EFM32®

... the world's most energy friendly microcontrollers

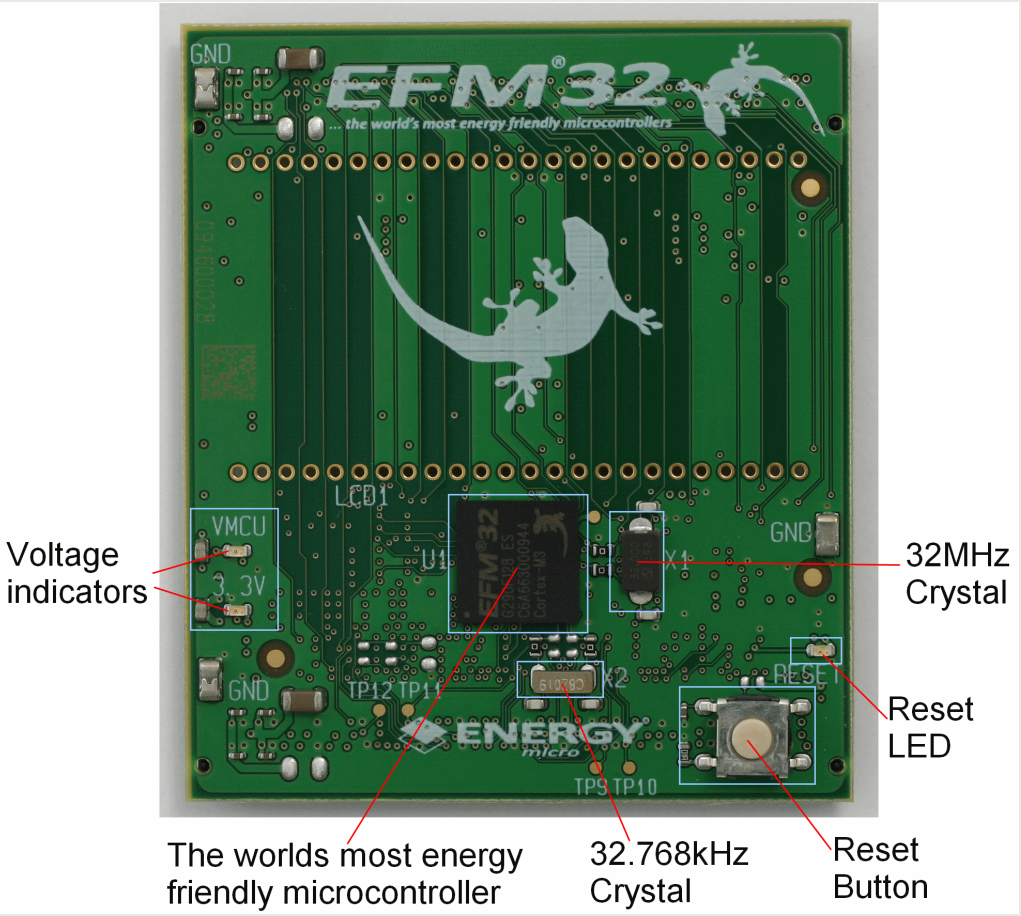
EFM32 G290 MCU Board

Preliminary

The EFM32 G290 MCU Board is a small plugin module for usage with the EFM32 Gecko Development Kit.

Features:

- The worlds most energy friendly microcontroller
- Compatible with the Advanced Energy Monitoring (AEM) system of the EFM32 Gecko Development Kit
- Leds indicating power and reset
- 32 MHz crystal
- 32.768 kHz crystal
- Reset button and ground-hooks for easy debugging



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1 Usage

1.1 Placement

This board is intended for use with the EFM32 Gecko Development Kit.

1.2 Reset Button / Reset LED

When pressed, the reset button resets the EFM32 device. When reset is asserted, a red led next to the button is lit. A filter is connected to the reset line in order to reduce bouncing.

1.3 LEDs Indicating Power

The two green LEDs indicate poweron the VMCU and 3.3V nets, respectively.

1.4 Crystal Oscillators

The board features one 32.768kHz and one 32MHz crystal. These are connected through 0-ohm resistors to the respective inputs of the low-frequency and high-frequency crystal oscillators of the EFM32. Using these instead of the internal RC-oscillators will ensure higher frequency accuracy. However, if the reduced accuracy is acceptable, theese lines can be used as normal IO-lines instead by removing the 0-ohm resistors. In order to export these IO lines to the Kit mainboard, insert resistors for connection to the EFM32_A bus. See schematic for details.

1.5 Kit Connection

It is possible to access the board controller on the Kit mainboard for example to turn LEDs on or off, read push button status or connecting the EMF32 to specific hardware on the mainboard. The access may either through SPI or the parallel interface (EBI), and the access mode is signaled to the board controller by asserting one of two dedicated signal lines. It is recomended to use the Board Support Package (BSP) for access to the mainboard. Please see the Kit user guide for furhter description of the BSP.

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Revision History

Revision	Comment
PA5	Updated after feedback from Contec
PA6	Moved the location of the VMCU R0 resistors
PA7	BOM update
A	Some BOM updates. Final version
A1	Removed pullup on reset. Added transistors to control the reset LED
A2	BOM changes. Removed pullup on reset button and some decoupling caps.

