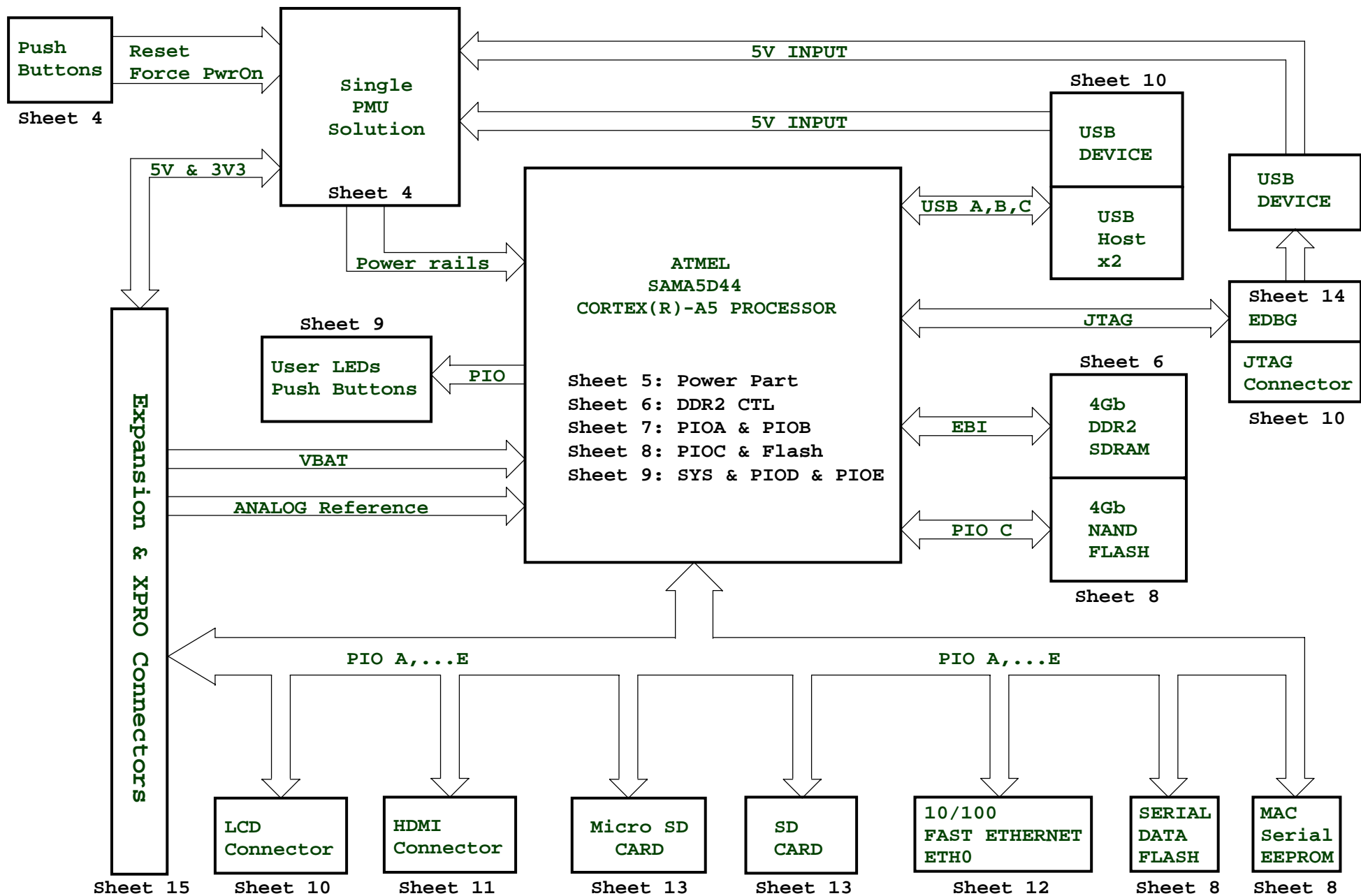


Schematic: SAMA5D4-XULT

SHEET	SHEET NAME
01	Title & Revision History
02	Block Diagram
03	PIO Muxing
04	Power Supply
05	SAMA5D44- Power
06	SAMA5D44- DDR2
07	SAMA5D44- PIOA & PIOB
08	SAMA5D44- PIOC & FLASH
09	SAMA5D44- SYS & PIOD & PIOE
10	JTAG & USB & DEBUG & LCD
11	HDMI
12	Ethernet_ETH0_10/100M
13	HSMCI
14	EDBG
15	Expansion & XPRO Connectors

Revision History

DATE	REVISION	DESCRIPTION
11 Oct 2014	SAMA5D4-XULT RevA-141011	Official Release




PIO Muxing & Jumper setting

LCD	
ID_SYS	1
GND	2
LCDDAT0	3
LCDDAT1	4
LCDDAT2	5
LCDDAT3	6
GND	7
LCDDAT4	8
LCDDAT5	9
LCDDAT6	10
LCDDAT7	11
GND	12
LCDDAT8	13
LCDDAT9	14
LCDDAT10	15
LCDDAT11	16
GND	17
LCDDAT12	18
LCDDAT13	19
LCDDAT14	20
LCDDAT15	21
GND	22
LCDDAT16	23
LCDDAT17	24
LCDDAT18	25
LCDDAT19	26
GND	27
LCDDAT20	28
LCDDAT21	29
LCDDAT22	30
LCDDAT23	31
GND	32
LCDPCK	33
LCDVSYNC	34
LCDHSYNC	35
LCDDEN	36
SPI1_SPCK/AD3_YM	37
SPI1_MOSI/AD2_YP	38
SPI1_MISO/AD1_XM	39
SPI1_NPCS2/AD0_XP	40
LCDDISP	41
TWD0	42
TWCK0	43
IRQ1	44
IRQ2	45
LCDPWM	46
Reset	47
VCC	48
VCC	49
GND	50

