

COVER PAGE

SAM9-CM Variant: [No Variations]

12/10/2026
2.2

SoM with Microchip AT91SAM9x5

GIT Revision:
233922679b070b7ae5d34e07ec359c4f8baf00dd

Release notes to v2.2:
- migrated to Altium
- removed J1 and J2, used to prevent boot from NAND and SPI Flash
- add J1, D3, U11, U12 to prvent boot from NAND and SPI Flash

Release notes to v2.1:
- added R52 - 1.5k pulldown for TST
- added R55 - 100k pullup for NRST
- added R53, C43 - RC filter for DDR_VREF
- added R30, R51 - serial to USBC
- added U10 - 1.0V Linear for PLL and UTMIC
- added R56 - serial to DS2431P+
- added RR24, RR25 - serial to SPI Flash

J1 function:
OPEN - normal boot from NAND or SPI Flash
CLOSED - prevent booting fron NAND and SPI Flash
and start the internal boot loader

PCB1

PCB

FR4, ENIG, 1.0mm THICKNESS, GREEN SOLDER MASK

PCB_SAM9-CM v2.2

LAYOUT NOTE:
Impedance Tolerance: +/- 10%
42R: 37.8R - 46.2R
85R: 76.5R - 93.5R

DESIGN CONSIDERATIONS

DESIGN NOTE:
Example text for informational
design notes.

DESIGN NOTE:
Example text for critical
design notes.

LAYOUT NOTE:
Example text for critical
layout guidelines.