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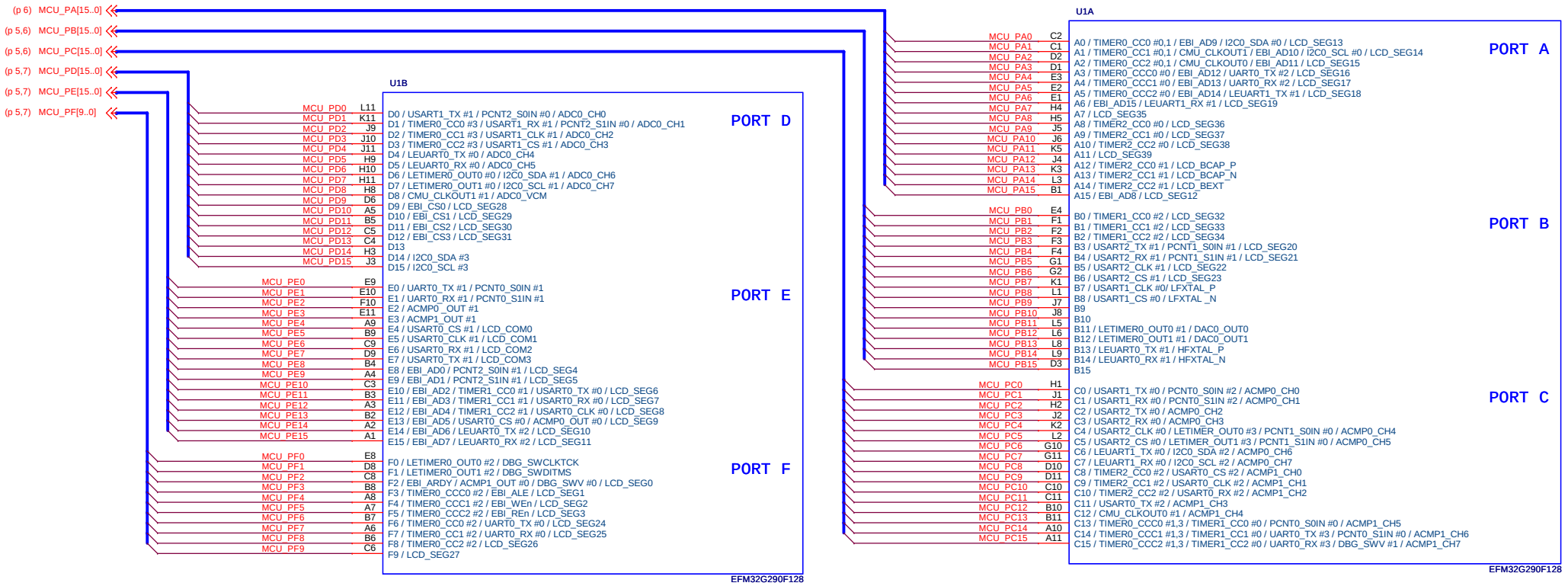

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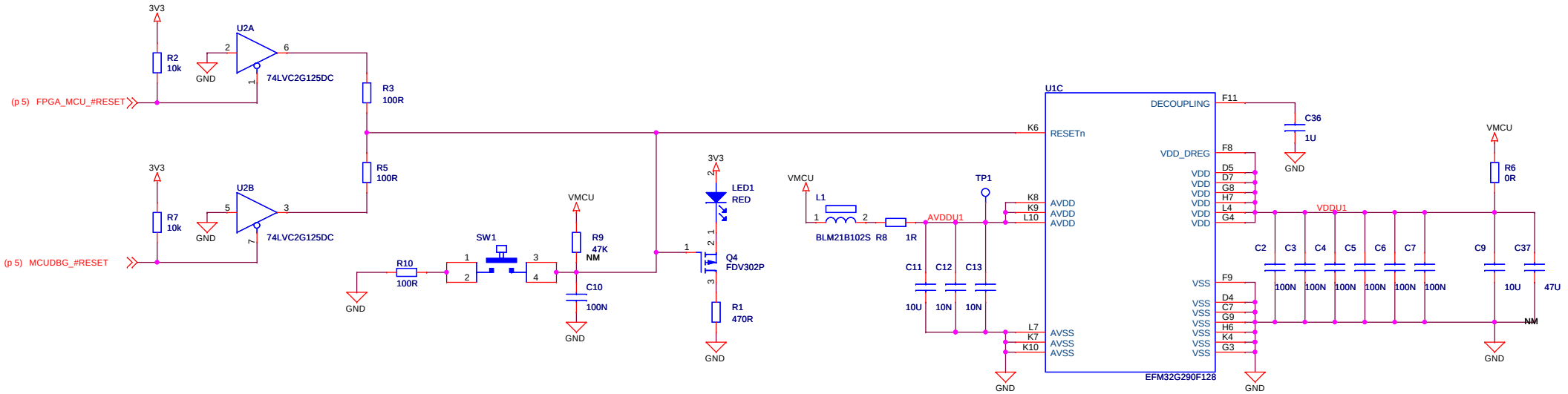
Reset Circuit



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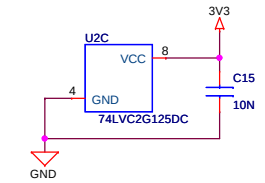

