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Revision History	
Rev.	Description
A00	Initial version.
A01	Silk screen change for J2, PIN#10

 SILICON LABS	Board Name EFR32MG24 Explorer Kit	
	Page Title Title Page	
Designed DDC	Approved RGU	Revision A01
Size A3	Sheet Modified Date Thursday, June 09, 2022	Board Number BRD2703A
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The image displays two PCB layout sections for the EFR32MG24 microcontroller. The left section, titled "EFR32MG24 Power Section", shows the power management circuitry. It includes a DC/DC Regulator (U1C) with pins for Reset, Digital Supply (VREGVDD), Analog Supply (AVDD), I/O Supply (IOVDD_0), VREFP, and VREFN. The circuit is powered by VMCU and VREFP, with various decoupling capacitors (C1-C17) and inductors (L1-L8) used for filtering and regulation. A reset button (SW1) is connected to the RESET pin. The right section, titled "EFR32MG24 RF Section", shows the RF circuitry. It includes a High Frequency Crystal (X1) and a 2.4 GHz matching network. The matching network consists of inductors (L1, L2, L3, L4, L5, L6, L7, L8) and capacitors (C1, C2, C3, C4, C5, C6, C7, C8, C9, C10, C11, C12, C13, C14, C15, C16, C17, C18, C19, C20, C21, C22, C23, C24, C25, C26, C27, C28, C29, C30, C31, C32, C33, C34, C35, C36, C37, C38, C39, C40, C41, C42, C43, C44, C45, C46, C47, C48, C49, C50, C51, C52, C53, C54, C55, C56, C57, C58, C59, C60, C61, C62, C63, C64, C65, C66, C67, C68, C69, C70, C71, C72, C73, C74, C75, C76, C77, C78, C79, C80, C81, C82, C83, C84, C85, C86, C87, C88, C89, C90, C91, C92, C93, C94, C95, C96, C97, C98, C99, C100). The RF section also includes a UFL connector (P901) and an antenna (ANT1).

The image displays two circuit diagrams for the EFR32MG24, labeled 'Power Section' and 'RF Section'.

Power Section: This diagram shows the power management circuitry. It includes a DC/DC Regulator (U1C) and a Digital Regulator (U1B). The DC/DC Regulator is connected to VDCDC and VREGVDD. The Digital Regulator is connected to VREGVDD and DVDD. The Digital Logic (U1B) is connected to AVDD and IOVDD_0. The Ground (U1B) is connected to VREGVSS and VSS_PAD. The diagram also shows various capacitors (C1, C2, C3, C4, C5, C6, C7, C8, C9, C10, C11, C12, C13, C14, C15, C16, C17, C18, C19) and inductors (L1, L2, L3, L4, L5, L6, L7, L8, L9, L10, L11, L12, L13, L14, L15, L16, L17, L18, L19, L20, L21, L22, L23, L24, L25, L26, L27, L28, L29, L30, L31, L32, L33, L34, L35, L36, L37, L38, L39, L40, L41, L42, L43, L44, L45, L46, L47, L48, L49, L50, L51, L52, L53, L54, L55, L56, L57, L58, L59, L60, L61, L62, L63, L64, L65, L66, L67, L68, L69, L70, L71, L72, L73, L74, L75, L76, L77, L78, L79, L80, L81, L82, L83, L84, L85, L86, L87, L88, L89, L90, L91, L92, L93, L94, L95, L96, L97, L98, L99, L100) and other components like SW1 (PTS810) and R1 (100R).