Mounting Holes

Place on upper egdes, 3mm from the board outline,
29mm from the bottom border

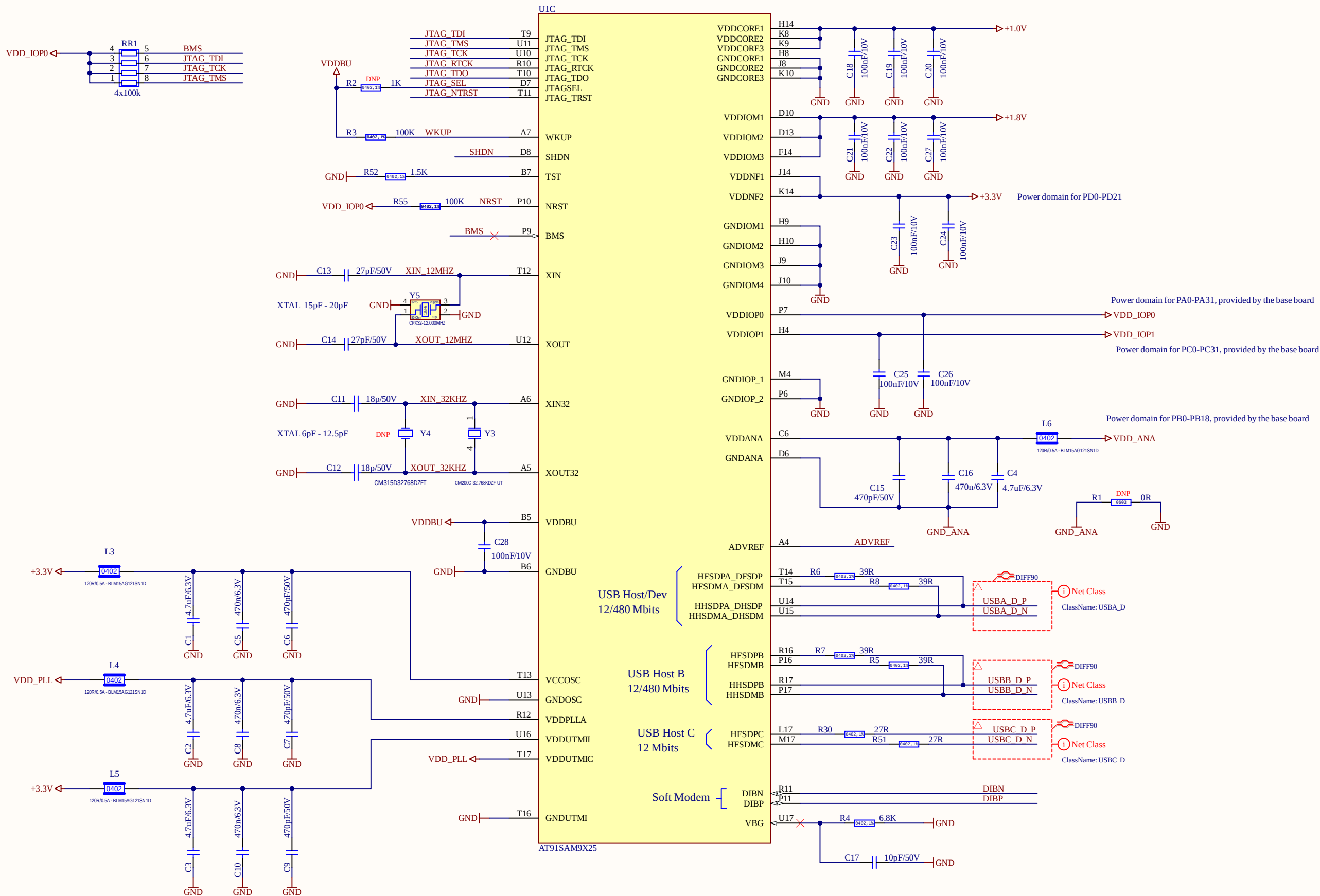


FID_1MM_SMALL FID_1MM_SMALL FID_1MM_SMALL FID_1MM_SMALL

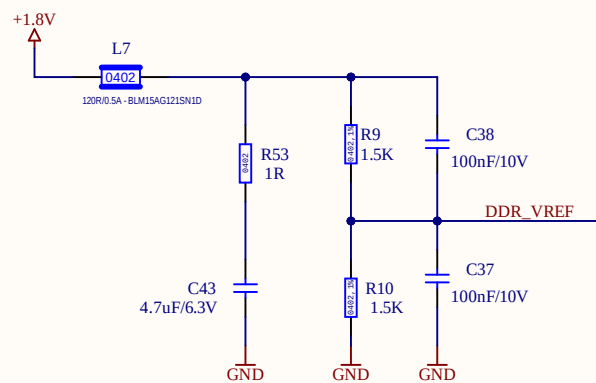
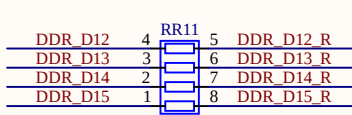
