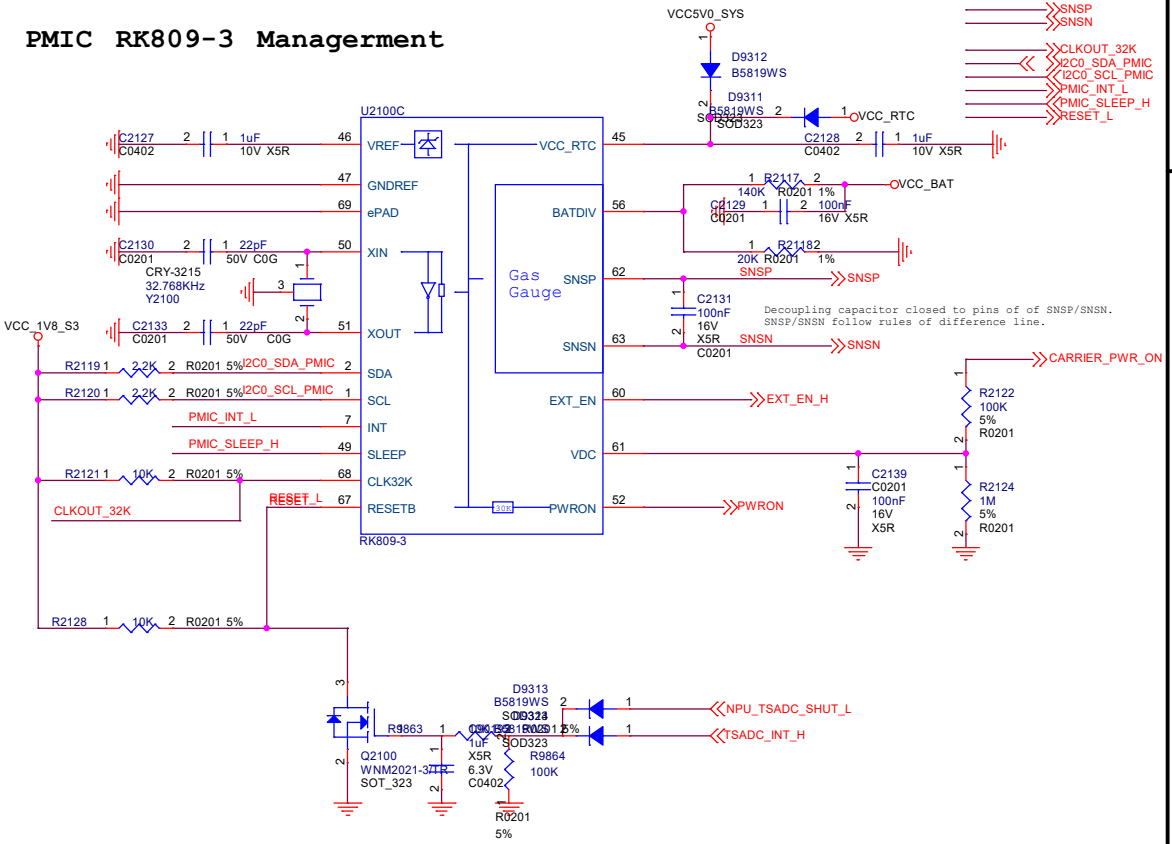


DDR Type	VCC_DDR Voltage	R2117
DDR4	1.25V	68K
LPDDR3	1.25V	68K
DDR3L	1.35V	82K
DDR3	1.53V	110K