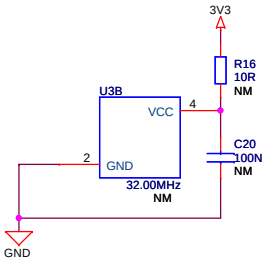

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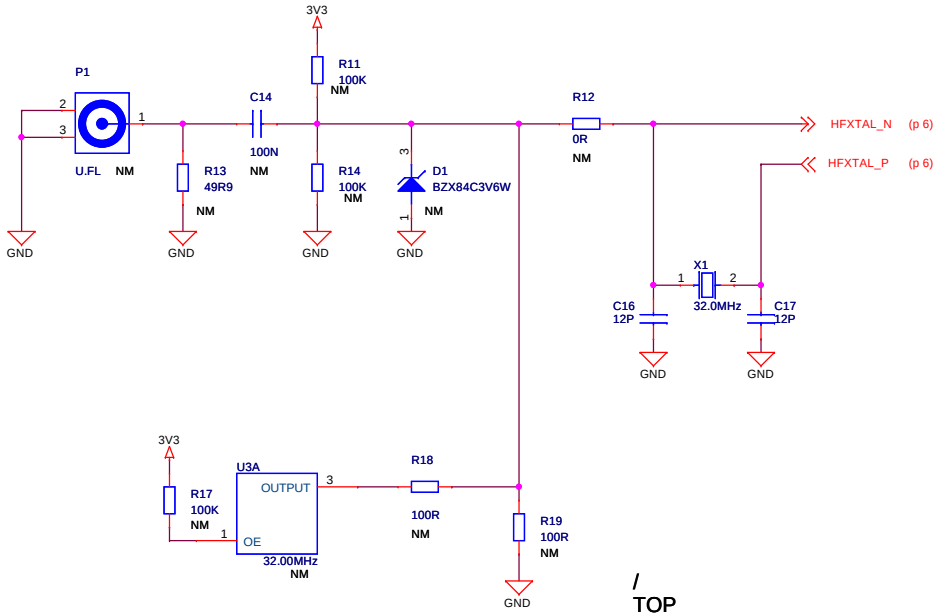
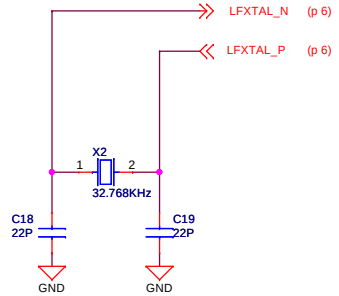


Low Frequency Clock



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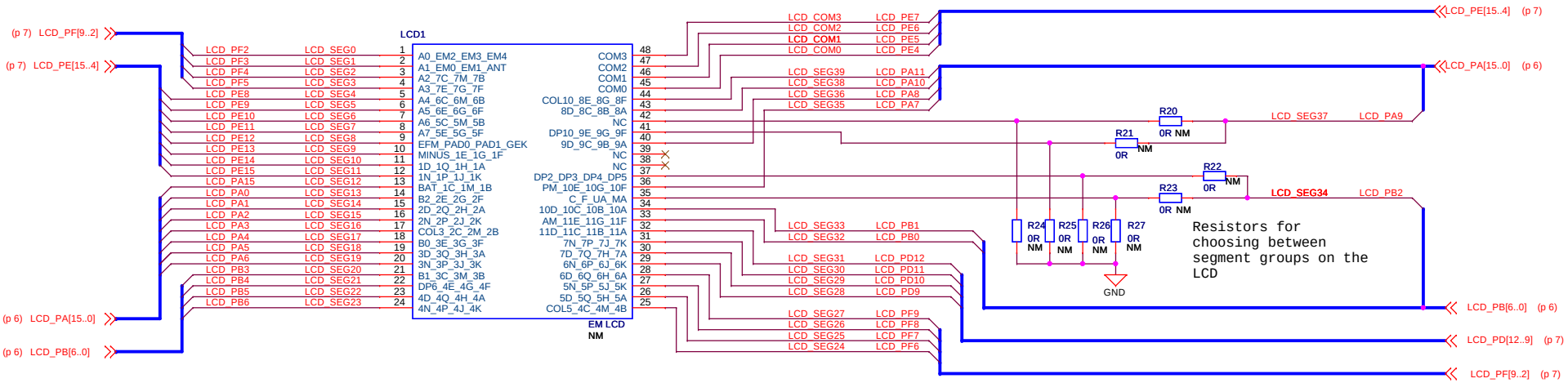
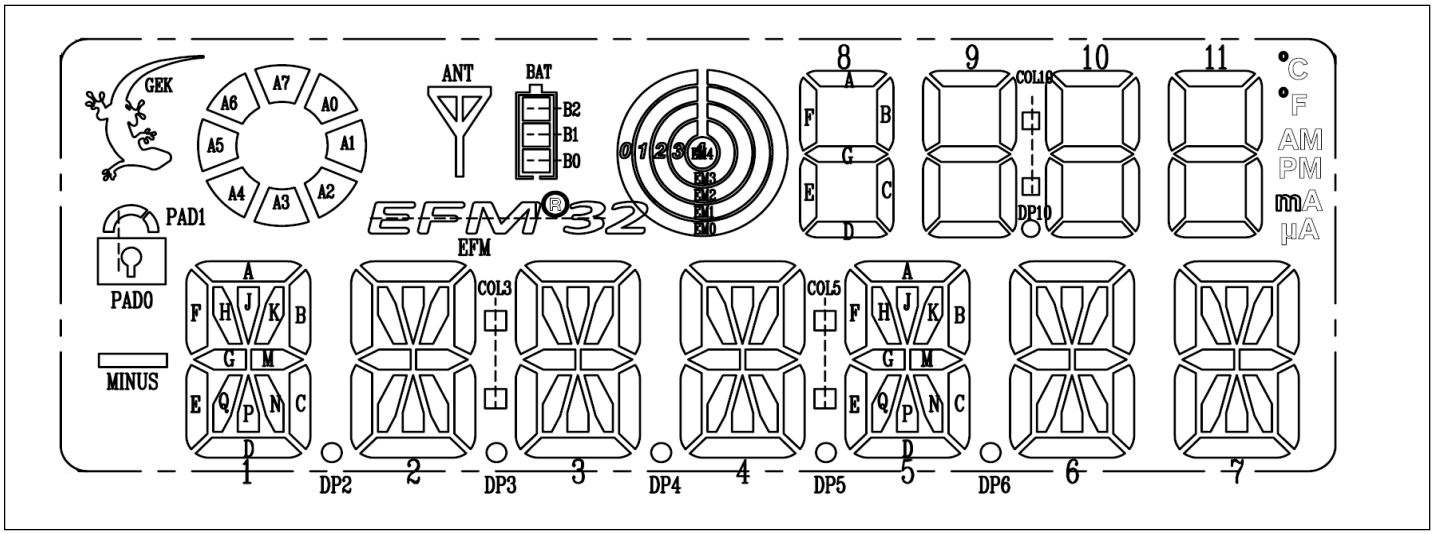
LCD signal connections