PIOA	USAGE	PIOA	USAGE	PIOB	USAGE	PIOB	USAGE	PIOC	USAGE	PIOC	USAGE
PA0	LCDDAT0/JTAG_TMS	PA16	LCDDAT16/NTRST	PB0	G0_TXCK	PB16	G0_MDC	PC0	SPI0_MISO/PWMH2/ISI_D8	PC16	NAND_RDY
PA1	LCDDAT1	PA17	LCDDAT17	PB1	SCK2/ISI_PCK	PB17	G0_MDIO	PC1	SPI0_MOSI/PWML2/ISI_D9	PC17	NAND_ALE
PA2	LCDDAT2	PA18	LCDDAT18	PB2	G0_TXEN	PB18	SPI1_MISO	PC2	SPI0_SPCK/PWMH3/ISI_D10	PC18	NAND_CLE
PA3	LCDDAT3	PA19	LCDDAT19	PB3	CTS2/ISI_VSYNC	PB19	SPI1_MOSI	PC3	SPI0_NPCS0/PWML3/ISI_D11	PC19	ISI_D0/TK1
PA4	LCDDAT4	PA20	LCDDAT20	PB4	RXD2/ISI_HSYNC	PB20	SPI1_SPCK	PC4	MCIO_CK/PCK1	PC20	ISI_D1/TF1
PA5	LCDDAT5	PA21	LCDDAT21	PB5	TXD2/PCK2	PB21	SPI1_NPCS0	PC5	MCIO_CDA/NAND_D0	PC21	ISI_D2/TD1
PA6	LCDDAT6	PA22	LCDDAT22	PB6	G0_RXDV	PB22	SPI1_NPCS1	PC6	MCIO_DA0/NAND_D1	PC22	ISI_D3/RF1
PA7	LCDDAT7	PA23	LCDDAT23	PB7	G0_RXER	PB23	SPI1_NPCS2	PC7	MCIO_DA1/NAND_D2	PC23	ISI_D4/RD1
PA8	LCDDAT8/JTAG_TCK	PA24	LCDPWM/HDMI_MCK	PB8	G0_RX0	PB24	JTAG_TDI	PC8	MCIO_DA2/NAND_D3	PC24	ISI_D5/RK1/PCK1
PA9	LCDDAT9	PA25	LCDDISP/HDMI_INT	PB9	G0_RX1	PB25	JTAG_TDO	PC9	MCIO_DA3/NAND_D4	PC25	ISI_D6/TWD3/URXD1
PA10	LCDDAT10	PA26	LCDVSYNC	PB10	PCK2/PWML1	PB26	PCK0/RK0/PWMH0	PC10	NAND_D5	PC26	ISI_D7/TWCK3/UTXD1
PA11	LCDDAT11	PA27	LCDHSYNC	PB11	RTS2/PWMH1	PB27	SPI1_NPCS3/HDMI_TK0/PWML0	PC11	NAND_D6	PC27	AD0_XP/PWML0
PA12	LCDDAT12	PA28	LCDPCK	PB12	G0_TX0	PB28	SPI2_NPCS3/HDMI_TD0/PWMH1	PC12	NAND_D7	PC28	AD1_XM/PWML1
PA13	LCDDAT13	PA29	LCDDEN	PB13	G0_TX1	PB29	TWD2/RD0/PWML1	PC13	NAND_RE	PC29	AD2_YP/PWMF10
PA14	LCDDAT14	PA30	TWD0	PB14	SPI2_NPCS1/PWMH0	PB30	TWCK2/RF0	PC14	NWE/NAND_WE	PC30	AD3_YM/PWMH0
PA15	LCDDAT15	PA31	TWCK0	PB15	SPI2_NPCS2/PWML0/HDMI_RST	PB31	HDMI_TF0	PC15	NAND_NCS3	PC31	AD4/PWMH1

PIOD	USAGE	PIOD	USAGE	PIOE	USAGE	PIOE	USAGE
		PD16	RXD1	PE0	USB_OVCUR/CTS4	PE16	DBGU_RXD3
		PD17	TXD1/SPI2_NPCS0	PE1	G0_IRQ	PE17	DBGU_TXD3
		PD18	SENSE0	PE2	MCIO_CD	PE18	TIOA5/MCI1_CK
		PD19	SENSE1	PE3	MCI1_CD	PE19	TIOB5/MCI1_CDA
		PD20	SENSE2	PE4	MCI1_PWR	PE20	TCLK5/MCI1_DA0
		PD21	SENSE3	PE5	DBGU_CTS3	PE21	TIOA4/MCI1_DA1
		PD22	SENSE4	PE6	TIOA3	PE22	TIOB4/MCI1_DA2
		PD23	SENSE5	PE7	TIOB3	PE23	TCLK4/MCI1_DA3
PD8	PCK0	PD24	SENSE6	PE8	PB_USER/TCLK3	PE24	DBGU_RTS3
PD9	FIQ	PD25	SENSE7	PE9	LCD_IRQ1	PE25	PMIC_IRQ/SCK4
PD10	CTS0	PD26	SENSE8	PE10	LCD_IRQ2	PE26	RXD4
PD11	RTS0/SPI2_MISO	PD27	SENSE9	PE11	USBB_EN5V	PE27	TXD4
PD12	RXD0	PD28	SCK0	PE12	TIOA1/PWMH2	PE28	RTS4
PD13	TXD0/SPI2_MOSI	PD29	SCK1	PE13	TIOB1/PWML2	PE29	URXD0/TWD1
PD14	CTS1	PD30	LED_POWER	PE14	USBC_EN5V	PE30	UTXD0/TWCK1
PD15	RTS1/SPI2_SPCK	PD31	SPI0_NPCS2/PCK1	PE15	LED_USER/LCD_ID/TIOA0	PE31	USBA_VBUS

