


| Table of Contents | |
|-------------------|------------------|
| 1 | TITLE, TOC & REV |
| 2 | NOTES |
| 3 | FS8500 |
| 4 | INTERFACE |

| Revisions | | | |
|-----------|---|---------------------|----------------|
| Rev | Description | Date | Approved |
| A | Prototype Release | April 6th, 2017 | Didier Pagnoux |
| AX1 | Prototype Fast Fix | October 2nd, 2017 | Didier Pagnoux |
| AX2 | Prototype Fast Fix | October 10th, 2017 | Didier Pagnoux |
| B | Prototype Fast Fix | October 18th, 2017 | Didier Pagnoux |
| B1 | Prototype Fast Fix | November 18th, 2017 | Didier Pagnoux |
| C | Formal Release | July 9th, 2018 | Didier Pagnoux |
| C1 | BOM Change : 0.1µF/50V/0402 to 0.1µF/16V/0402 (solve supplying issue) | Sept. 12th, 2018 | Didier Pagnoux |

KITFS85AEEVM

| | | | |
|--|--|---|-----------|
|  | | Analog Sensor Product Group 6501 William Cannon Drive West Austin, TX 78735-8596 | |
| This document contains information proprietary to NXP and shall not be used for engineering design, procurement or manufacture in whole or in part without the express written permission of NXP Semiconductors. | | | |
| ICAP Classification: CP: ILO: X PUBI: | | | |
| Designer: Didier Pagnoux | Drawing Title: KITFS85AEEVM | | |
| Drawn by: Didier Pagnoux | Page Title: TITLE, TOC & REV | | |
| Approved: Didier Pagnoux | Size C | Document Number SCH-29774 PDF: SPF-29774 | Rev C1 |
| Date: Tuesday, September 25, 2018 | | Sheet 1 of 4 | |

Board Configuration

Vpre : 450KHz / 3.3V / 10A
Buck1: 2.2MHz / 1.25V / 3.6A peak
Buck2: 2.2MHz / 1.8V / 3.6A peak
Buck3: 2.2MHz / 3.3V / 3.6A peak
Boost: 2.2MHz / 5.74V / In = Vpre : I=1.5A peak
LD01 : 3.3V / 400mA / In = VBOOST
LDO2 : 5V / 150mA

Buck1 / Buck2 in Standalone by default (R11 & R145 not populated)
Could be set in Multiphase (R11 & R145 populated).

Vpre & Pi Filter Coil Selection :

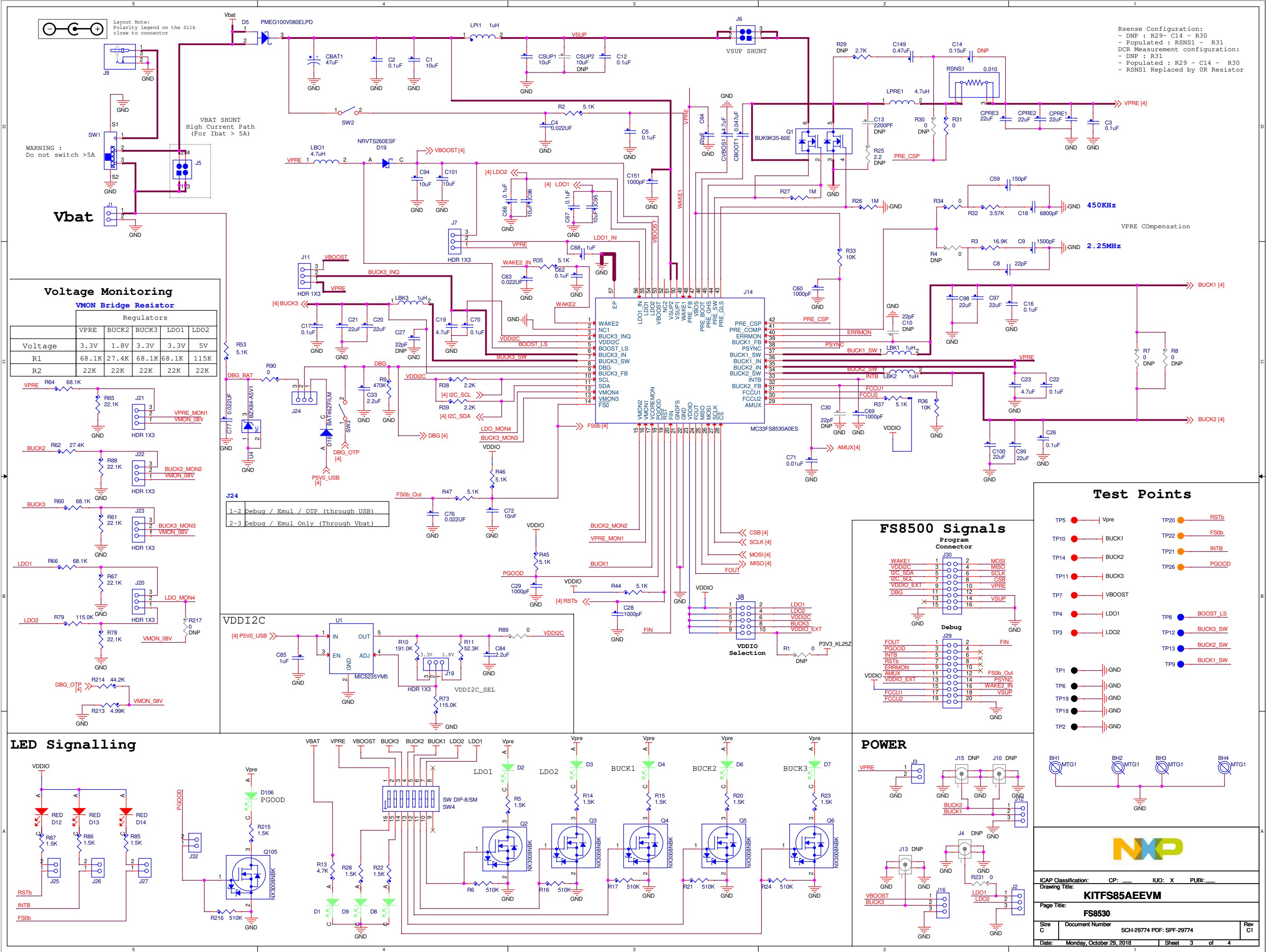
For Vpre 6 Amps :
- Pi Filter : ADM4532UMS-1R0M
- Vpre : XAL6060-682ME