RF Section: This diagram shows the RF circuitry. It includes a High Frequency Crystal (X1) and a 2.4 GHz matching network. The High Frequency Crystal is connected to HFXTAL_I and HFXTAL_O. The 2.4 GHz matching network is connected to RFVDD and RFVSS. The diagram also shows various capacitors (C1, C2, C3, C4, C5, C6, C7, C8, C9, C10, C11, C12, C13, C14, C15, C16, C17, C18, C19, C20, C21, C22, C23, C24, C25, C26, C27, C28, C29, C30, C31, C32, C33, C34, C35, C36, C37, C38, C39, C40, C41, C42, C43, C44, C45, C46, C47, C48, C49, C50, C51, C52, C53, C54, C55, C56, C57, C58, C59, C60, C61, C62, C63, C64, C65, C66, C67, C68, C69, C70, C71, C72, C73, C74, C75, C76, C77, C78, C79, C80, C81, C82, C83, C84, C85, C86, C87, C88, C89, C90, C91, C92, C93, C94, C95, C96, C97, C98, C99, C100) and inductors (L1, L2, L3, L4, L5, L6, L7, L8, L9, L10, L11, L12, L13, L14, L15, L16, L17, L18, L19, L20, L21, L22, L23, L24, L25, L26, L27, L28, L29, L30, L31, L32, L33, L34, L35, L36, L37, L38, L39, L40, L41, L42, L43, L44, L45, L46, L47, L48, L49, L50, L51, L52, L53, L54, L55, L56, L57, L58, L59, L60, L61, L62, L63, L64, L65, L66, L67, L68, L69, L70, L71, L72, L73, L74, L75, L76, L77, L78, L79, L80, L81, L82, L83, L84, L85, L86, L87, L88, L89, L90, L91, L92, L93, L94, L95, L96, L97, L98, L99, L100).

EFR32MG24 I/O & Signal Assignments

U1A EFR32MG24B210F1536IM48

PA/PB Pins:

- PA00 - EFR32_PA00 -> EFR32_PA0[9..0]
- PA01 - EFR32_PA01
- PA02 - EFR32_PA02
- PA03 - EFR32_PA03
- PA04 - EFR32_PA04
- PA05 - EFR32_PA05
- PA06 - EFR32_PA06
- PA07 - EFR32_PA07
- PA08 - EFR32_PA08
- PA09 - EFR32_PA09
- PB00 - EFR32_PB00 -> EFR32_PB0[5..0]
- PB01 - EFR32_PB01
- PB02 - EFR32_PB02
- PB03 - EFR32_PB03
- PB04 - EFR32_PB04
- PB05 - EFR32_PB05

PC/PD Pins (Left):

- PC00 - EFR32_PC00 -> EFR32_PC0[9..0]
- PC01 - EFR32_PC01
- PC02 - EFR32_PC02
- PC03 - EFR32_PC03
- PC04 - EFR32_PC04
- PC05 - EFR32_PC05
- PC06 - EFR32_PC06
- PC07 - EFR32_PC07
- PC08 - EFR32_PC08
- PC09 - EFR32_PC09
- PD00 - EFR32_PD00 -> 32.768 kHz (X2)
- PD01 - EFR32_PD01
- PD02 - EFR32_PD02
- PD03 - EFR32_PD03
- PD04 - EFR32_PD04

PC/PD Pins (Middle):