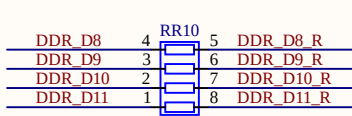
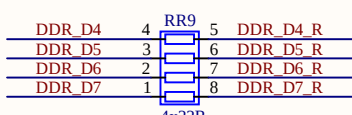
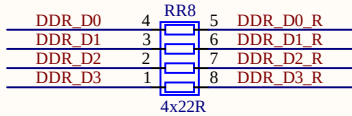
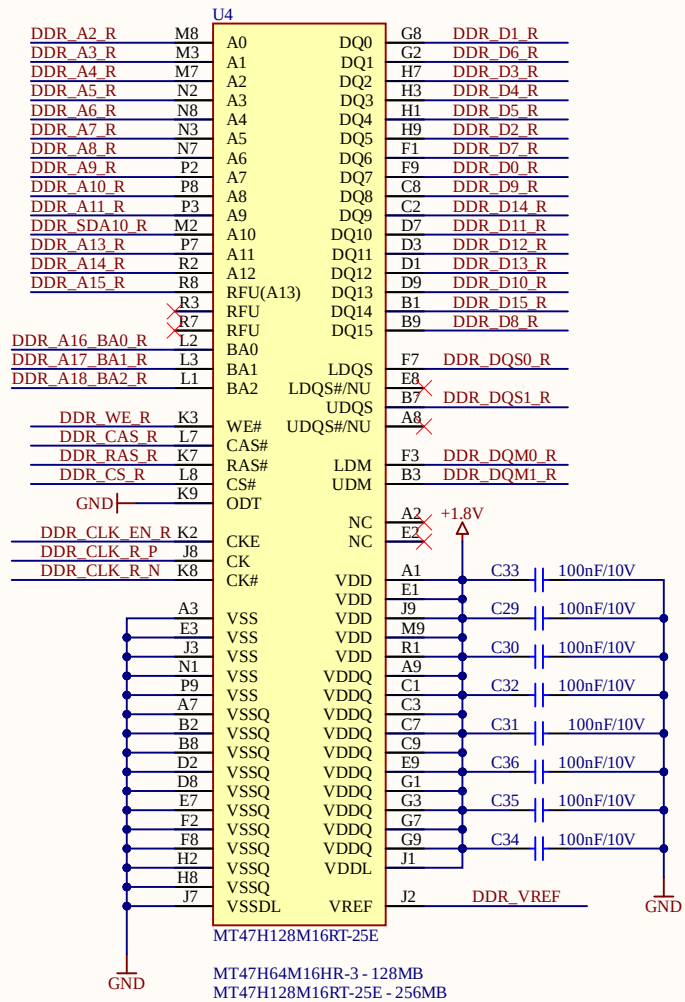
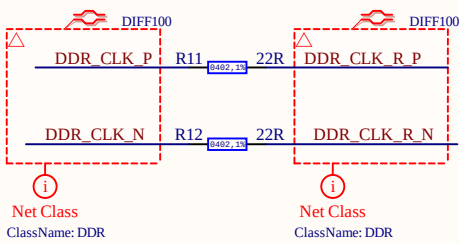
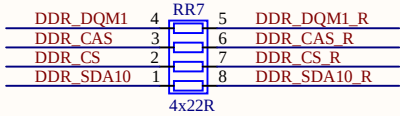
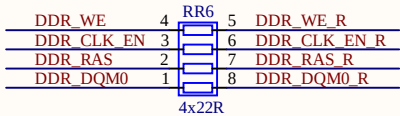
