


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

| Revisions | | | |
|-----------|--|------------------|----------------|
| Rev | Description | Date | Approved |
| A | Initial Release | March 14th, 2017 | Didier Pagnoux |
| AX1 | Correction followin rev. A Validation | September 2017 | Didier Pagnoux |
| B | Production Release | October 2017 | Didier Pagnoux |
| C | Production Release (R179,R218 updated) | 9-July 2018 | Didier Pagnoux |
| C1 | Q1 change by 60V transistor 0.1µF/50V/0402 capacitors changed by 0.1µF/16V/0402 (supplying issue) Compensation network values corrected | Sept.24, 2018 | Didier Pagnoux |

KITFS85SKTEVM Socketed Board

| | | | |
|---|--|---|-----------|
|  | | Analog Sensor Product Group 6501 William Cannon Drive West Austin, TX 78735-8596 | |
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| ICAP Classification: CP: ILO: X PUBI: | | | |
| Designer: Didier Pagnoux | Drawing Title: KITFS85SKTEVM | | |
| Drawn by: Didier Pagnoux | Page Title: TITLE, TOC & REV | | |
| Approved: Didier Pagnoux | Size C | Document Number SCH-29627 PDF: SPF-29627 | Rev C1 |
| Date: Tuesday, September 25, 2018 Sheet 1 of 4 | | | |

Board Configuration

Vpre : 450KHz / 3.3V / 10A
Buck1: 2.2MHz / 1.25V / 2.6A
Buck2: 2.2MHz / 1.8V / 4A
Buck3: 2.2MHz / 3.3V / 2.1A
Boost: 2.2MHz / 5.74V / In = Vpre : I=400mA
LD01 : 3.3V / 400mA / In = VBOOST
LDO2 : 5V / 200mA

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 :
- 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: **NOTES**

Page Title: **NOTES**

Size C Document Number SCH-29627 PDF: SPF-29627 Rev C1

Date: Tuesday, September 25, 2018 Sheet 2 of 4

Layout Note:
Polarity legend on the Silk
close to connector

Rsense Configuration:
- DNP : R120 - C102 - R121
- Populated : RSN1 - R122
DCR Measurement configuration:
- Populated : R120 - C102 - R121
- RSN1 Replaced by 0R Resistor
- DNP : R122

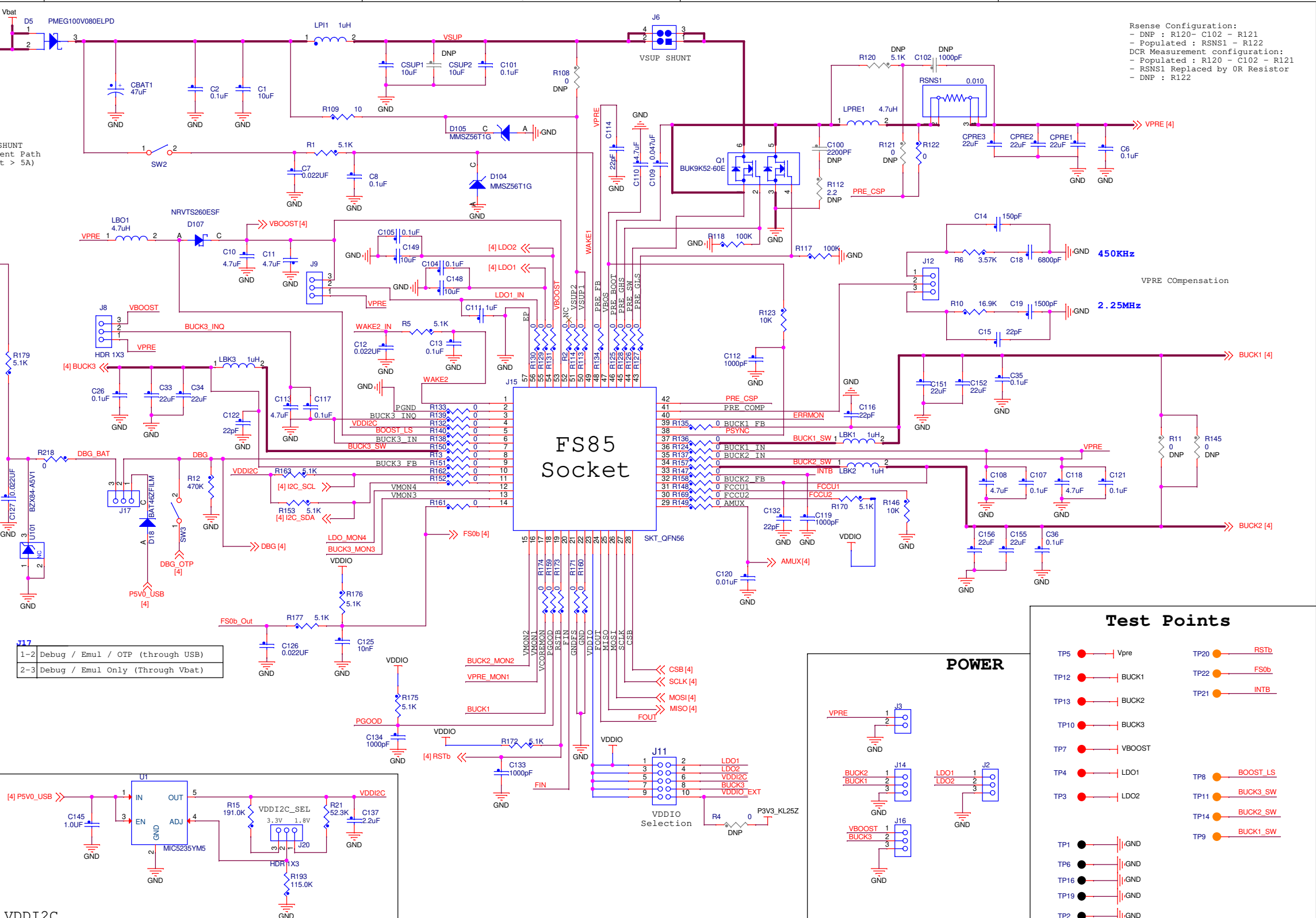
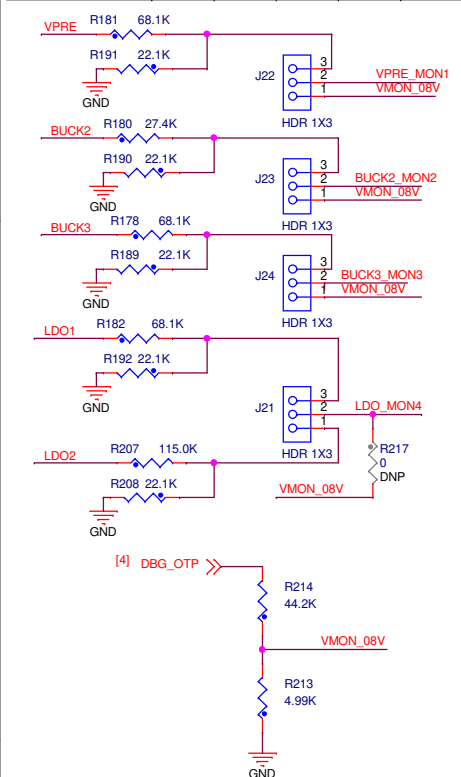
WARNING :
Do not switch >5A