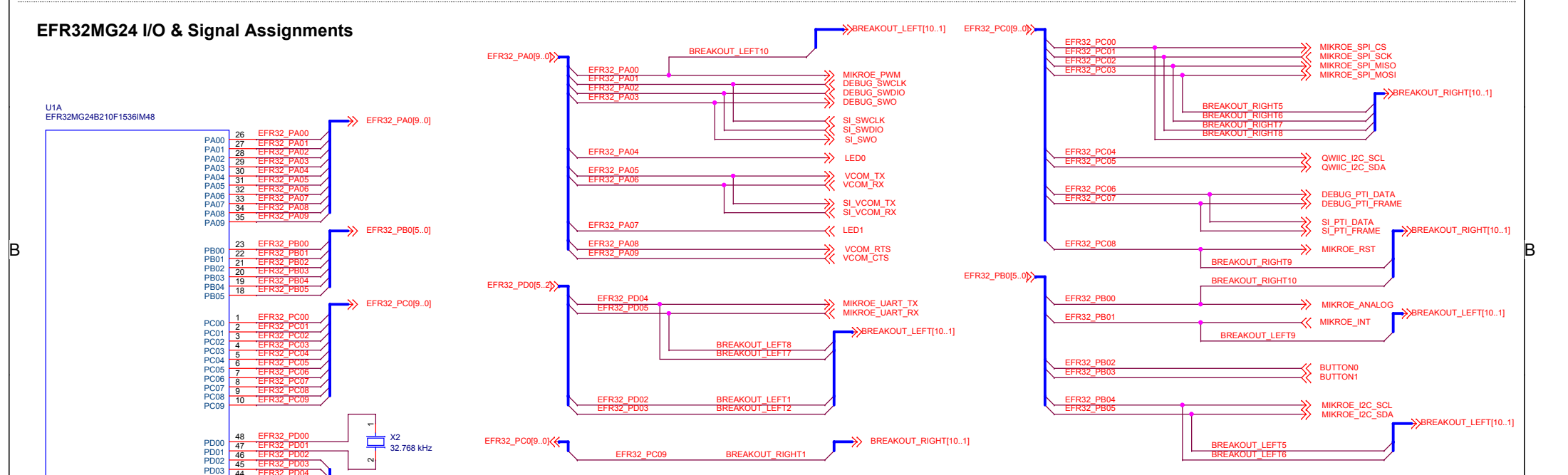
- EFR32_PA00 -> MIKROE_PWM
- EFR32_PA01 -> DEBUG_SWCLK
- EFR32_PA02 -> DEBUG_SWCLK
- EFR32_PA03 -> DEBUG_SWCLK
- EFR32_PA04 -> SI_SWCLK
- EFR32_PA05 -> SI_SWCLK
- EFR32_PA06 -> SI_SWCLK
- EFR32_PA07 -> LED0
- EFR32_PA08 -> VCOM_TX
- EFR32_PA09 -> VCOM_RX
- EFR32_PB00 -> LED1
- EFR32_PB01 -> VCOM_TX
- EFR32_PB02 -> VCOM_RX
- EFR32_PB03 -> VCOM_TX
- EFR32_PB04 -> VCOM_RX
- EFR32_PB05 -> VCOM_TX
- EFR32_PC00 -> MIKROE_UART_TX
- EFR32_PC01 -> MIKROE_UART_RX
- EFR32_PC02 -> MIKROE_UART_TX
- EFR32_PC03 -> MIKROE_UART_RX
- EFR32_PC04 -> MIKROE_UART_TX
- EFR32_PC05 -> MIKROE_UART_RX
- EFR32_PC06 -> MIKROE_UART_TX
- EFR32_PC07 -> MIKROE_UART_RX
- EFR32_PC08 -> MIKROE_UART_TX
- EFR32_PC09 -> MIKROE_UART_RX
- EFR32_PD00 -> MIKROE_UART_TX
- EFR32_PD01 -> MIKROE_UART_RX
- EFR32_PD02 -> MIKROE_UART_TX
- EFR32_PD03 -> MIKROE_UART_RX
- EFR32_PD04 -> MIKROE_UART_TX
- EFR32_PD05 -> MIKROE_UART_RX

PC/PD Pins (Right):

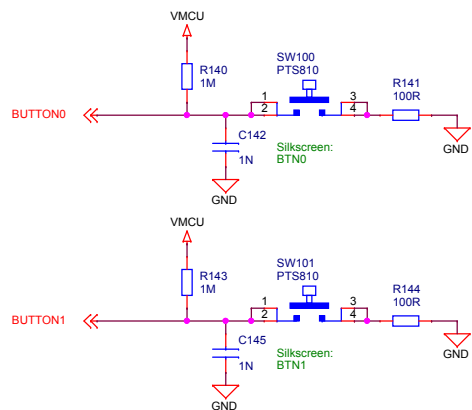
- EFR32_PC00 -> MIKROE_SPI_CS
- EFR32_PC01 -> MIKROE_SPI_SCK
- EFR32_PC02 -> MIKROE_SPI_MISO
- EFR32_PC03 -> MIKROE_SPI_MOSI
- EFR32_PC04 -> QWIIIC_I2C_SCL
- EFR32_PC05 -> QWIIIC_I2C_SDA
- EFR32_PC06 -> DEBUG_PTI_DATA
- EFR32_PC07 -> DEBUG_PTI_FRAME
- EFR32_PC08 -> SI_PTI_DATA
- EFR32_PC09 -> SI_PTI_FRAME
- EFR32_PB00 -> MIKROE_RST
- EFR32_PB01 -> MIKROE_ANALOG
- EFR32_PB02 -> MIKROE_INT
- EFR32_PB03 -> BUTTON0
- EFR32_PB04 -> BUTTON1
- EFR32_PB05 -> MIKROE_I2C_SCL
- EFR32_PC00 -> MIKROE_I2C_SDA