For Vpre 10 Amps :
- PiFilter : SPM6545VT-1R0M-D Isat 22.9A / Itemp 10.5A (7x6.5mm)
- Vpre 450K : SPM10065VT-4R7M-D Isat 22.9 / Itemp@40°C 10.7A (10 x 10.5mm)
- Vpre 2.25M : XAL6030-182ME Isat 18.2A / Itemp@20C 10A

Alternate Parts for Vpre 10 Amps :
- Vpre 450K : XAL1010-682 Isat 21.8A / Itemp 14A (10x11.3mm)



| | | |
|--|---|-----------|
| ICAP Classification: CP: ___ IUC: X PUBI: ___ | | |
| Drawing Title: KITFS85AEEVM | | |
| Page Title: NOTES | | |
| Size C | Document Number SCH-29774 PDF: SPF-29774 | Rev C1 |
| Date: Wednesday, September 12, 2018 Sheet 2 of 4 | | |

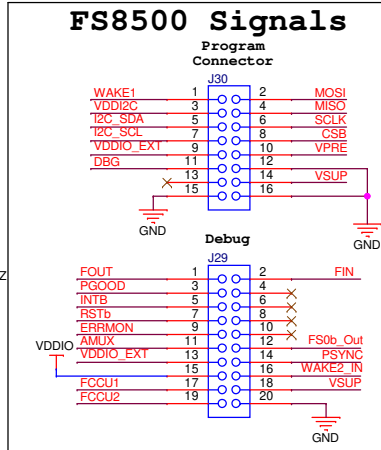
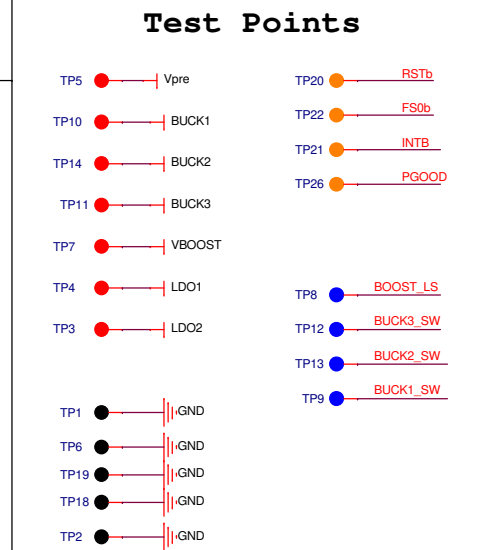
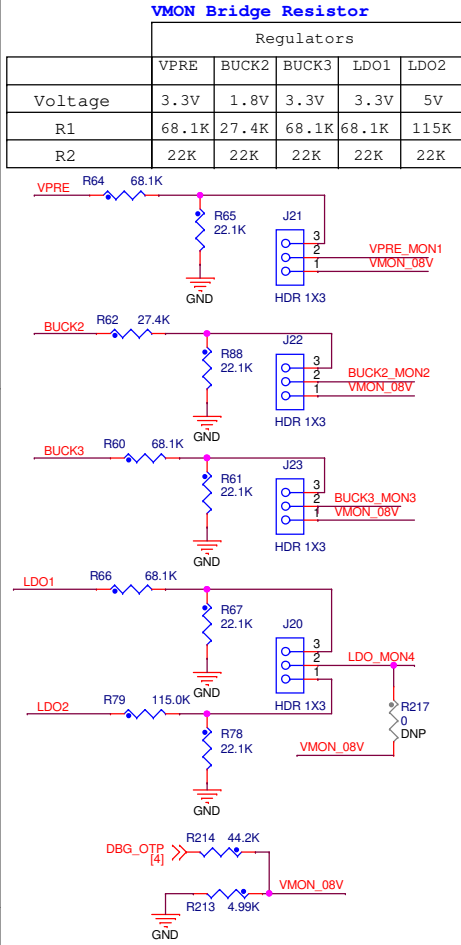