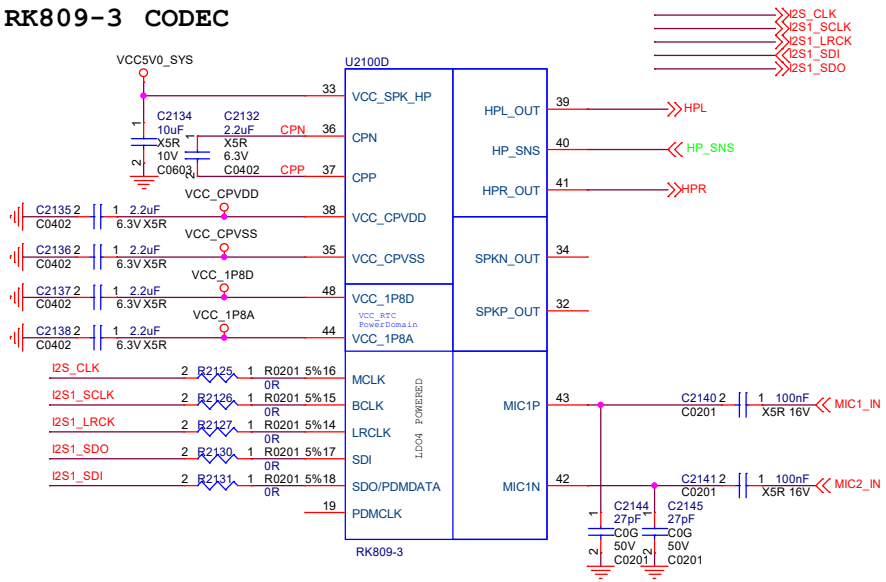
PMIC RK809-3 LDO



PMIC RK809-3 Managerment

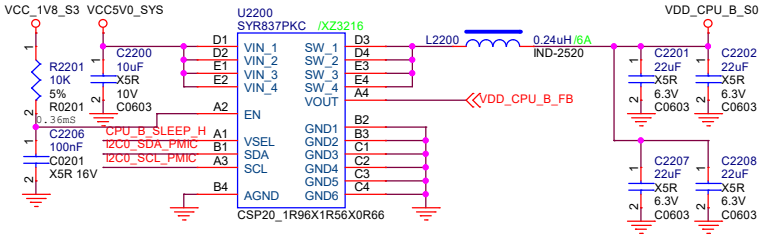


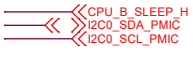
PMIC RK809-3 CODEC



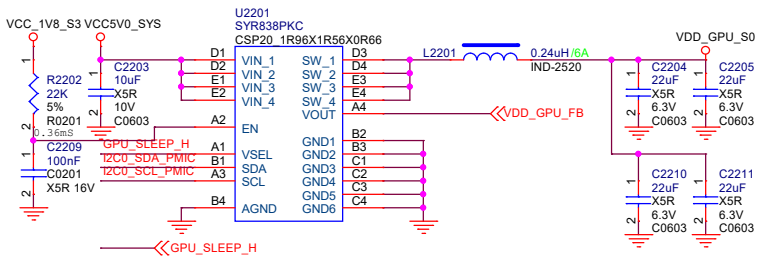
Title	RK3399Pro_vmarc	
Size A3	Document Number Power-PMIC RK809-3	Rev 1.1
Date: Thursday, November 14, 2019	Sheet 11 of 17	