Segment names



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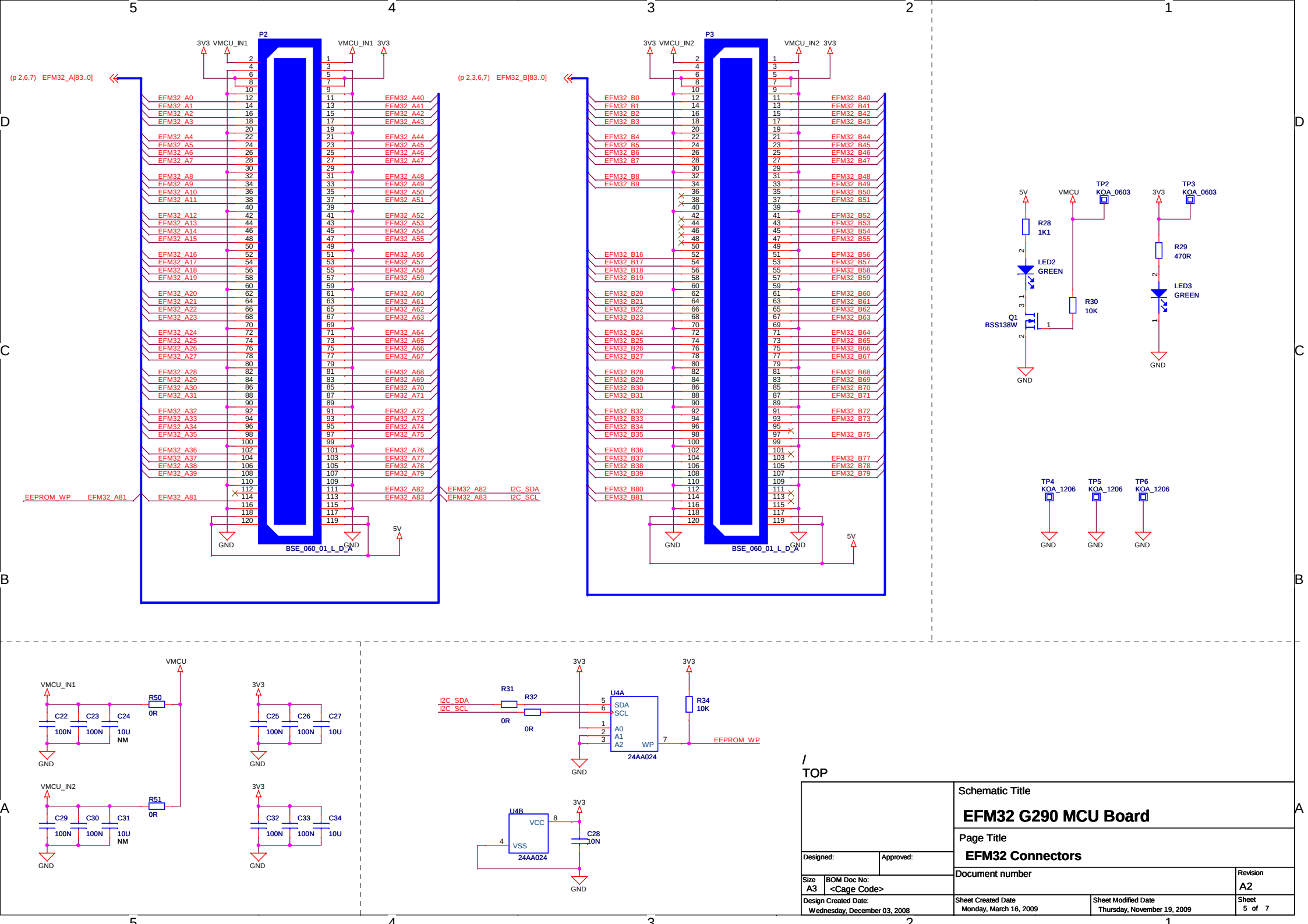