Rsense Configuration:
 - DNP : R29- C14 - R30
 - Populated : RSNS1 - R31
 DCR Measurement configuration:
 - DNP : R31
 - Populated : R29 - C14 - R30
 - RSNS1 Replaced by 0R Resistor

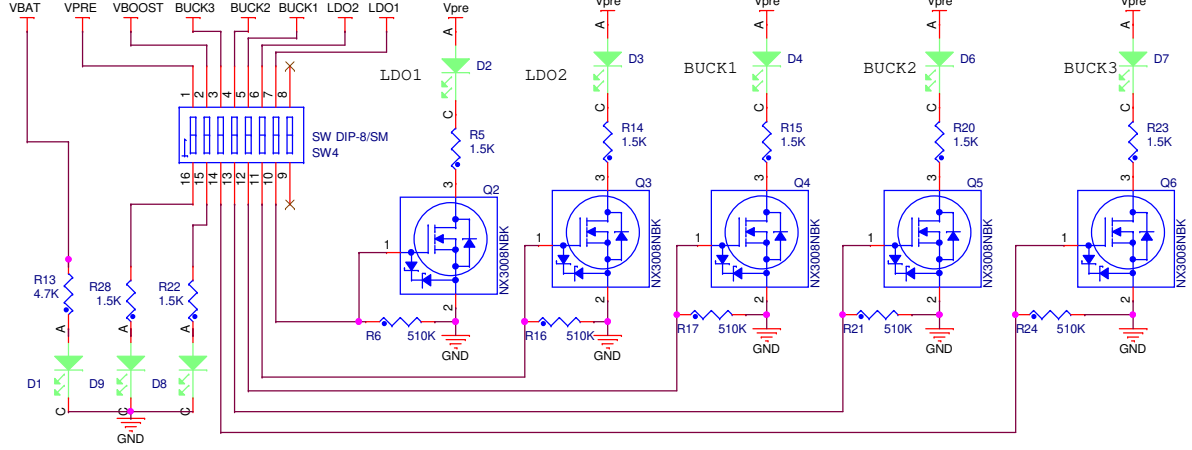
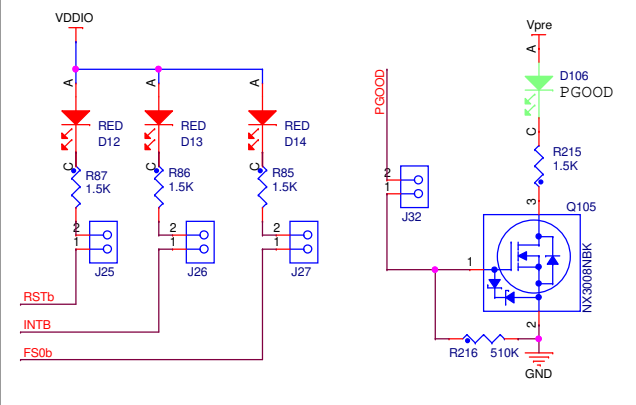
WARNING :
 Do not switch >5A

VBAT SHUNT
 High Current Path
 (For Ibat > 5A)