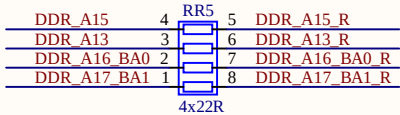
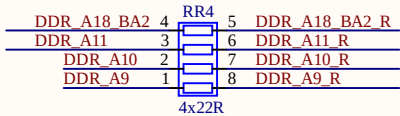
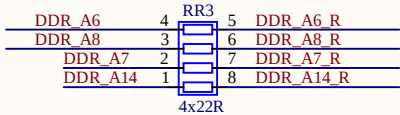
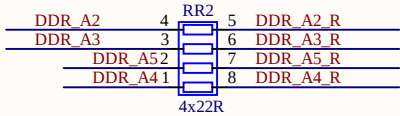
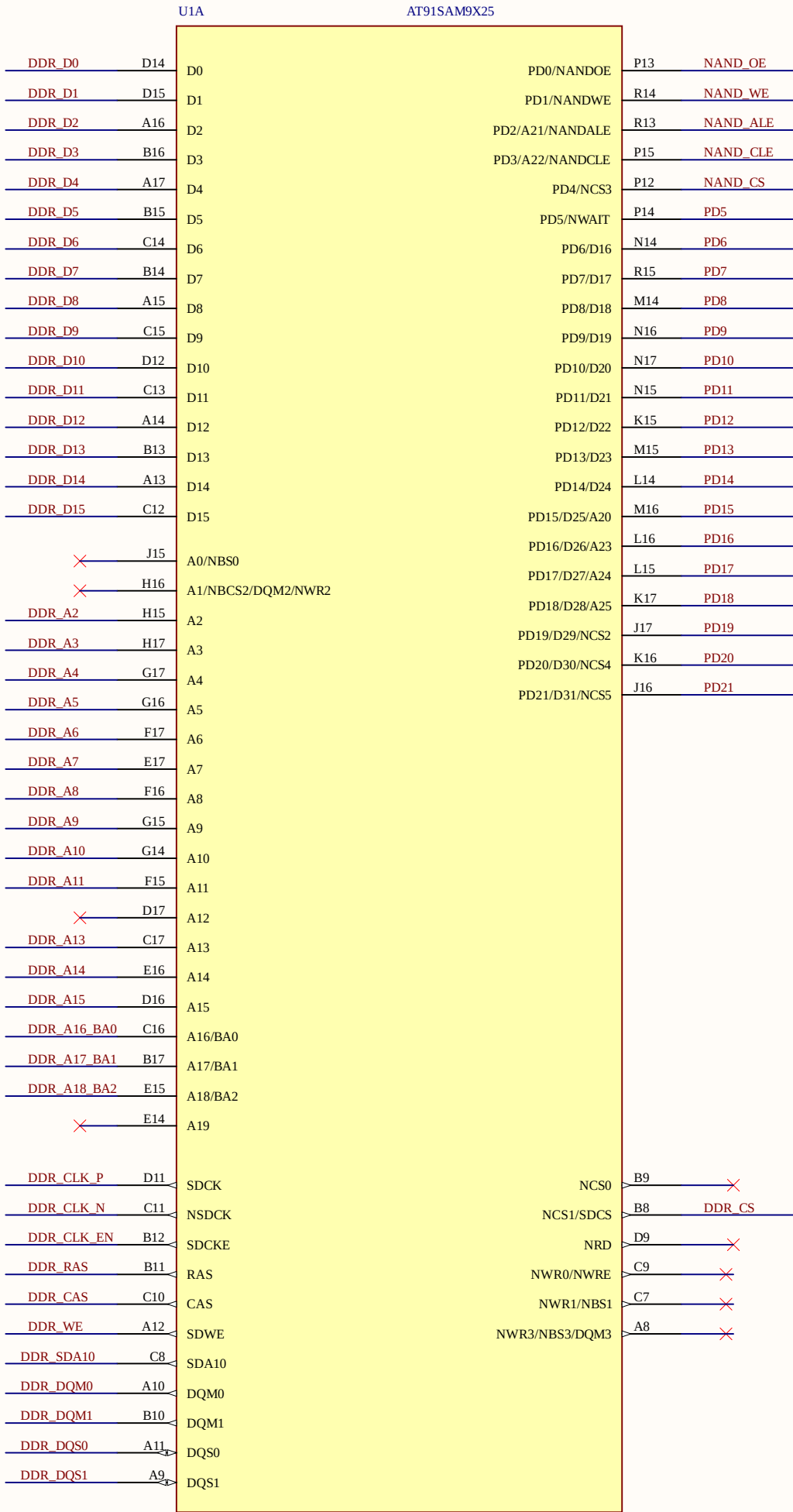
Place diagonally opposite two fiducial marks on each side