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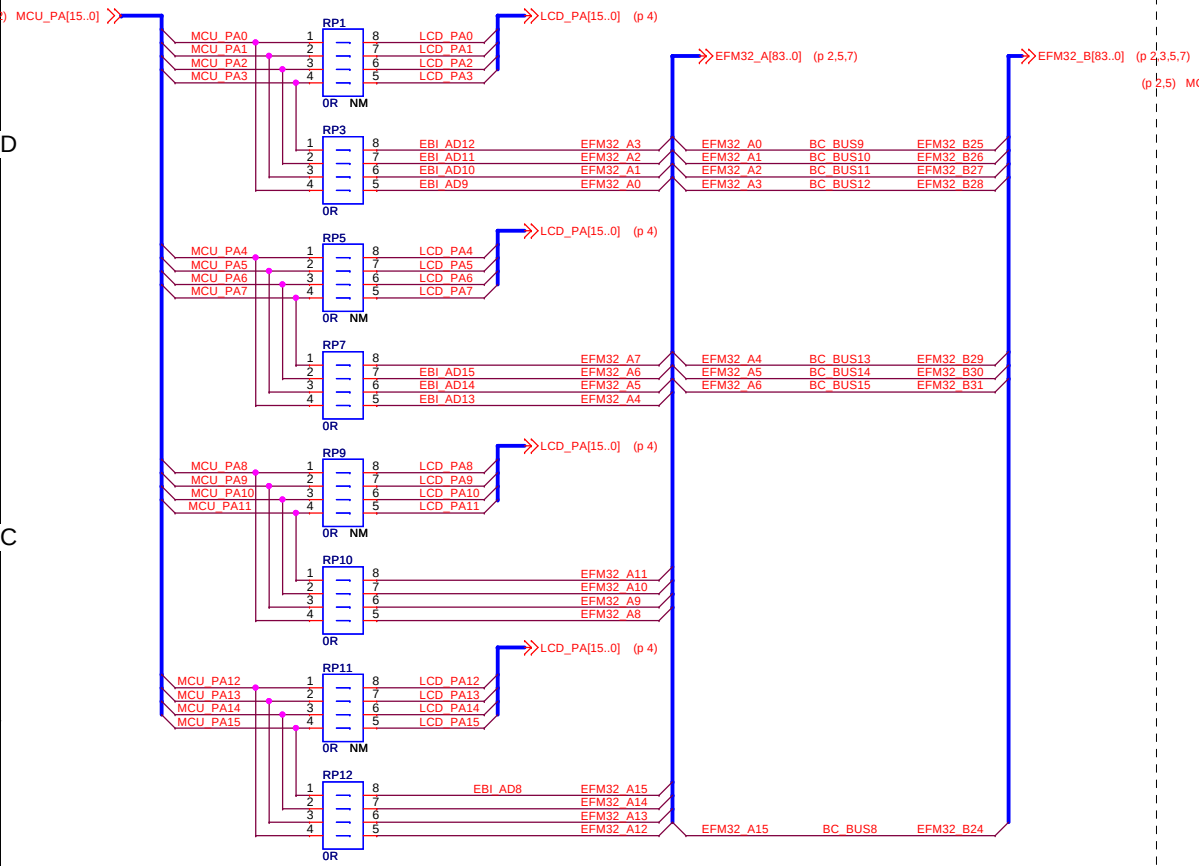
PA Connections



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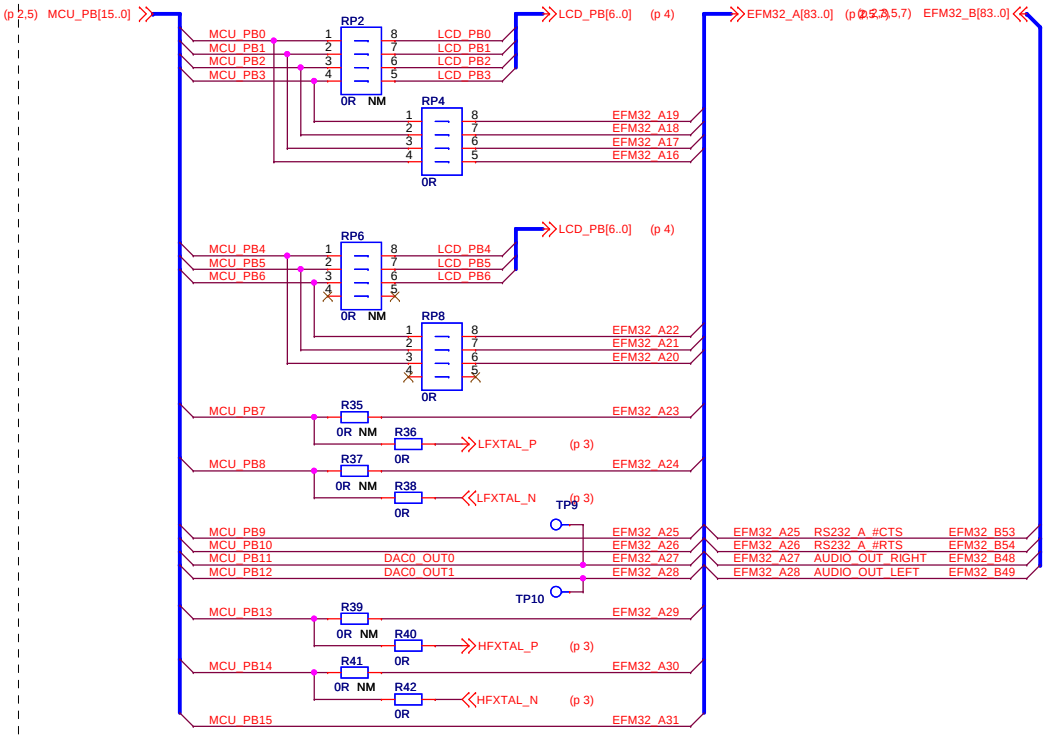