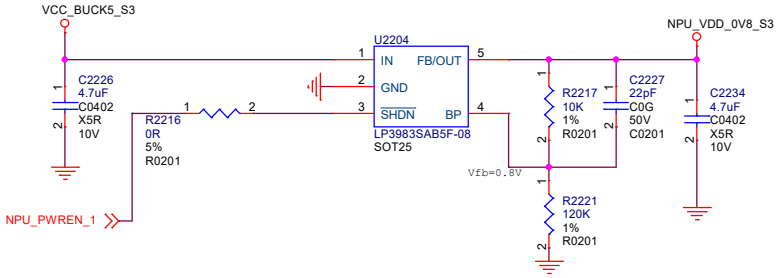
VDD_CPU_B power

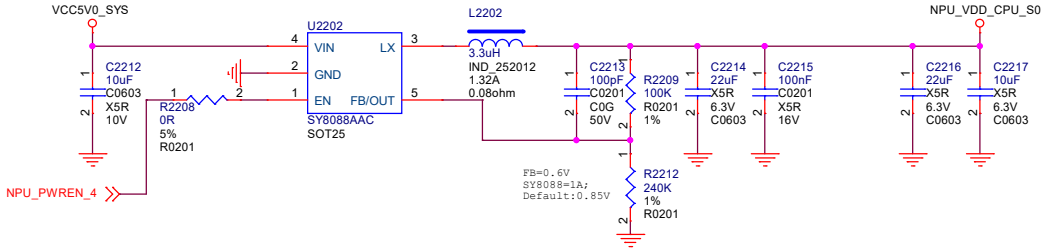


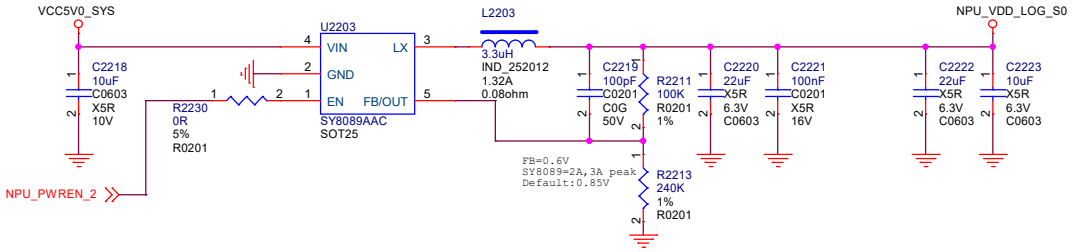


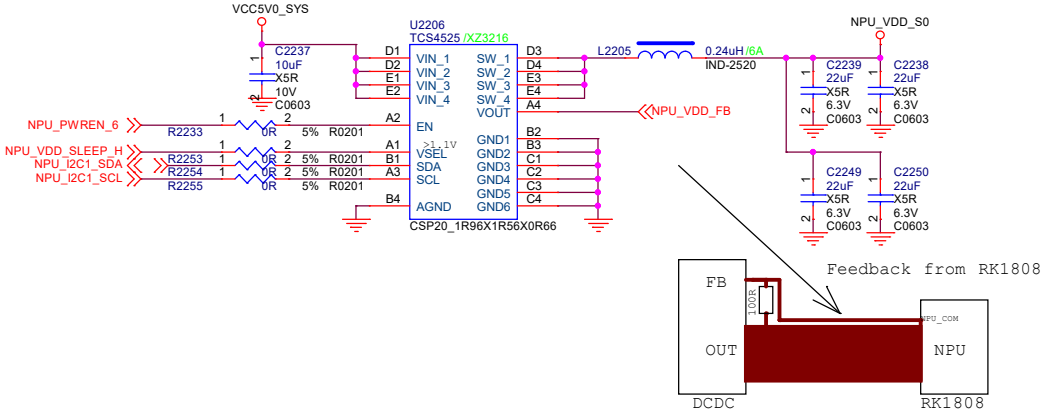
VDD_GPU power

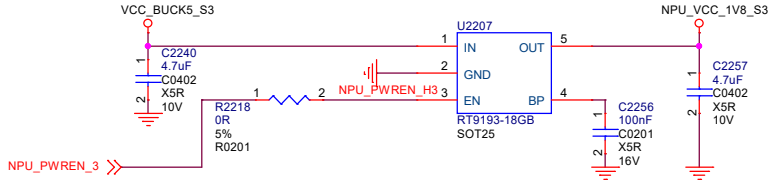


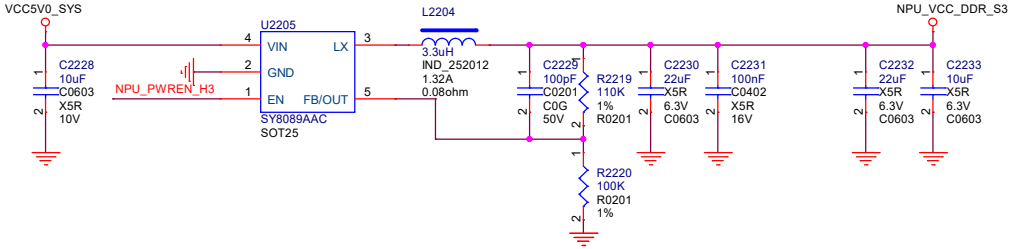


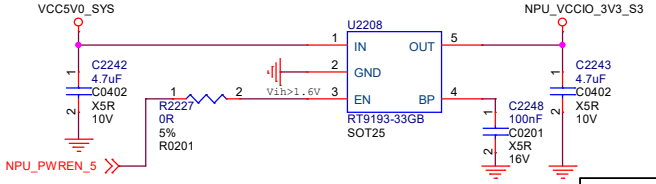








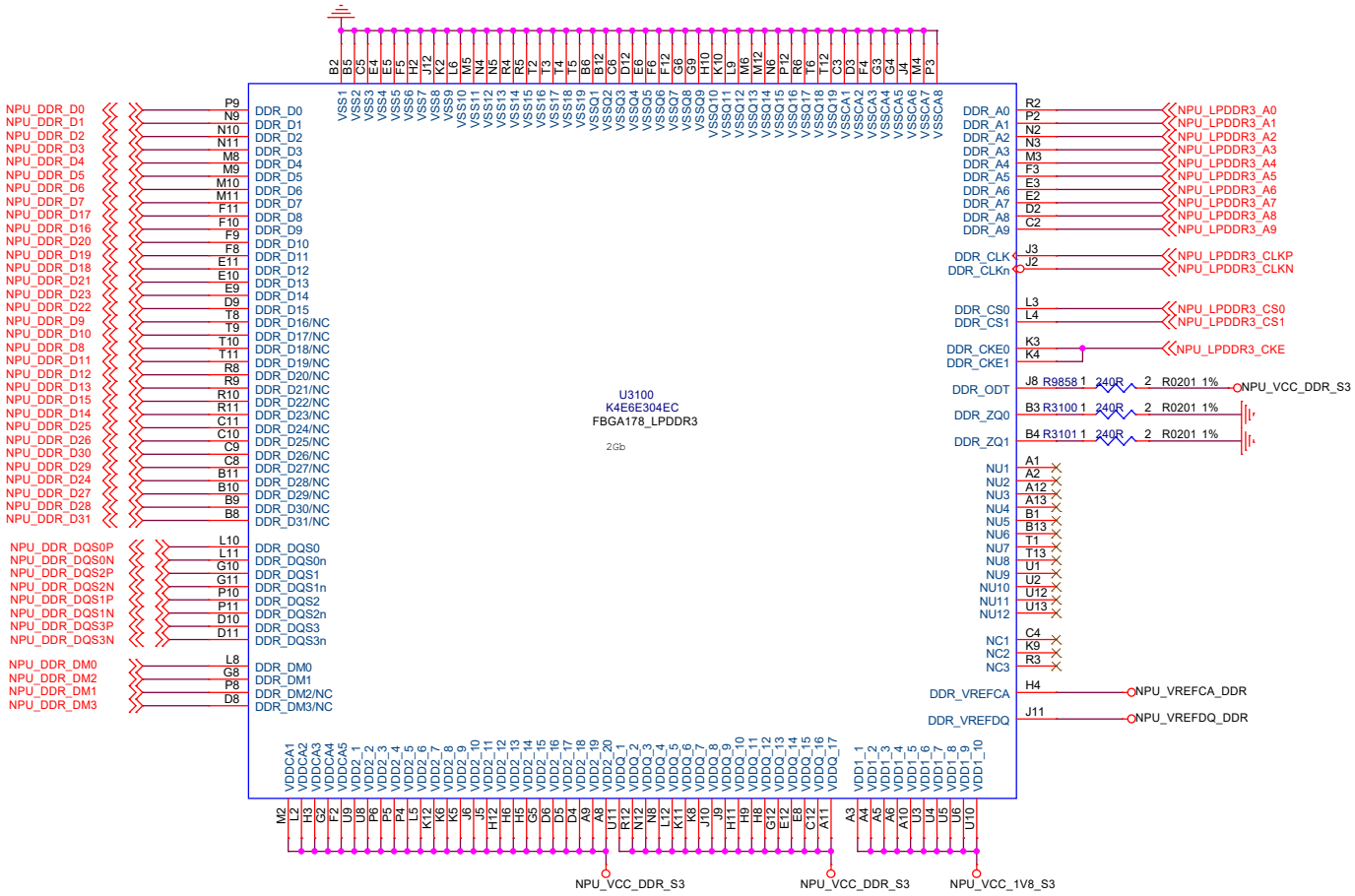


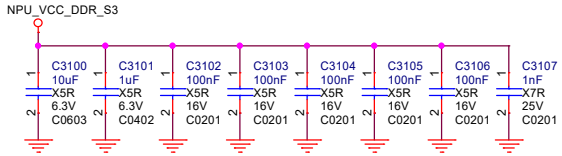