Title COVER PAGE			Ronetix GmbH Seeadlerweg 29 1220 Vienna Austria	
Size: A3	Number: 1	Revision: 2.2		
Date: 12/10/2026	Time: 17:01:45	Sheet 1 of 8		
File: 00_Title_Page.SchDoc				

CPU Power, Control and USB



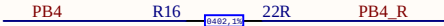
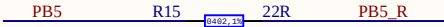
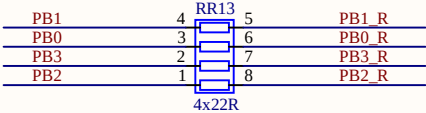
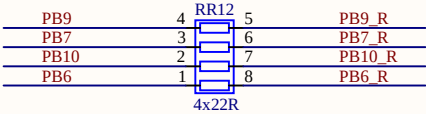
DDR2



CPU I/O

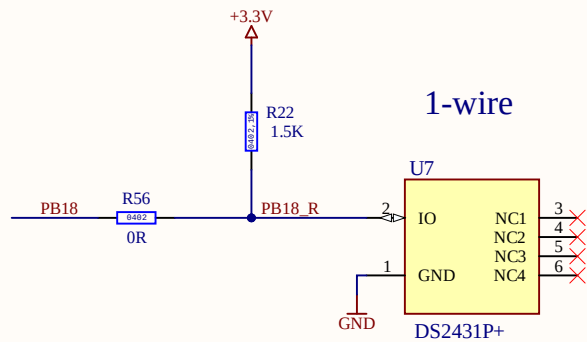
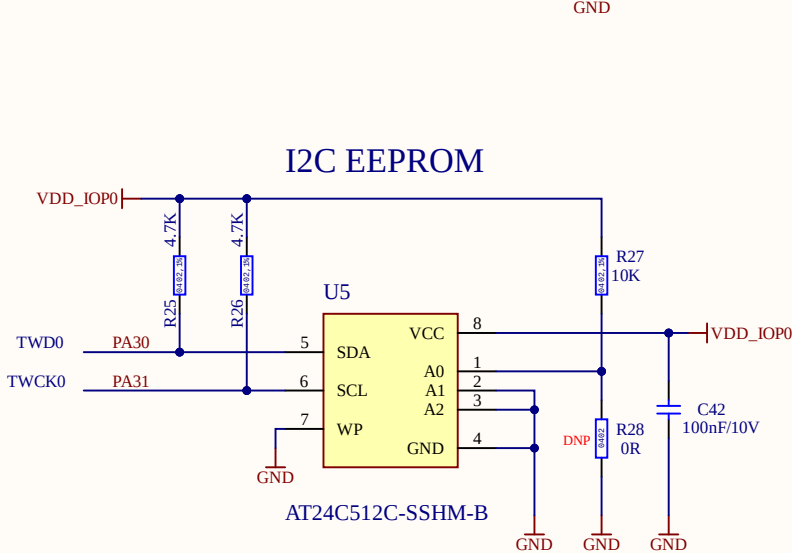
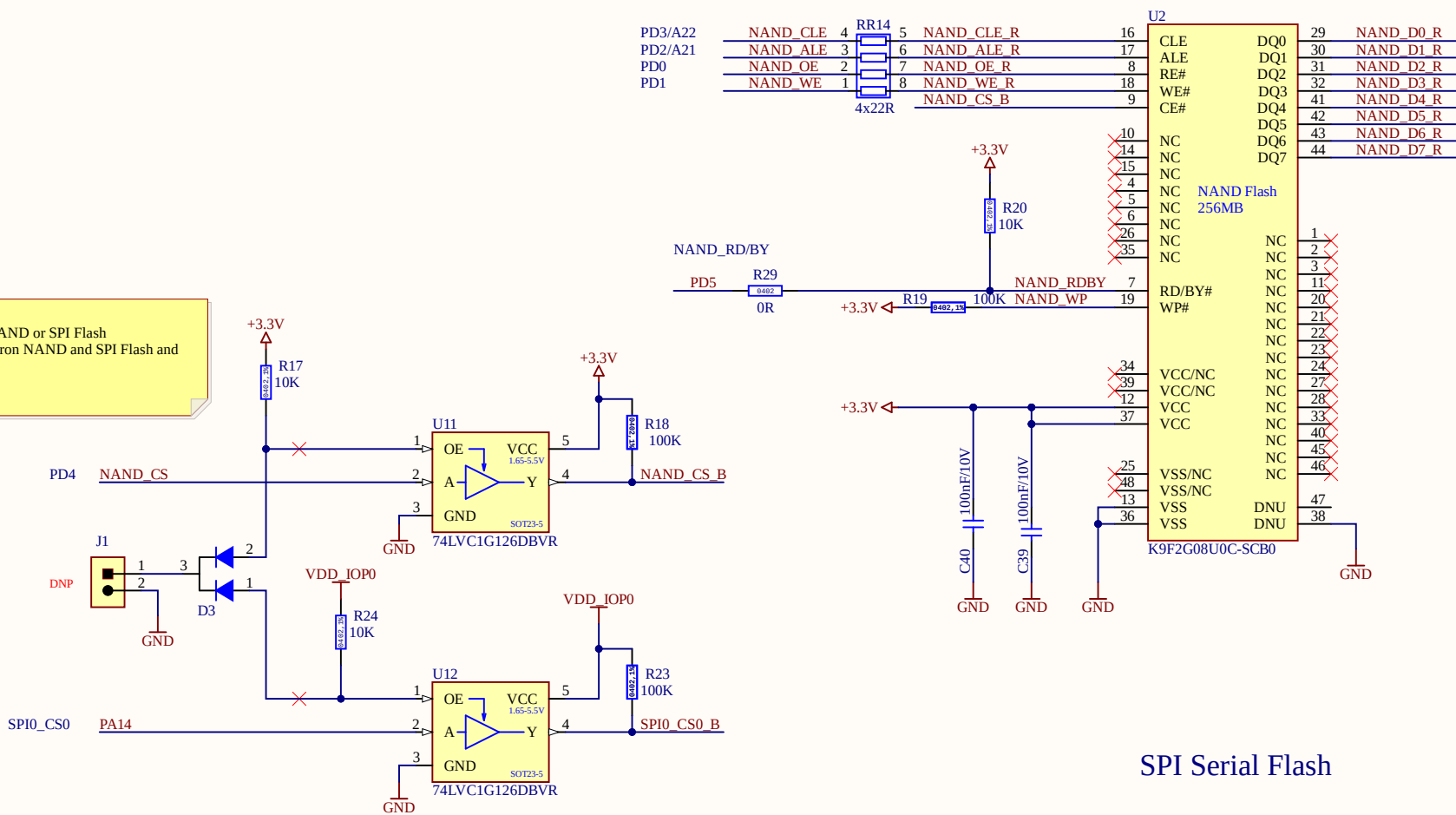
U1B		AT91SAM9X25	
PA0	L3	PA0/TXD0/SPI1_NPCS1	PB0/E0_ERX0/RTS2
PA1	P1	PA1/RXD0/SPI0_NPCS2	PB1/E0_ERX1/CTS2
PA2	L4	PA2/RTS0/MCI1_DA1/E0_ETX0	PB2/E0_ERXER/SCK2
PA3	N4	PA3/CTS0/MCI1_DA2/E0_ETX1	PB3/E0_ERXDV/SPI0_NPCS3
PA4	T3	PA4/SCK0/MCI1_DA3/E0_ETXER	PB4/E0_ETXCK/TWD2
PA5	R1	PA5/TXD1/CANTX1	PB5/E0_EMDIO/TWCK2
PA6	R4	PA6/RXD1/CANRX1	PB6/AD7/E0_EMDC