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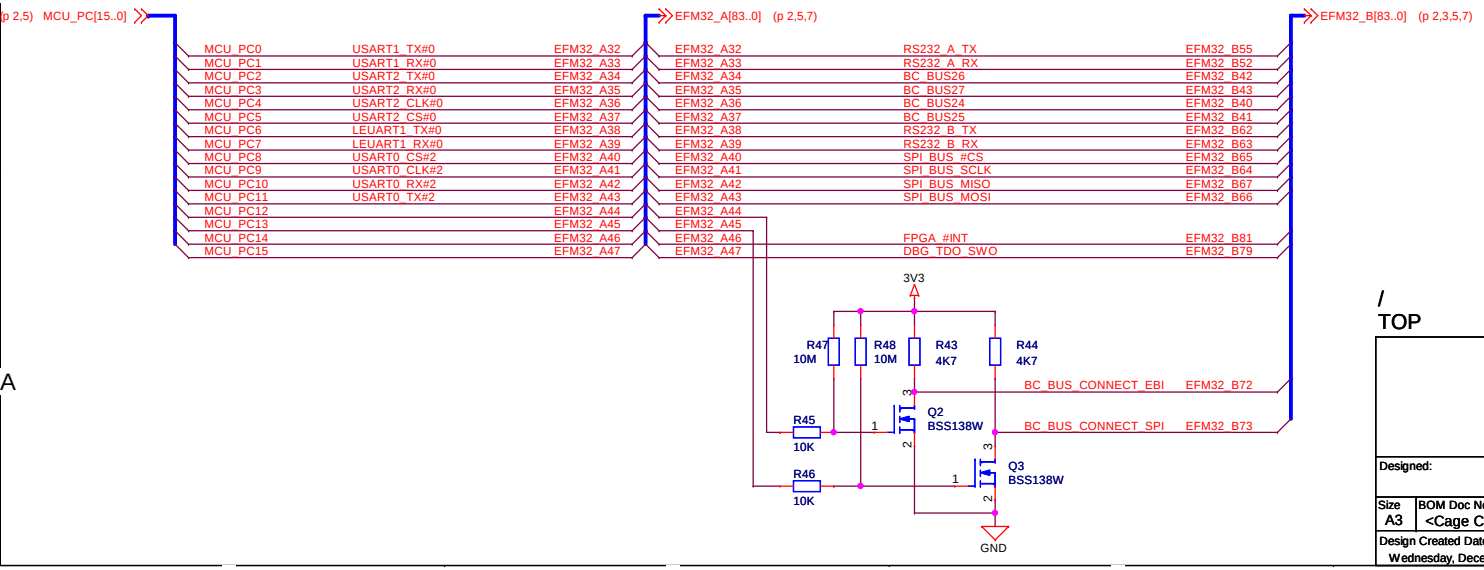

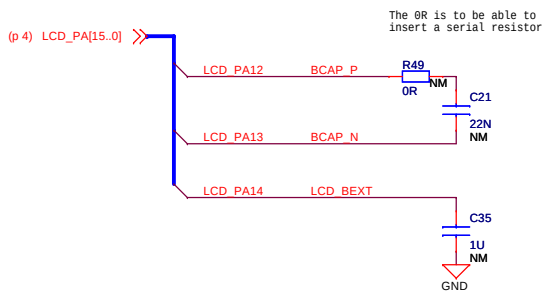

Capacitors for LCD voltage booster

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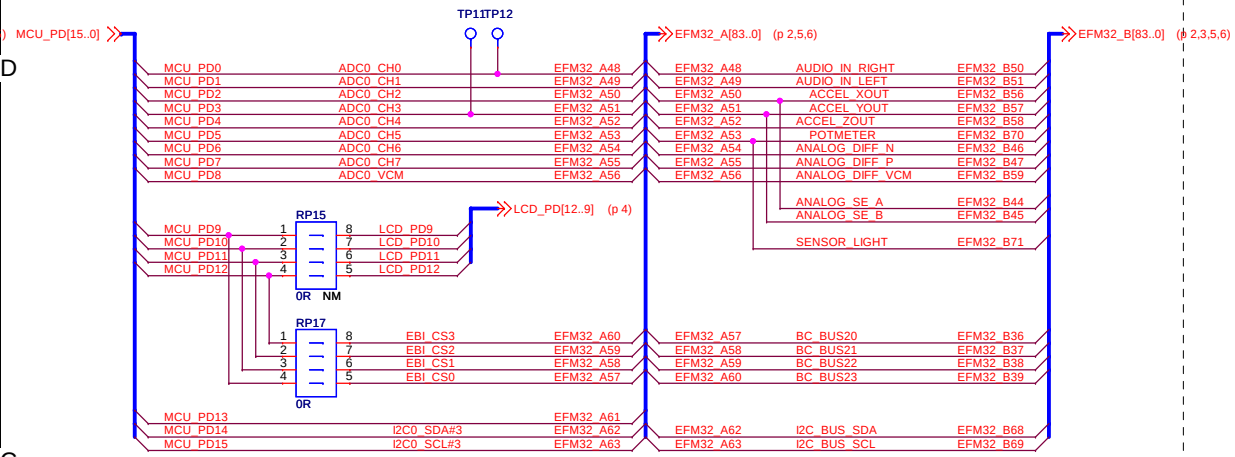
PD Connections



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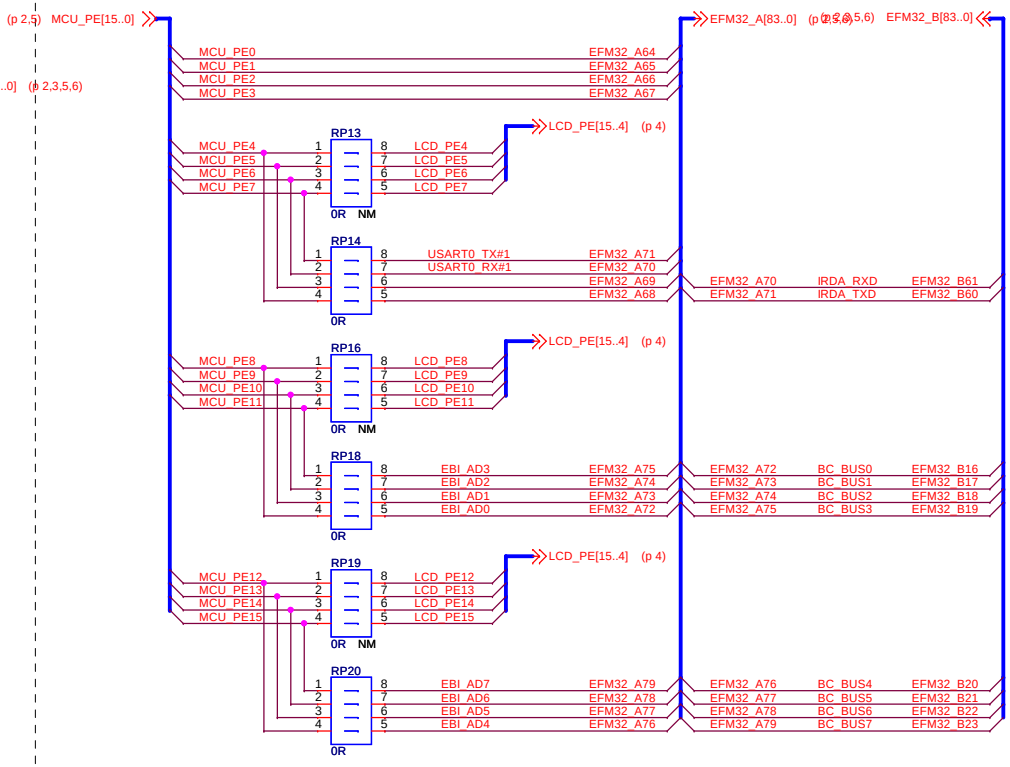