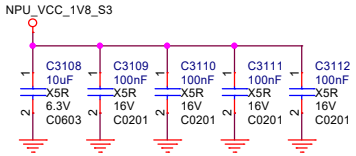
NPU Part power

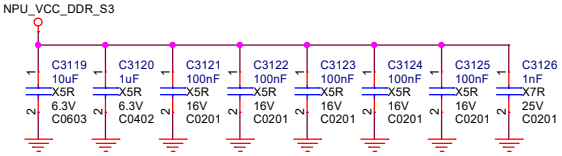
Title	RK3399Pro_vmarc	
Size A3	Document Number POWER-CPU/GPU/NPU	Rev 1.1
Date: Thursday, November 14, 2019	Sheet 12 of 17	

NPU LPDDR3 1x32bit

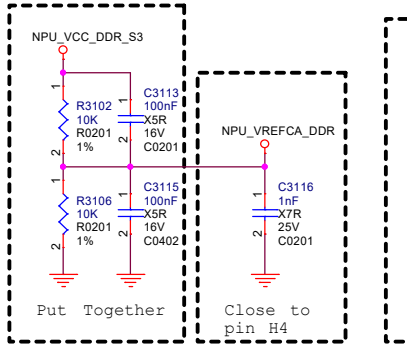


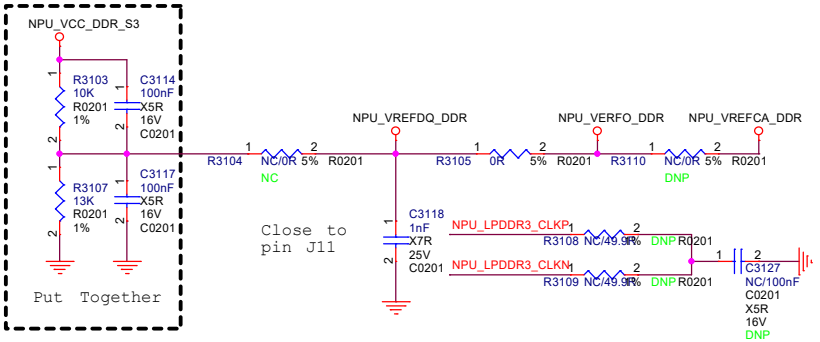






Note:All the power filter capacitors should be placed close to the power pins of LPDDR3