Breakout Board Connections:

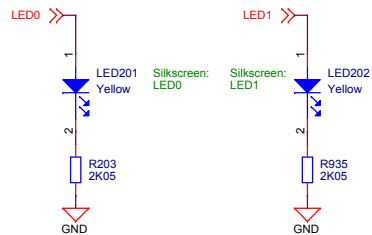
- BREAKOUT_LEFT10 -> EFR32_PA0[9..0]
- BREAKOUT_RIGHT10 -> EFR32_PB0[5..0]
- BREAKOUT_LEFT10 -> EFR32_PC0[9..0]
- BREAKOUT_RIGHT10 -> EFR32_PB0[5..0]
- BREAKOUT_LEFT10 -> EFR32_PC0[9..0]
- BREAKOUT_RIGHT10 -> EFR32_PB0[5..0]
- BREAKOUT_LEFT10 -> EFR32_PC0[9..0]
- BREAKOUT_RIGHT10 -> EFR32_PB0[5..0]
- BREAKOUT_LEFT10 -> EFR32_PC0[9..0]
- BREAKOUT_RIGHT10 -> EFR32_PB0[5..0]



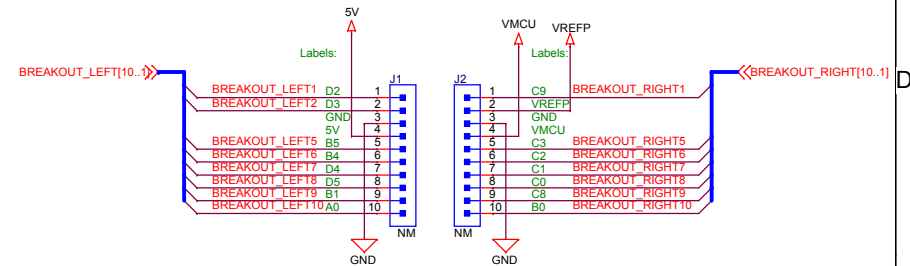