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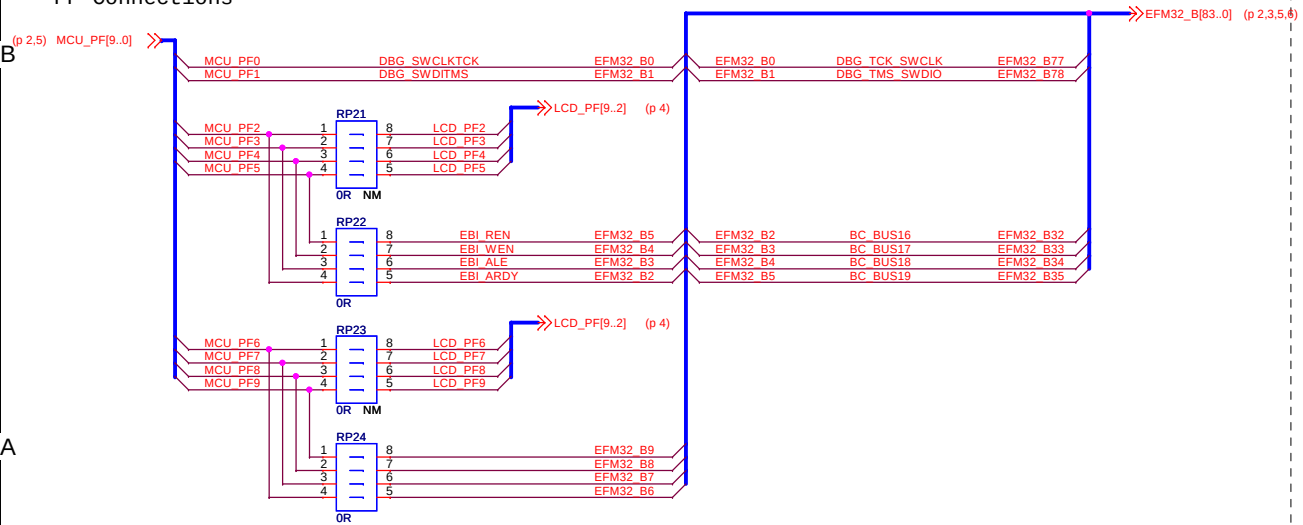
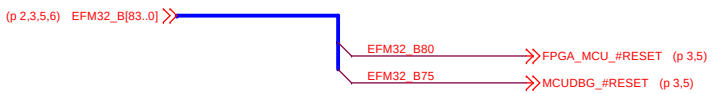


Reset connections



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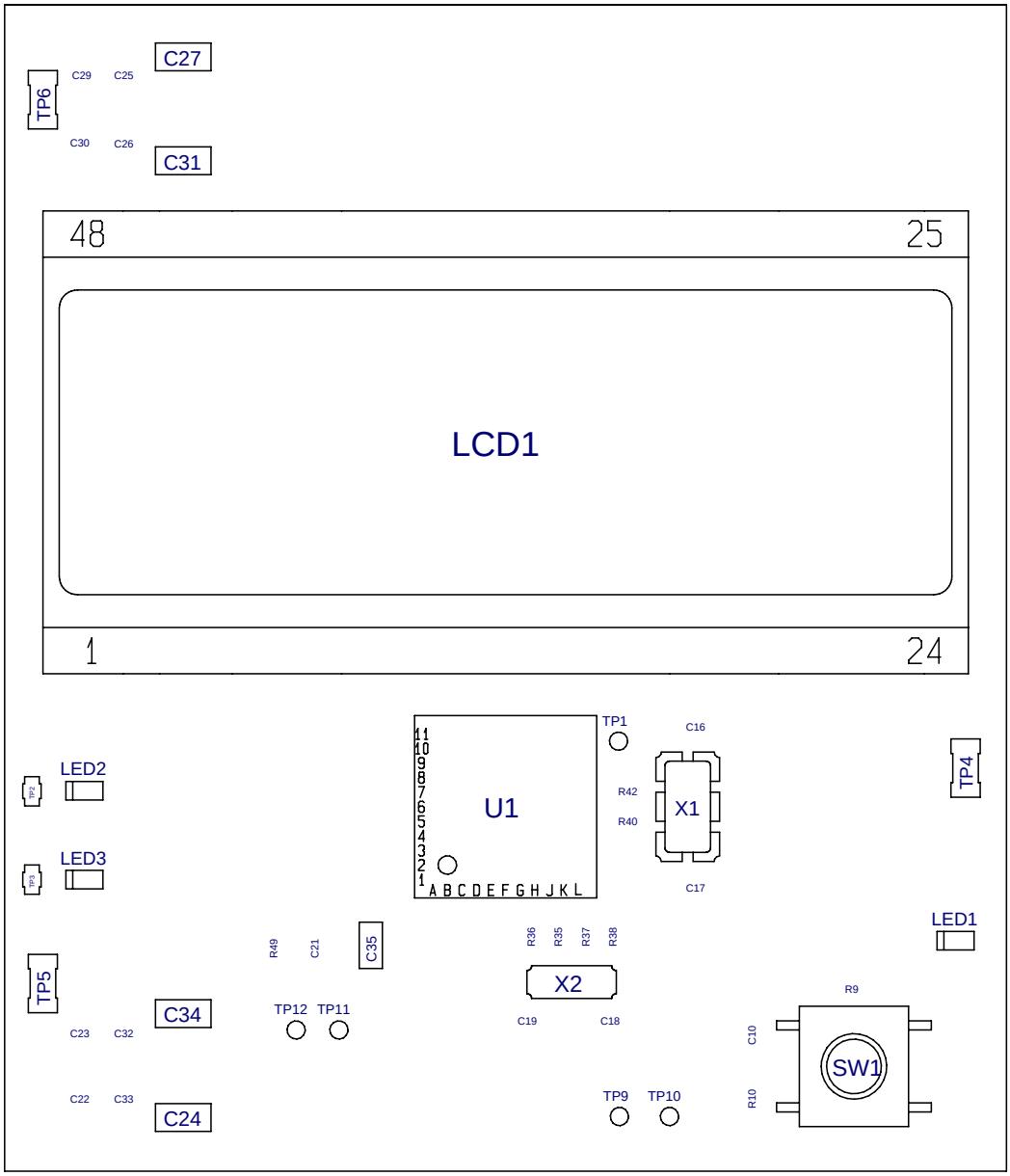