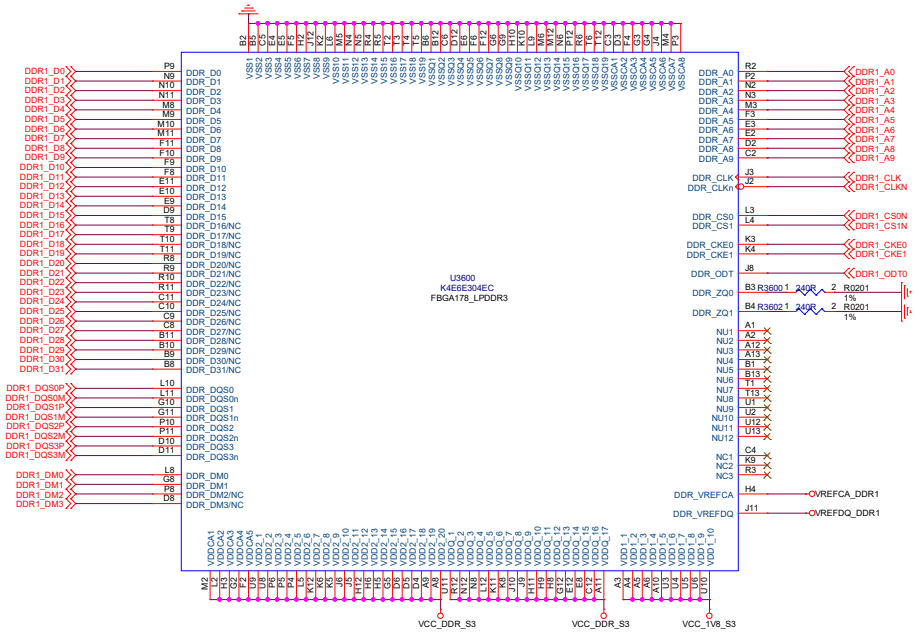


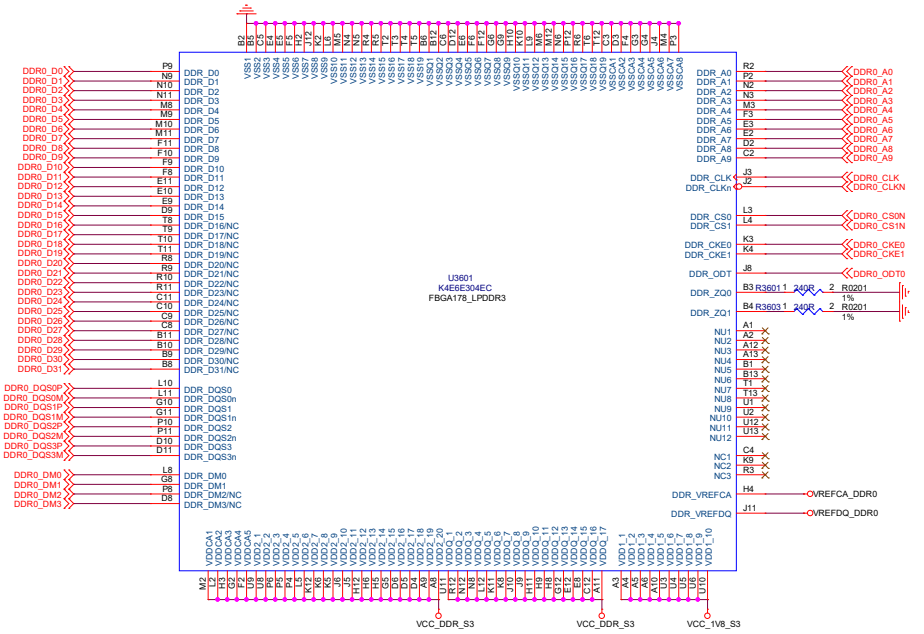
Note:
Vih=VCC
Vil=VCC*Ron/(Ron+Rodt)
VREFDQ_DDR=(Vih+Vil)/2

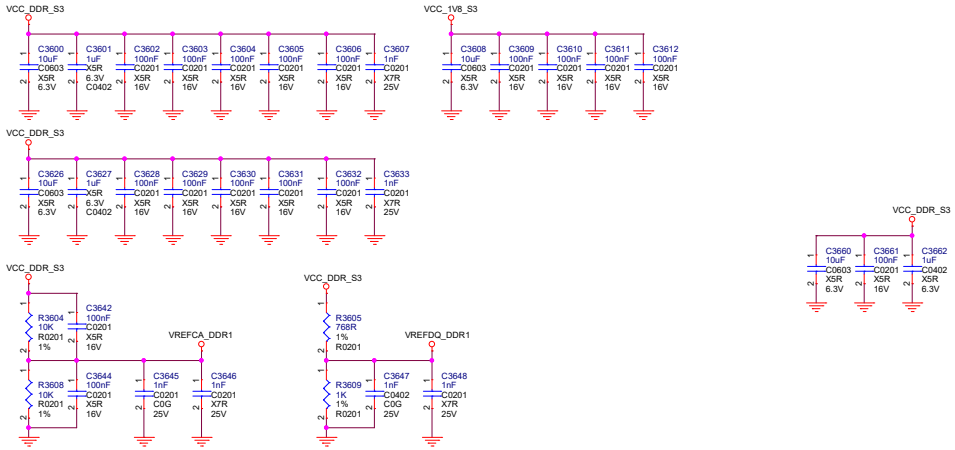
eg:VCC=1.2V,Ron=34ohm,Rodt=240ohm
so,Vih=1.2V,Vil=0.149V,VREFDQ_DDR=0.674V

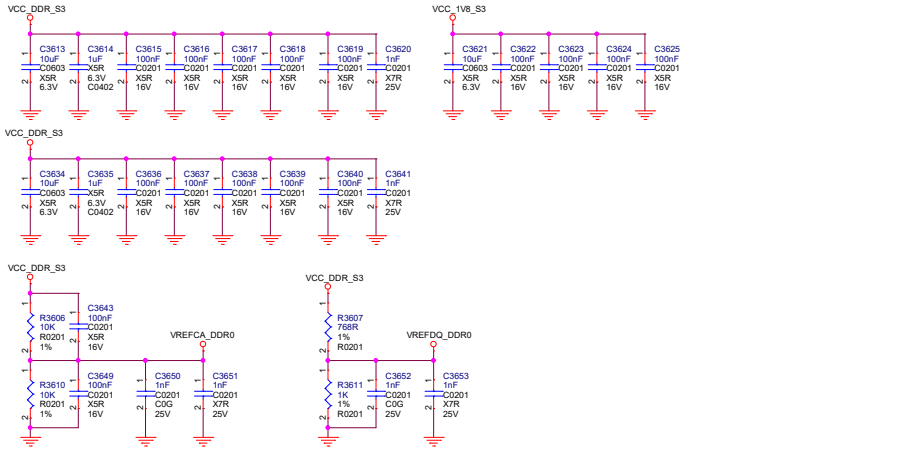
Title	RK3399Pro_vmarc		
Size A3	Document Number NPU_RAM-LPDDR3 1x32bit		Rev 1.1
Date: Thursday, November 14, 2019	Sheet 13 of 17		