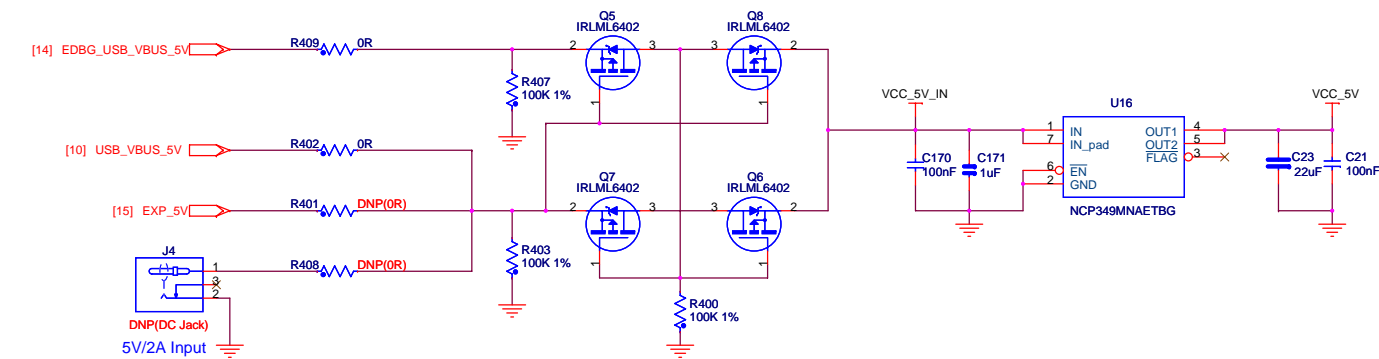
JUMPER DESCRIPTION		
PART	DEFAULT	FUNCTION
JP1	OPEN	Disable EDBG
JP2	SHORT	I_VCC_3V3 Measurement
JP3	SHORT	I_1V2_HDMI Measurement
JP4	SHORT	I_VDDIODDR_MPU Measurement
JP5	SHORT	I_VDDCORE Measurement
JP6	SHORT	I_VDDBU Measurement
JP7	OPEN	Disable CS SPI&Nand Flash Memory
JP8	DNP	CS SPI Flash Memory



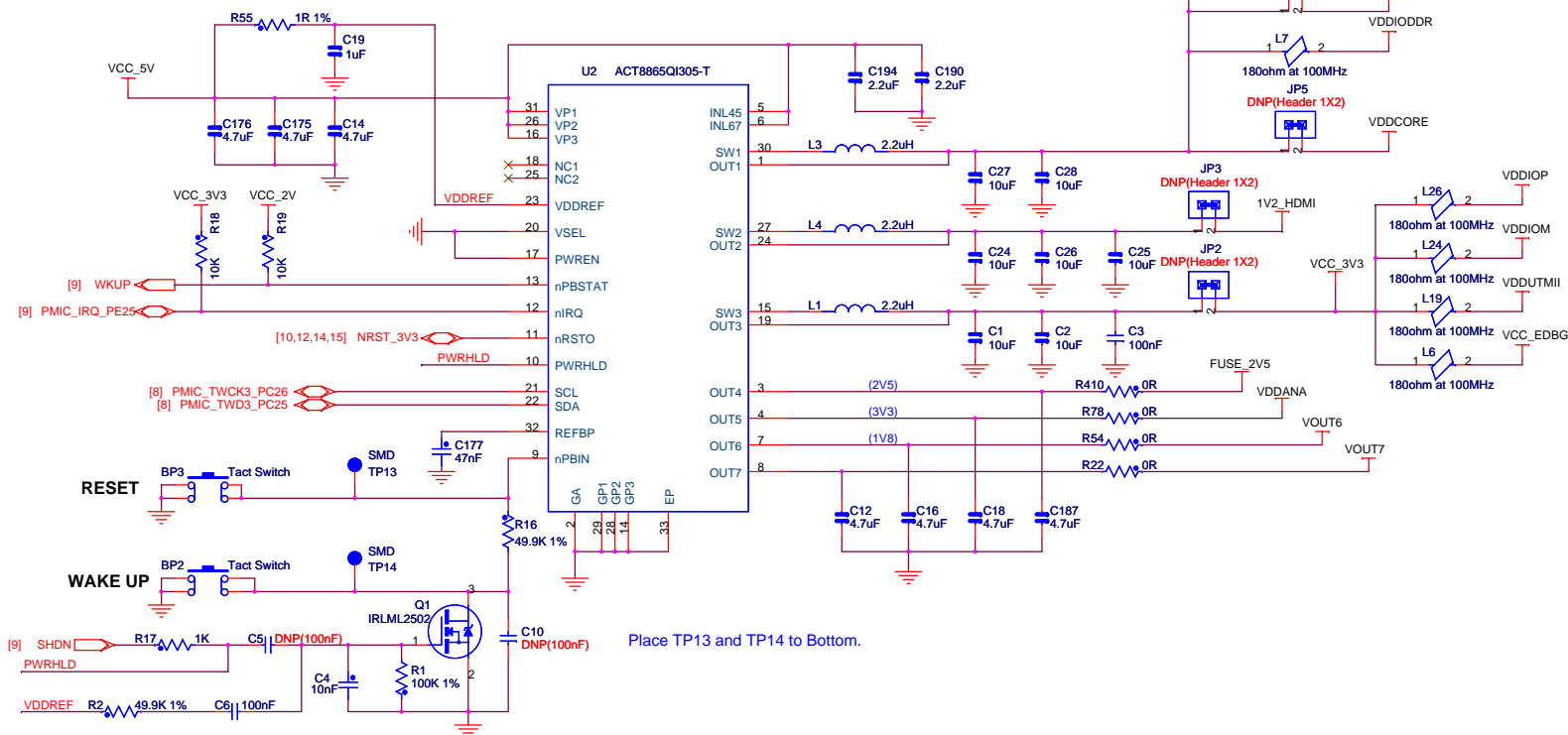
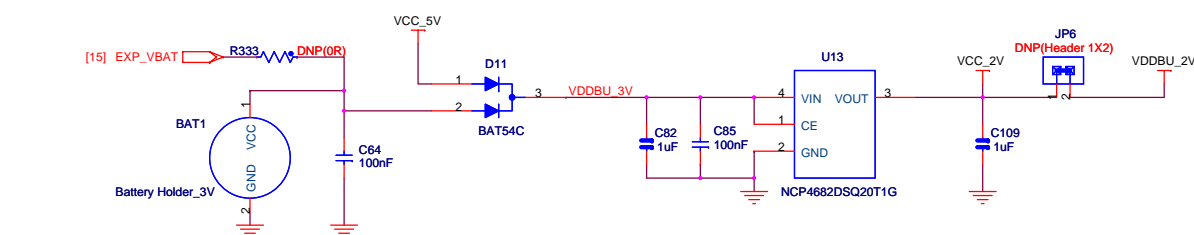
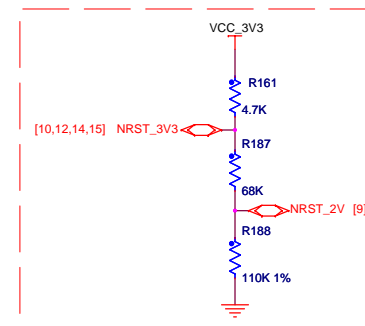
SAMA5D4-XULT