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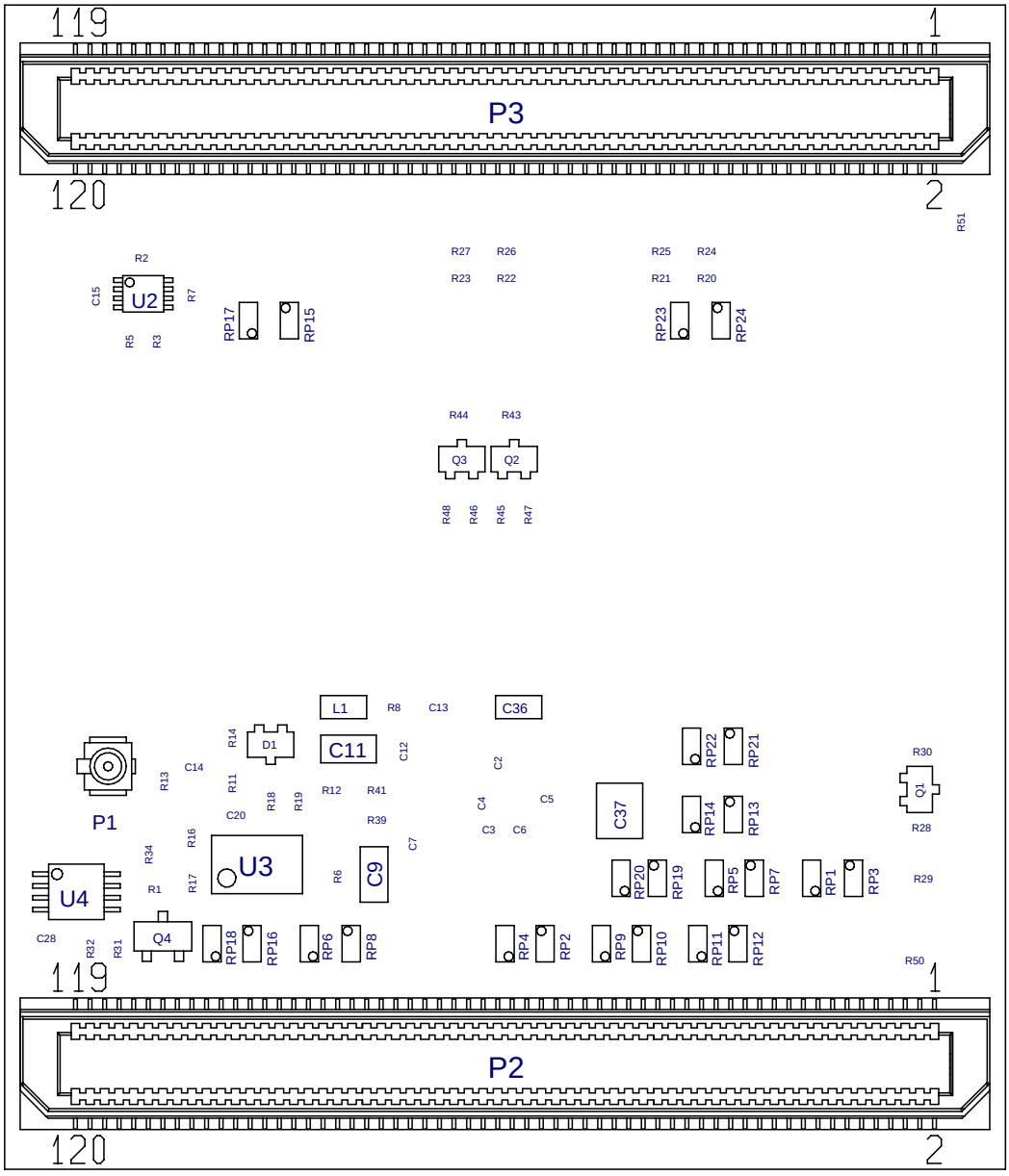

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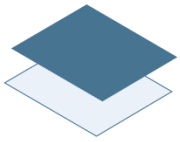

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