LPDDR3



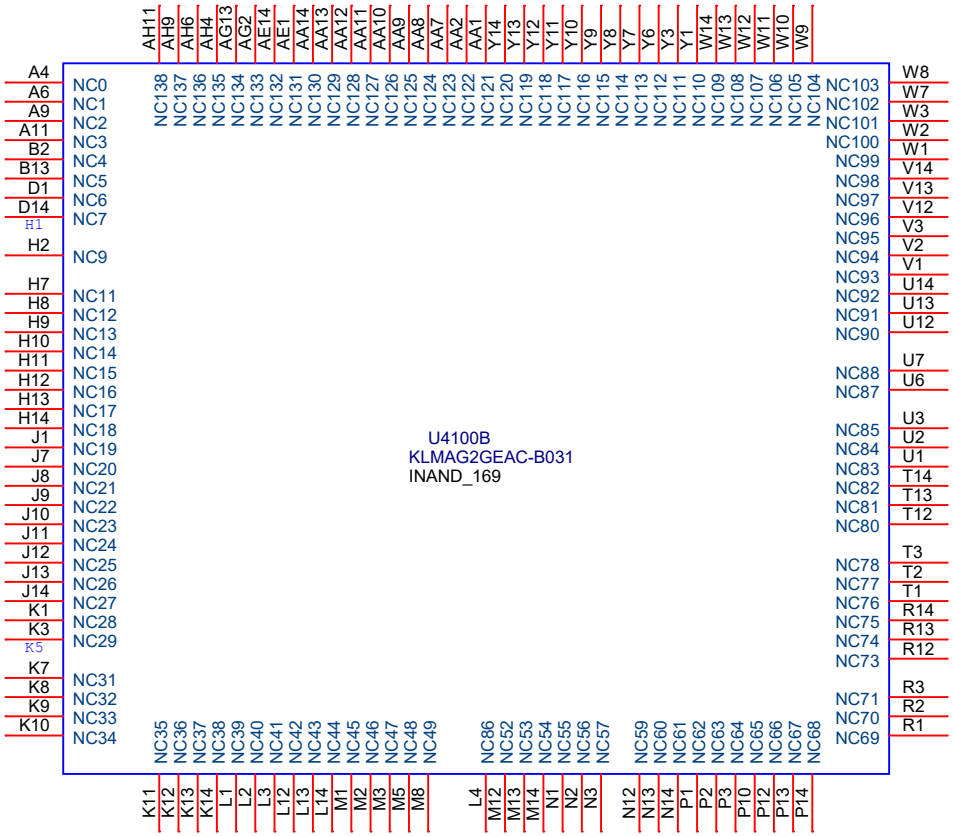


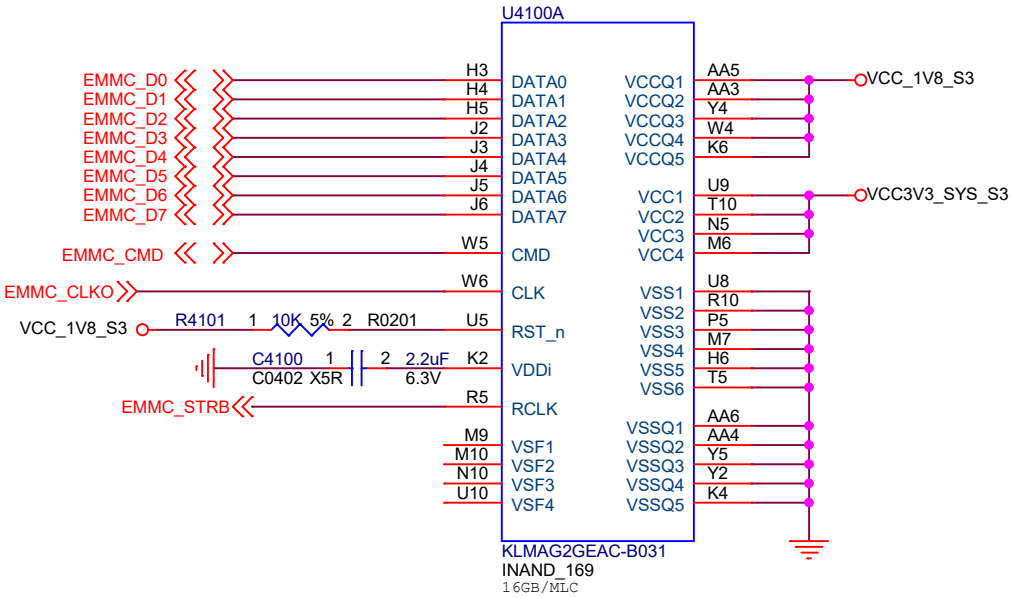


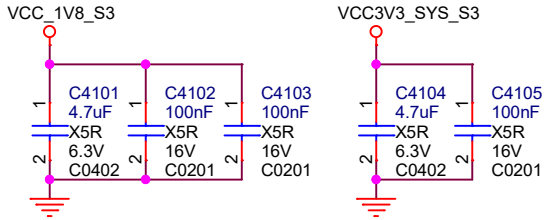


Title	RK3399Pro_vmarc		
Size A2	Document Number RAM-LPDDR3(178P)		Rev 1.1
Date: Thursday, November 14, 2019	Sheet 14 of 17		

eMMC

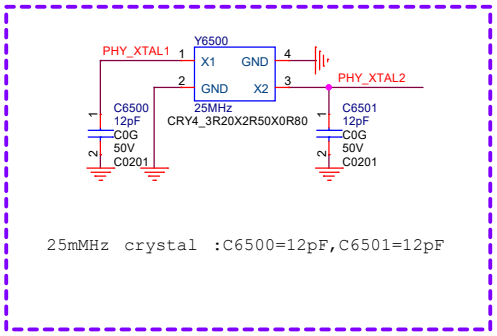






Title	RK3399Pro_vmarc	
Size A4	Document Number EMMC	Rev 1.1
Date: Thursday, November 14, 2019	Sheet 15 of 17	