Voltage Monitoring



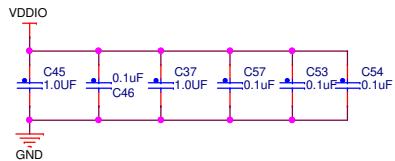
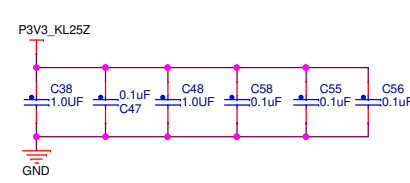
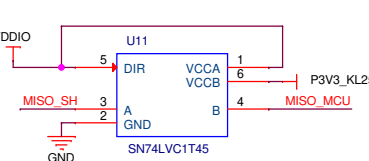
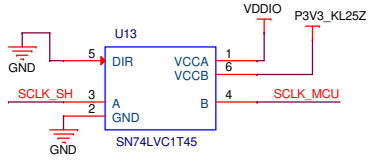
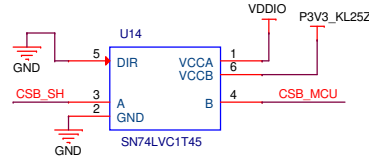
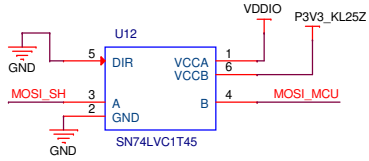
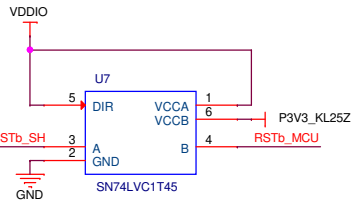
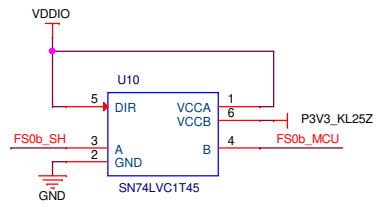
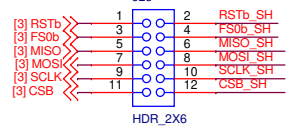
LED Signalling



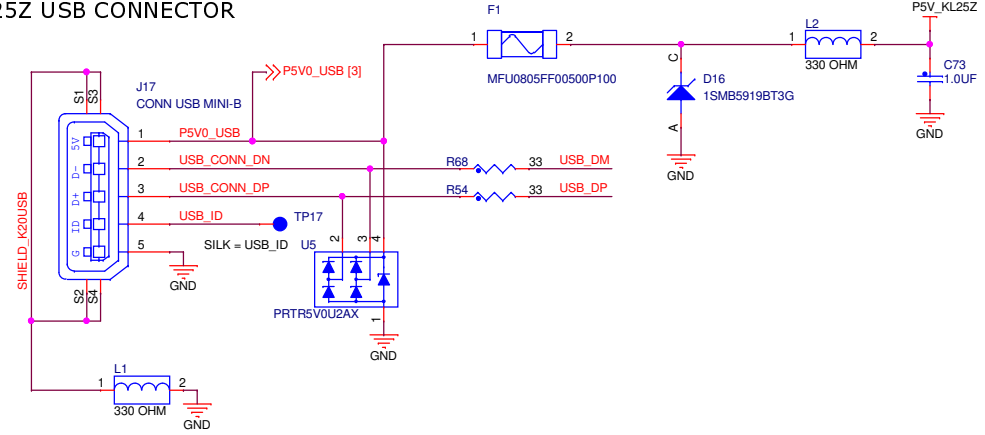
ICAP Classification: CP: ___ IUC: X PUBI: ___
 Drawing Title: **KITFS85AEEVM**
 Page Title: **FS8530**
 Size C Document Number SCH-29774 PDF: SPF-29774 Rev C1
 Date: Monday, October 29, 2018 Sheet 3 of 4

Level Shifter (1.65V / 5.5V)