PA7	R3	PA7/TXD2/SPI0_NPCS1	PB7/AD8/E0_ETXEN
PA8	P4	PA8/RXD2/SPI1_NPCS0	PB8/AD9/E0_ETXER
PA9	U3	PA9/DRXD/CANRX0	PB9/AD10/E0_ETX0/PCK1
PA10	T1	PA10/DTXD/CANTX0	PB10/AD11/E0_ETX1/PCK0
PA11	U1	PA11/SPI0_MISO/MCI1_DA0	PB11/AD0/E0_ETX2/PWM0
PA12	T2	PA12/SPI0_MOSI/MCI1_CDA	PB12/AD1/E0_ETX3/PWM1
PA13	T4	PA13/SPI0_SPCK/MCI1_CK	PB13/AD2/E0_ERX2/PWM2
PA14	U2	PA14/SPI0_NPCS0	PB14/AD3/E0_ERX3/PWM3
PA15	U4	PA15/MCI0_DA0	PB15/AD4/E0_ERXCK
PA16	P5	PA16/MCI0_CDA	PB16/AD5/E0_ECRS
PA17	R5	PA17/MCI0_CK	PB17/AD6/E0_ECOL
PA18	U5	PA18/MCI0_DA1	PB18/IRQ/ADTRG
PA19	T5	PA19/MCI0_DA2	
PA20	U6	PA20/MCI0_DA3	PC0/LCDDAT0/ISI_D0/TWD1
PA21	T6	PA21/TIOA0/SPI1_MISO	PC1/LCDDAT1/ISI_D1/TWCK1
PA22	R6	PA22/TIOA1/SPI1_MOSI	PC2/LCDDAT2/ISI_D2/TIOA3
PA23	U7	PA23/TIOA2/SPI1_SPCK	PC3/LCDDAT3/ISI_D3/TIOB3
PA24	T7	PA24/TCLK0/TK	PC4/LCDDAT4/ISI_D4/TCLK3
PA25	T8	PA25/TCLK1/TF	PC5/LCDDAT5/ISI_D5/TIOA4