PIO Muxing

RevA	XinJQ	11-Oct-14	XXX	XX-XX-XX
INIT EDIT	DES.	DATE	VER.	DATE
SCALE	1/1		A	SHEET 3/15



## RESET



PCB1  
SAMA5D4-XULT PCB

Atmel		RevA	XinJQ	11-Oct-14	XXX	XX-XX-XX
		INIT EDIT	XinJQ	29-Aug-14	XXX	XX-XX-XX
SAMA5D4-XULT		SCALE	1/1	REV.	A	SHEET
Power Supply		4/15				

TP11 SMD

TP12 SMD

TP10 SMD

VCC\_5V TP9 SMD

VCC\_3V3 TP3 SMD

VDDBU\_2V TP15 SMD

VCC\_1V8 TP17 SMD

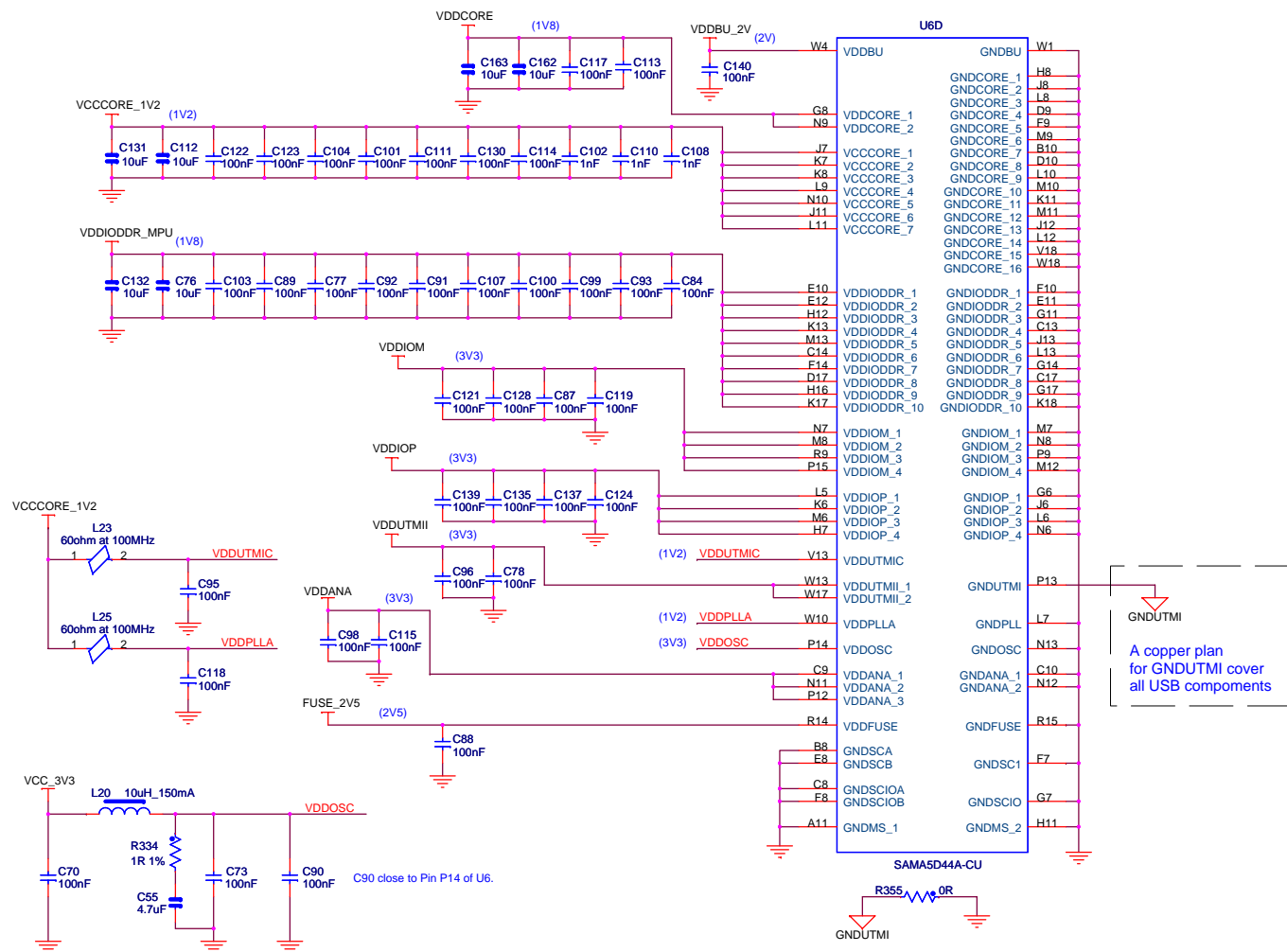
VCCORE\_1V2 TP16 SMD

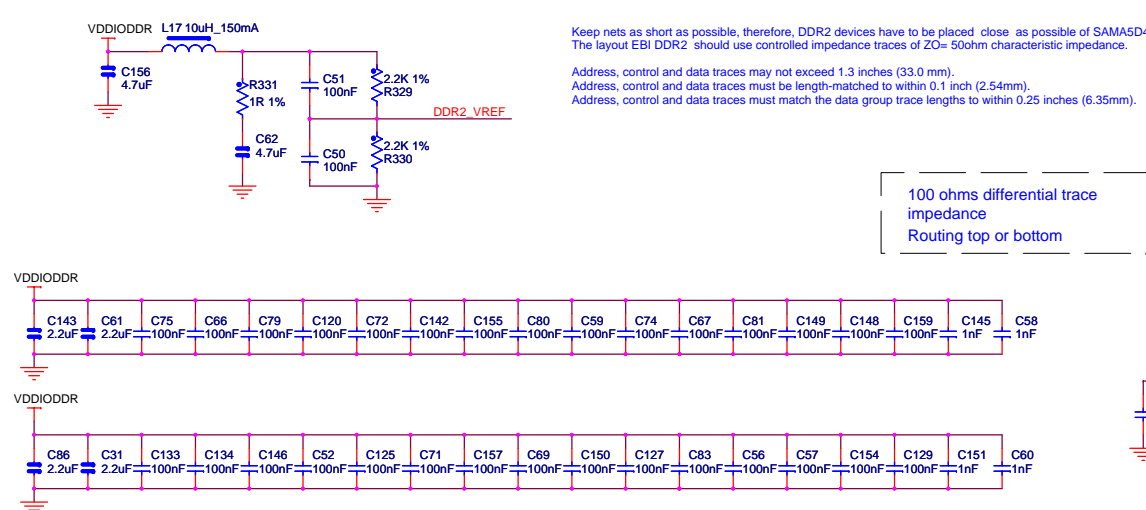
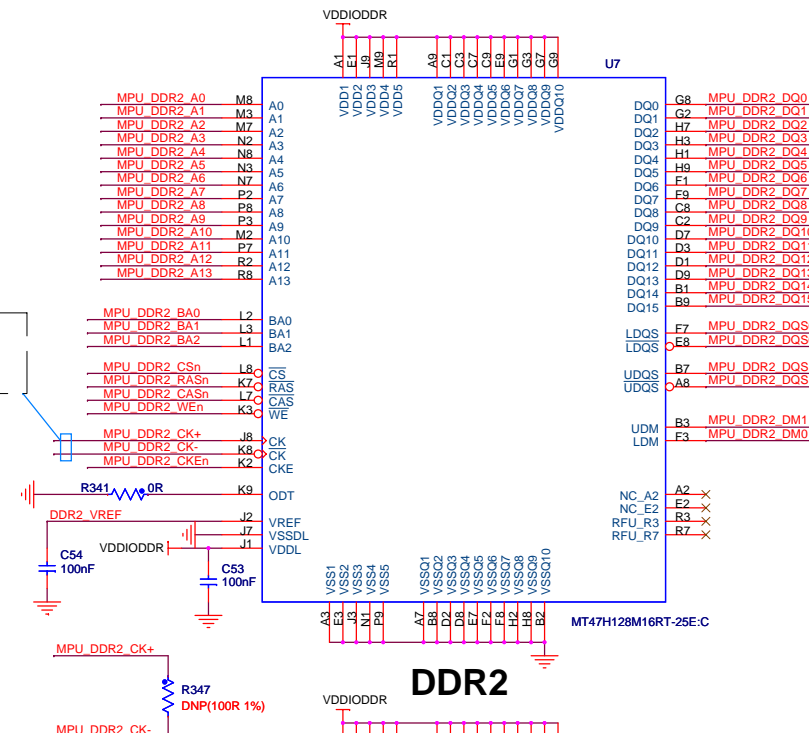
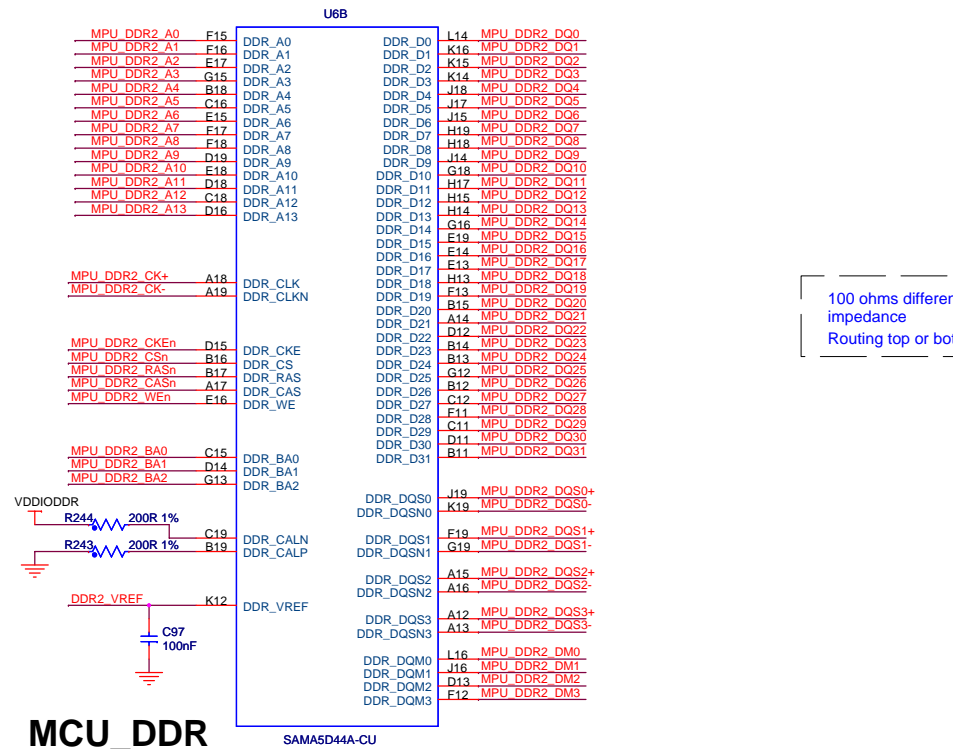
FUSE\_2V5 TP18 SMD