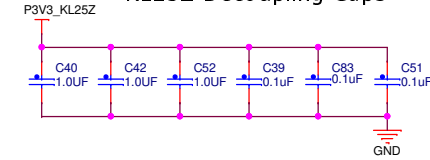
SPI / Reset / Fail Safe 0



KL25Z USB CONNECTOR



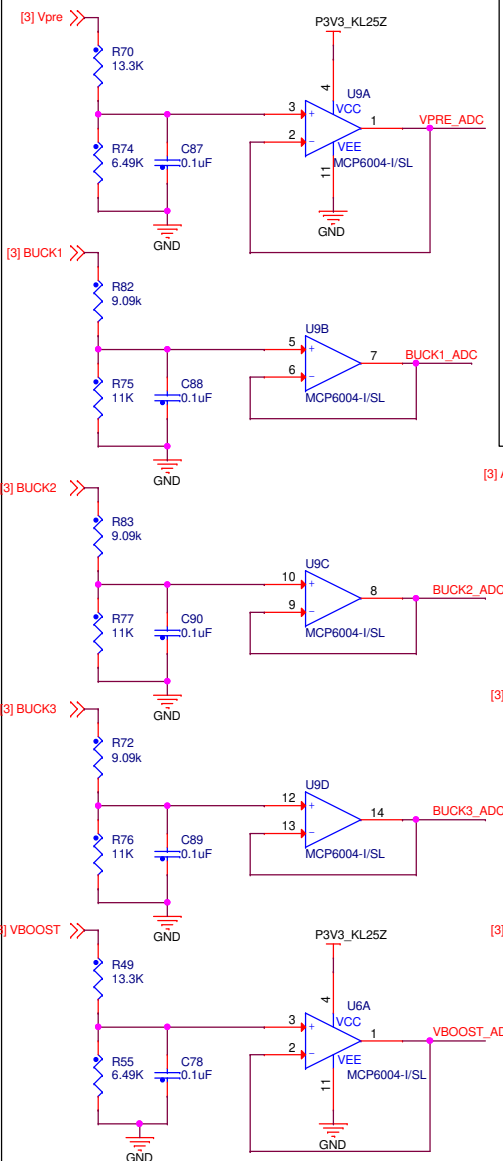
KL25Z Decoupling Caps



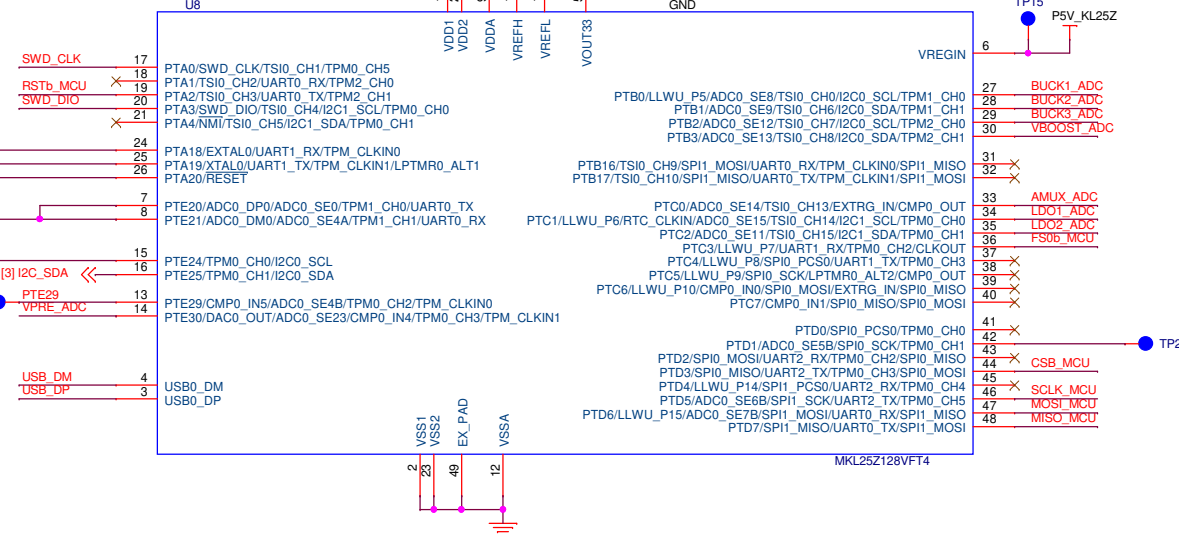
CAD NOTE: Please place these capacitors near their respective CPU pin (VREFH to VREFL and VDDA to VSSA). Decoupling capacitors shall be used for these pins: VDD1, VDD2, VDDA.

CAD NOTE: Please place P3V3_KL25Z capacitor close to the VOUT33 pin.

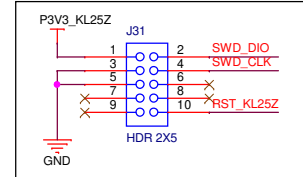
Analog Inputs



| Board ID | PTE21 | PTE20 | Board Type |
|----------|-------|-------|-------------|
| 0 | 0 | 0 | EVM |
| 0 | 1 | 1 | FFV |
| 1 | 0 | 0 | FRDM |
| 1 | 1 | 1 | Programming |



SWD CONNECTOR



DEBUG & Programming Mode Voltage