PHY_TXD0
PHY_TXD1
PHY_TXD2
PHY_TXD3
PHY_TXEN
PHY_TXCLK
MAC_RXD0
MAC_RXD1
MAC_RXD2
MAC_RXD3
MAC_RXDV
MAC_RXCLK
MAC_CLK
MAC_MDIO
MAC_MDC
PHY_RST
PHY_INT
PHY_PMEB

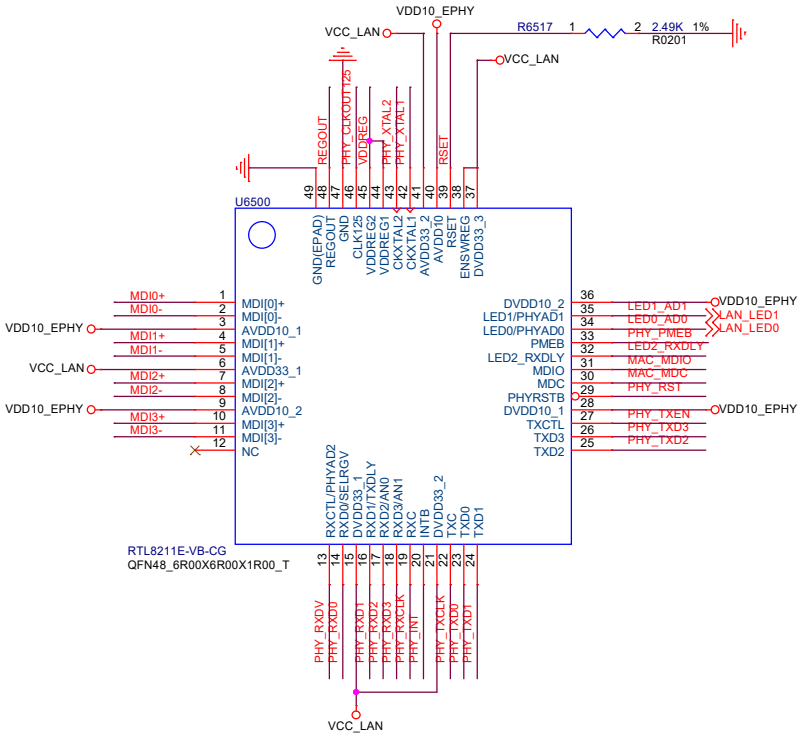


25mMHz crystal :C6500=12pF,C6501=12pF

MAC_CLK R6510 22R 5% R0201 PHY_CLKOUT125

MAC <----- PHY

MDI3-
MDI3+
MDI2-
MDI2+
MDI1-
MDI1+
MDI0-
MDI0+



PHY_RXD0 MAC_RXD0
PHY_RXD1 MAC_RXD1
PHY_RXD2 MAC_RXD2
PHY_RXD3 MAC_RXD3
PHY_RXCLK R6539 0R 5% R0201 MAC_RXCLK
PHY_RXDV MAC_RXDV
C6520 DNP C0201

Close to PHY

R6511 4.7K 5% R0201 PHY_RXDV
R6513 4.7K 5% R0201 LED1_AD1
LED0_AD0 R6516 4.7K 5% R0201 VCC_LAN

PHY Address=001(RTL8211E)

PHY_RXD2 R6518 4.7K 5% R0201 VCC_LAN
PHY_RXD3 R6521 4.7K 5% R0201

Config for all capability

R6522 4.7K 5% R0201 LED2_RXDLY

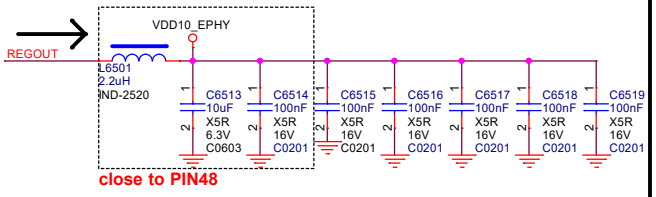
Without RX Delay

R6524 4.7K 5% R0201 PHY_RXD1

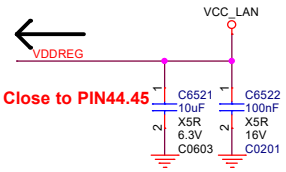
Without TX Delay

PHY_PMEB R6526 4.7K 5% R0201 VCC_LAN
PHY_INT R6527 4.7K 5% R0201 VCC_LAN

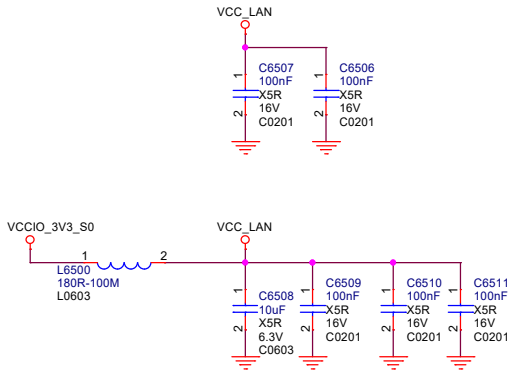
Connect ENSWREG to AVDD33 to enable
Switching regulator or connect ENSWREG
to GND to disable Switching regulator.