PA26	R7	PA26/TCLK2/TD	PC6/LCDDAT6/ISI_D6/TIOB4
PA27	P8	PA27/TIOB0/RD	PC7/LCDDAT7/ISI_D7/TCLK4
PA28	U8	PA28/TIOB1/RK	PC8/LCDDAT8/ISI_D8/UTXD0
PA29	R9	PA29/TIOB2/RF	PC9/LCDDAT9/ISI_D9/URXD0
PA30	R8	PA30/TWD0/SPI1_NPCS3/E0_EMDC	PC10/LCDDAT10/ISI_D10/PWM0
PA31	U9	PA31/TWCK0/SPI1_NPCS2/E0_ETXEN	PC11/LCDDAT11/ISI_D11/PWM1
			PC12/LCDDAT12/ISI_PCK/TIOA5
			PC13/LCDDAT13/ISI_VSYNC/TIOB5
			PC14/LCDDAT14/ISI_HSYNC/TCLK5
			PC15/LCDDAT15/ISI_MCK/PCK0
			PC16/LCDDAT16/E1_RXER/UTXD1
			PC17/LCDDAT17/URXD1
			PC18/LCDDAT18/E1_TX0/PWM0
			PC19/LCDDAT19/E1_TX1/PWM1
			PC20/LCDDAT20/E1_RX0/PWM2
			PC21/LCDDAT21/E1_RX1/PWM3
			PC22/LCDDAT22/TXD3
			PC23/LCDDAT23/RXD3
			PC24/LCDDISP/RTS3
			PC25/CTS3
			PC26/LCDPWM/SCK3
			PC27/LCDVSYNC/E1_TXEN/RTS1
			PC28/LCDHSYNC/E1_CRSDV/CTS1
			PC29/LCDDEN/E1_TXCK/SCK1
			PC30/LCDPCK/E1_MDC
			PC31/FIQ/E1_MDIO/PCK1