VCC\_EDBG TP8 SMD

VOUT6 TP5 SMD

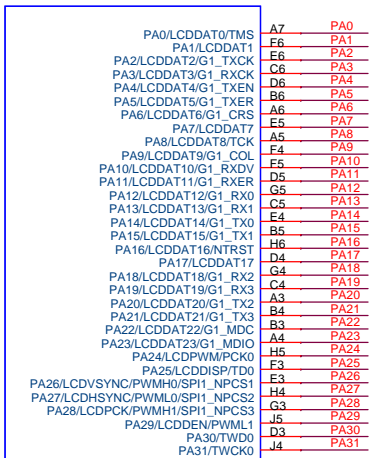
VOUT7 TP4 SMD





## PIOA

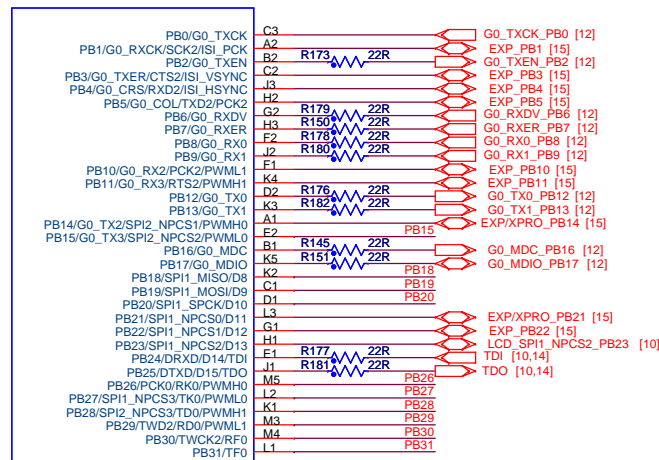
U6A



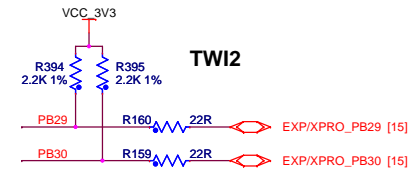
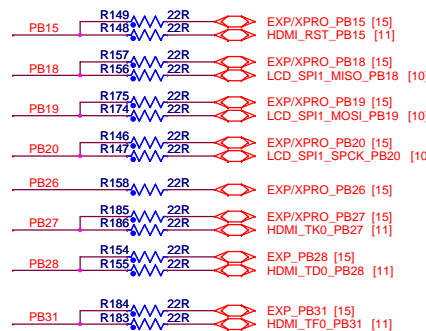
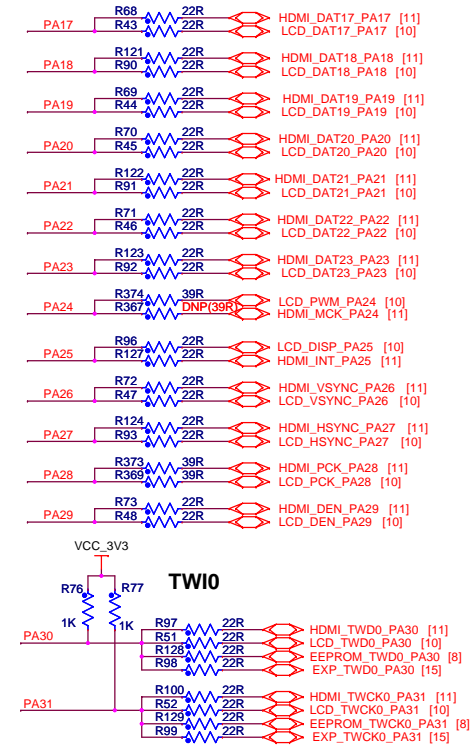
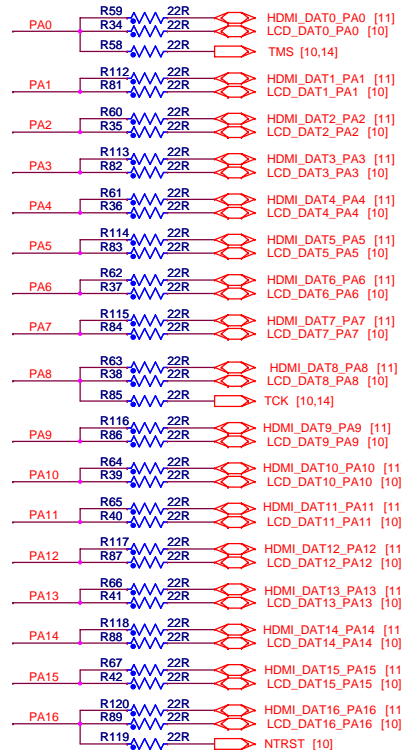
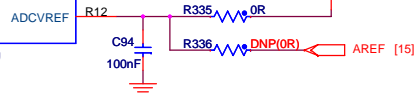
SAMA5D44A-CU

## PIOB

U6E



SAMA5D44A-CU



Atmel					
SAMA5D4-XULT		SCALE 1/1		REV. A	
SAMA5D44- PIOA & PIOB				SHEET 7/15	

RevA	XinJQ	11-Oct-14	XXX	XX-XX-XX
INIT EDIT	XinJQ	29-Aug-14	XXX	XX-XX-XX
REV	MODIF.	DES.	DATE	VER.
				DATE

## U6F



The jumper JP7 must be populated near the reset button

## VCC\_3V3\_EEPROM

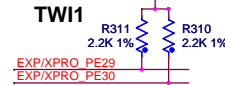




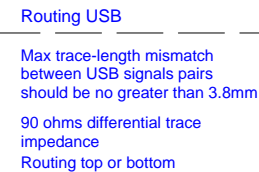
## U6G






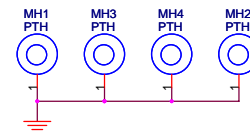
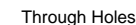
## U6H