close to PIN48



Close to PIN44.45



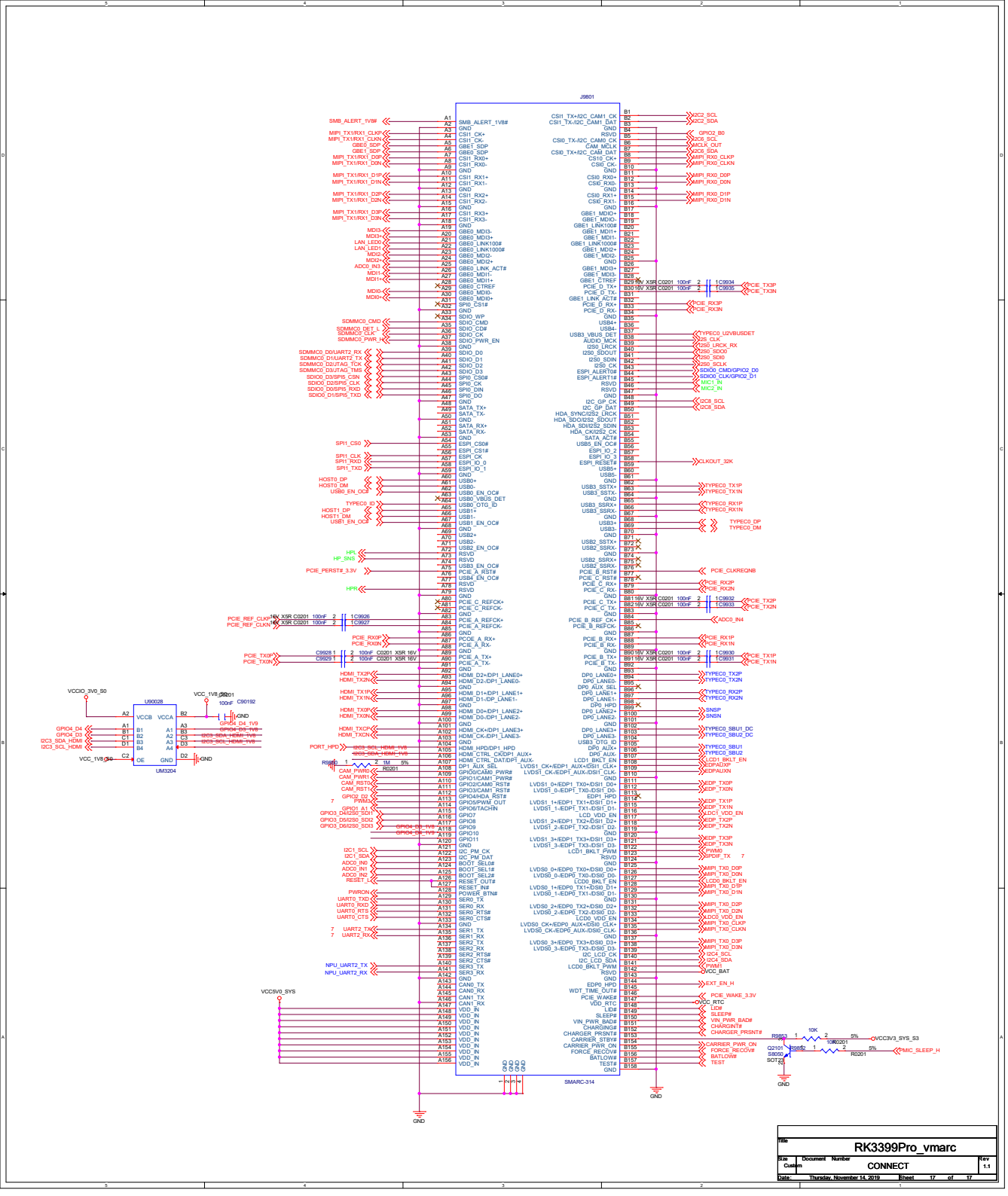
PHY_RXD0 R6529 4.7K 5% R0201 VCC_LAN

Pull down for 2.5V RGMII(RTL8211D/8211E)
Pull up for 3.3V RGMII (RTL8211D/8211E)
Pull up1.5 /1.8V RGMII (RTL8211E-VL only)

PHY_TXD0 R6530 4.7K 5% R0201
PHY_TXD1 R6531 4.7K 5% R0201
PHY_TXD2 R6532 4.7K 5% R0201
PHY_TXD3 R6533 4.7K 5% R0201
VCC_LAN
MAC_MDIO R6534 1.5K 5% R0201

RGMII 1000M

Title	RK3399Pro_vmarc		
Size A3	Document Number RGMII-10/100/1000M		Rev 1.1
Date: Thursday, November 14, 2019	Sheet 16 of 17		



Title	RK3399Pro_vmarc		
Size: Custom	Document Number: CONNECT		Rev: 1.1
Date: Thursday, November 14, 2019	Sheet 17 of 17		