NOTE 1:
Populate either this resistor group or all parts on page 6 - "ETH PHY"

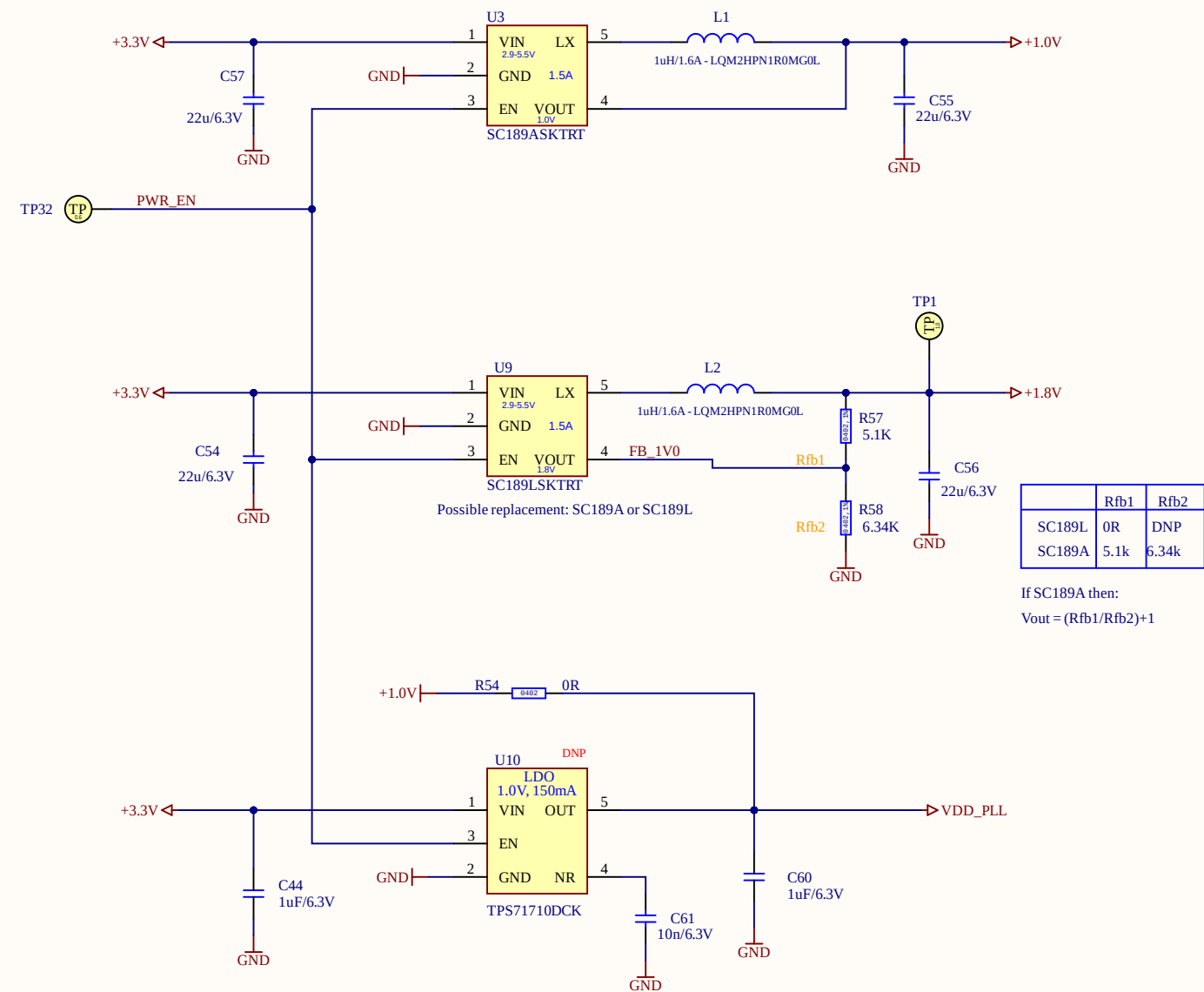


NAND Flash

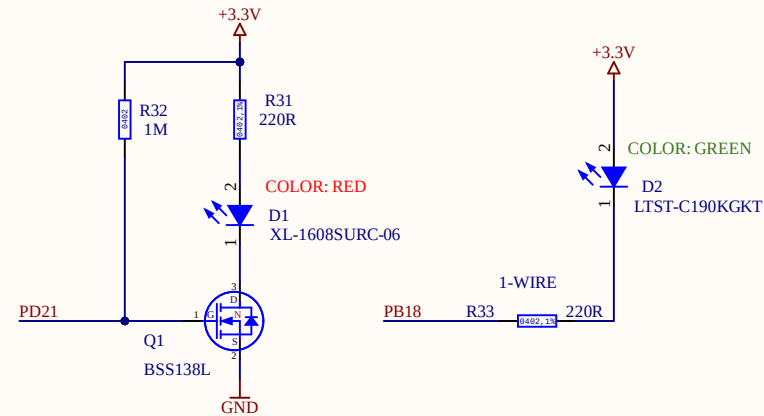
Usage of J1:
OPEN - normal boot from NAND or SPI Flash
CLOSED - prevent booting from NAND and SPI Flash and start the internal boot loader



Power Supply



User LEDs



Ethernet PHY 10/100, RMII