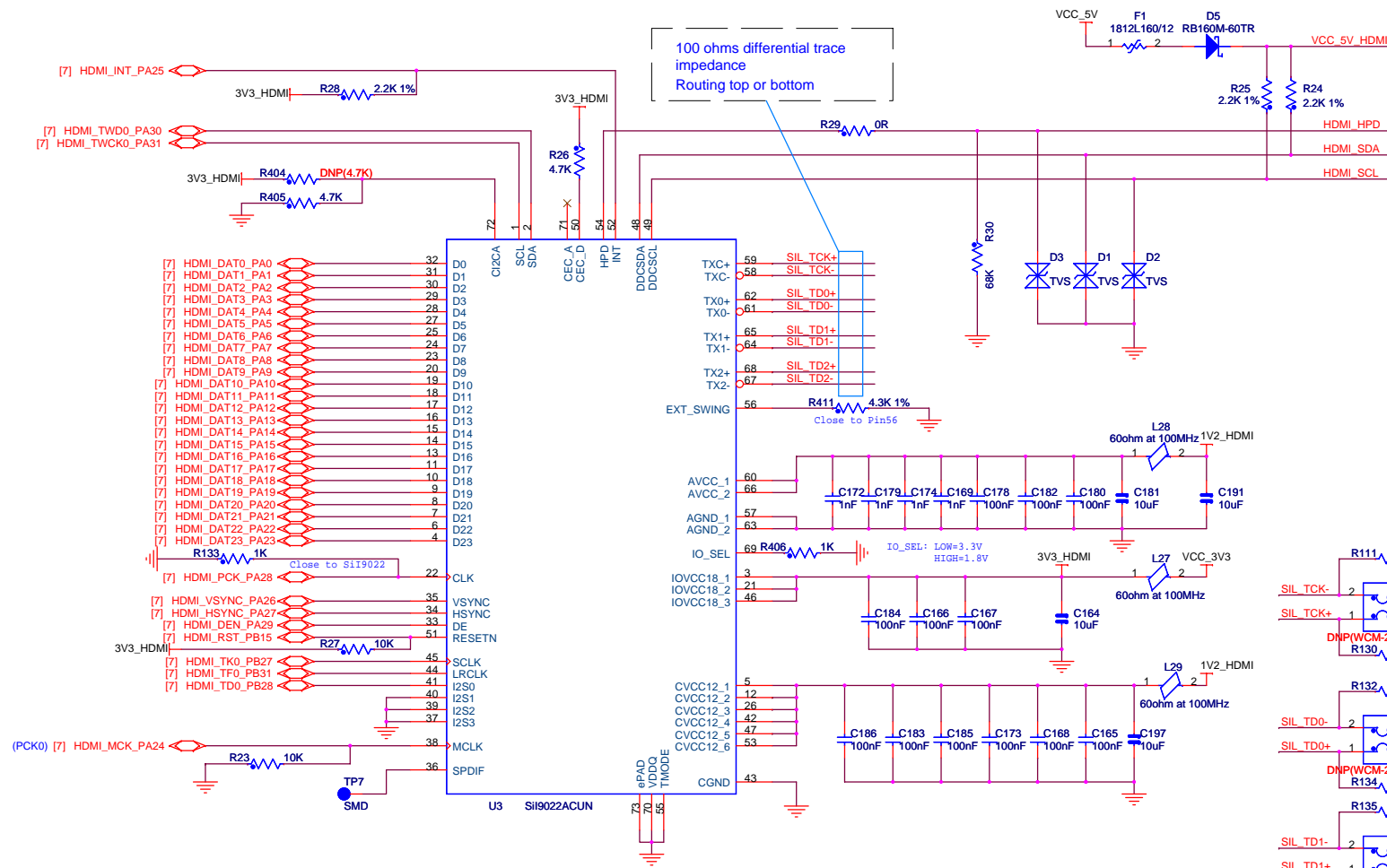


## U6C



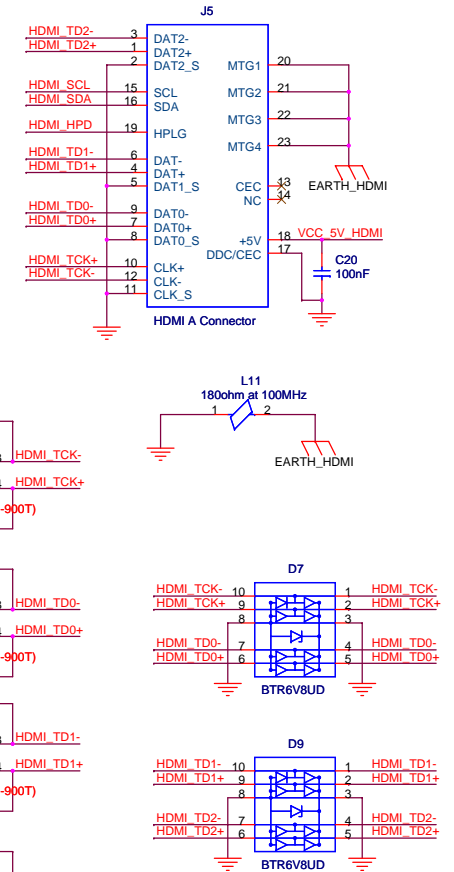
 <b>SAMA5D4-XULT</b> <b>SAMA5D44- SYS &amp; PIOD &amp; PIQE</b>	A	RevA	XinJQ	11-Oct-14	XXX	XX-XX-XX
	REV	INP 6 F MODIF.	XX	29-Aug-14	XX-XX-XX	XX-XX-XX
	SCALE	1/1	DES.	DATE	VER.	DATE
	 				REV. <b>A</b>	SHEET 9/15