Push Buttons



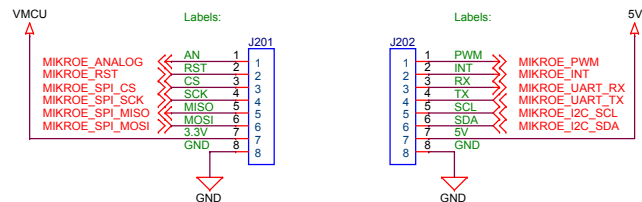
RGB LED



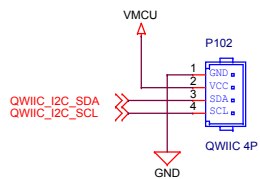
Breakout Pads




MikroE Socket



Qwiic Connector



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D



B



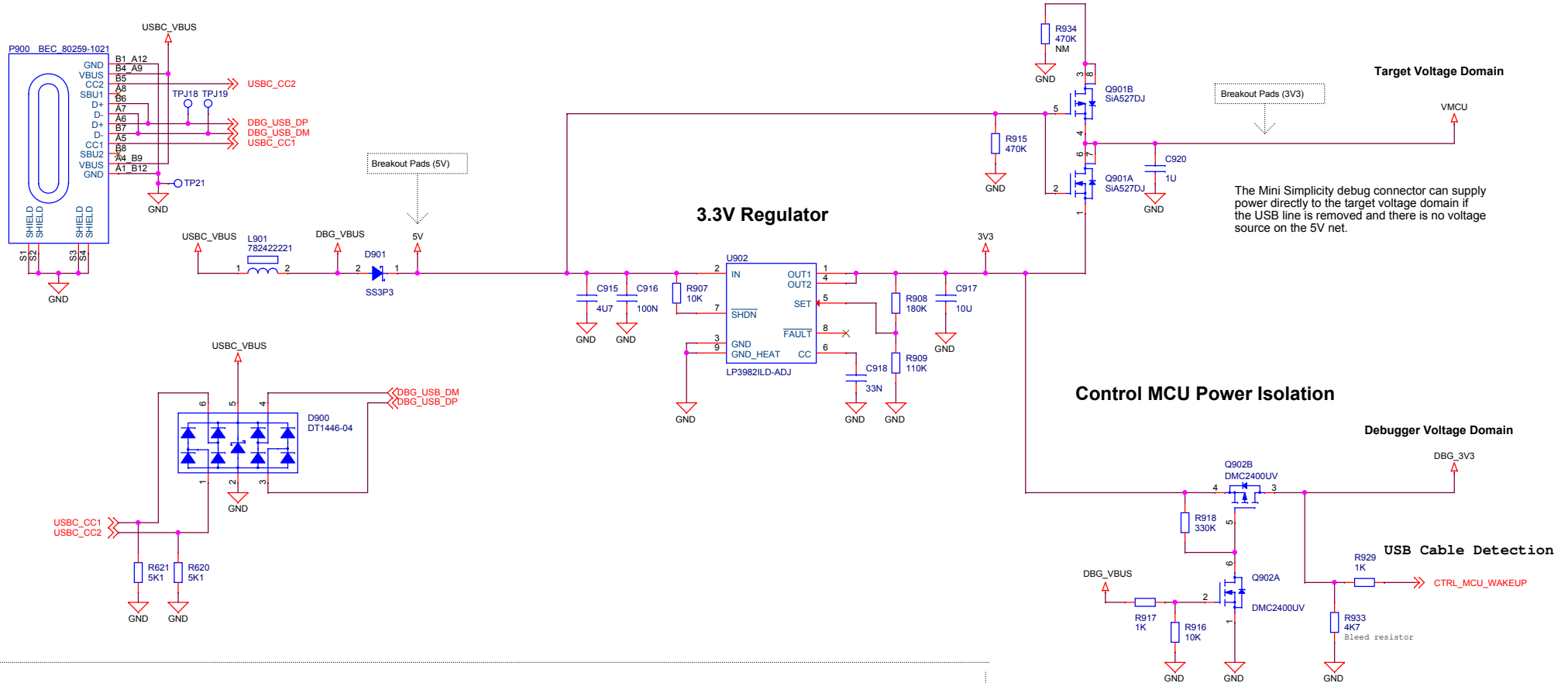
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B

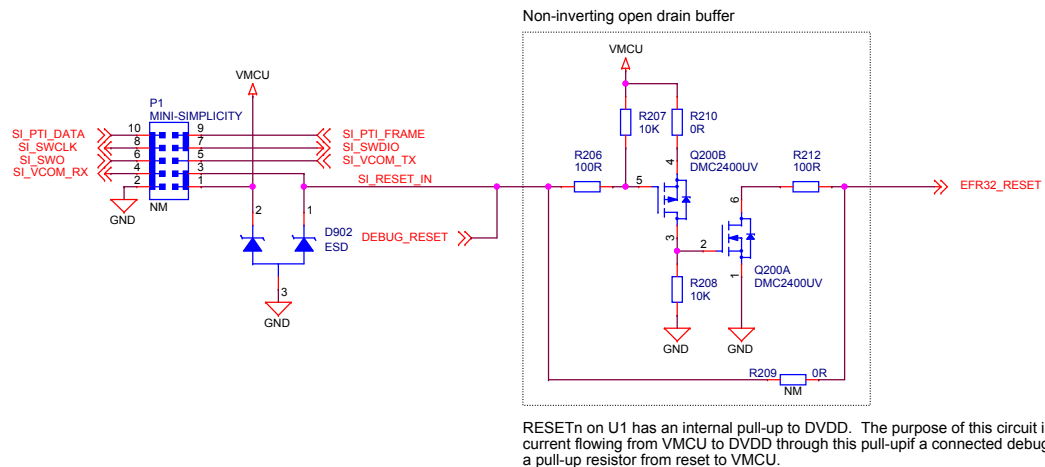
A



Debug USB Connection



Mini Simplicity Connector



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