## HDMI

### HDMI Type A Connector



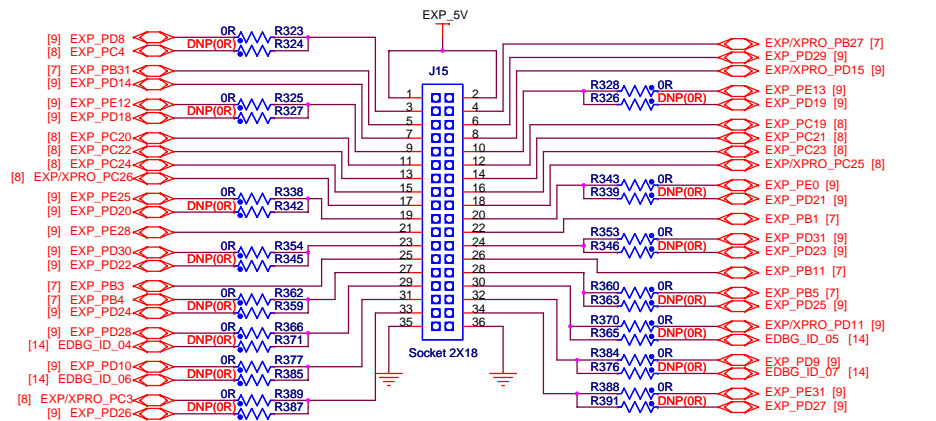
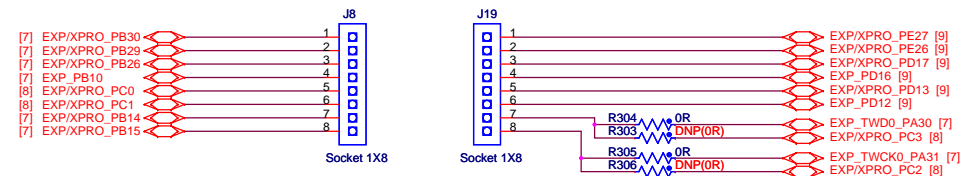
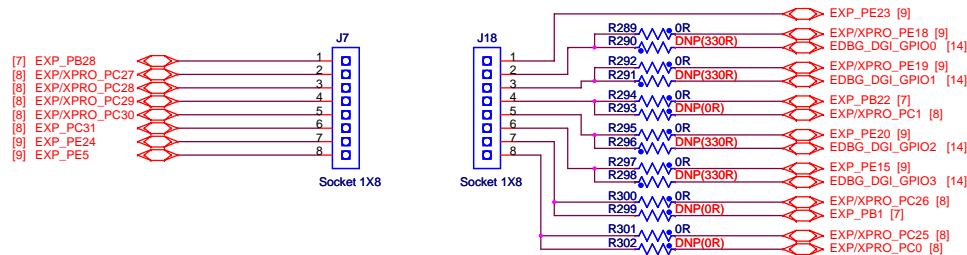
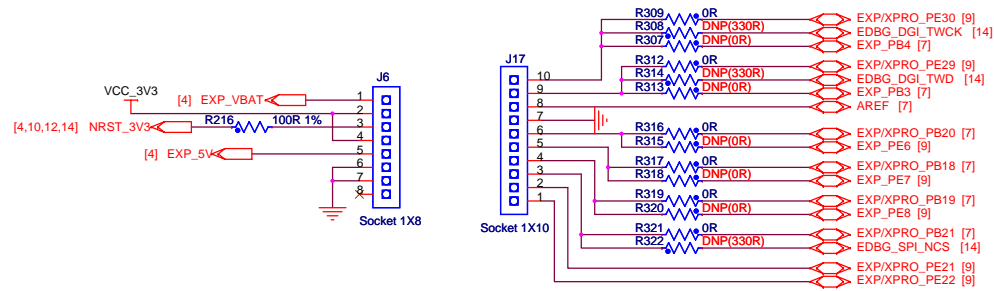
Atmel							
SAMA5D4-XULT		RevA	XinJQ	11-Oct-14	XXX	XX-XX-XX	
HDMI		INIT EDIT	DES.	DATE	VER.	XX-XX-XX	
SCALE 1/1				REV. A		SHEET 11/15	



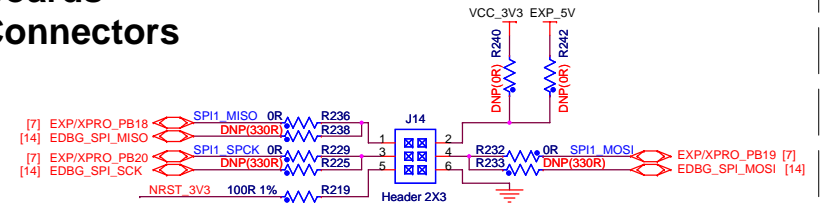


## Micro SD CARD INTERFACE - MCI0

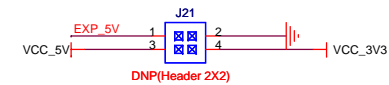




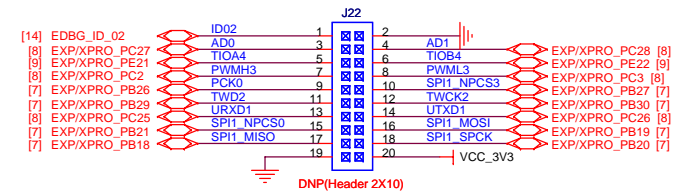
## Expansion Boards Connectors



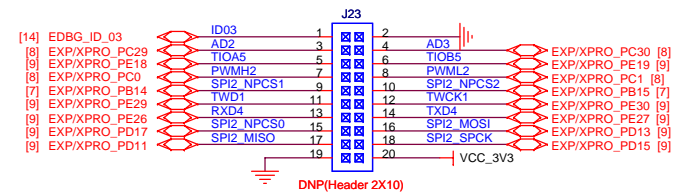
### XPRO Power



### XPRO EXT1



### XPRO EXT2



## XPRO Connectors

Atmel							
SAMA5D4-XULT		RevA		XinJQ	11-Oct-14	XXX	XX-XX-XX
Expansion & XPRO Connectors		INIT EDIT		XinJQ	28-Jul-14	XXX	XX-XX-XX
		REV MODIF.		DES.		VER.	DATE
		SCALE 1/1				REV. A	SHEET 15/15
		