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

Voltage Monitoring

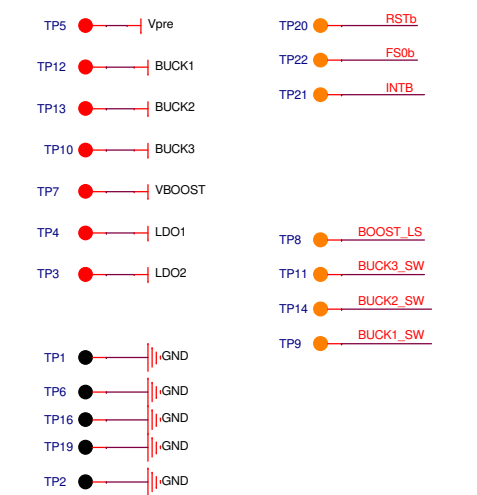
VMON Bridge Resistor

| | VPRE | BUCK2 | BUCK3 | LDO1 | LDO2 |
|---------|-------|-------|-------|-------|-------|
| Voltage | 3.3V | 1.8V | 3.3V | 3.3V | 5V |
| RH | 68.1K | 27.4K | 68.1K | 68.1K | 115K |
| RL | 22.1K | 22.1K | 22.1K | 22.1K | 22.1K |

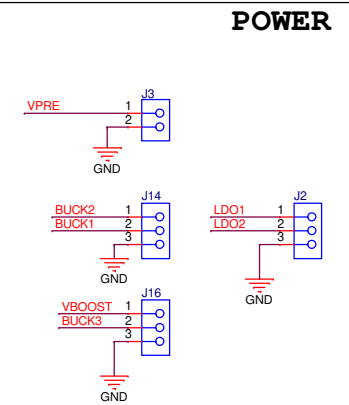


J17
1-2 Debug / Emul / OTP (through USB)
2-3 Debug / Emul Only (Through Vbat)

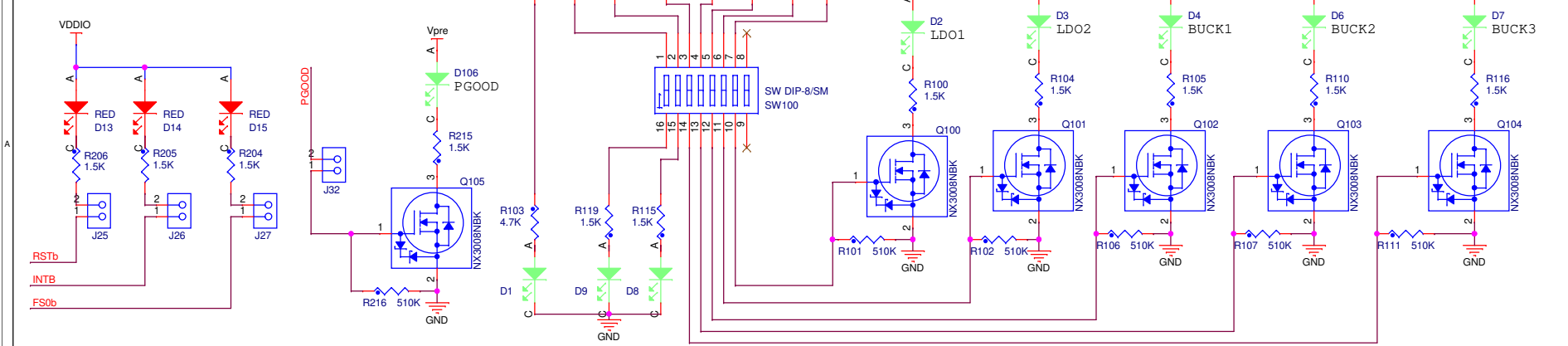
Test Points



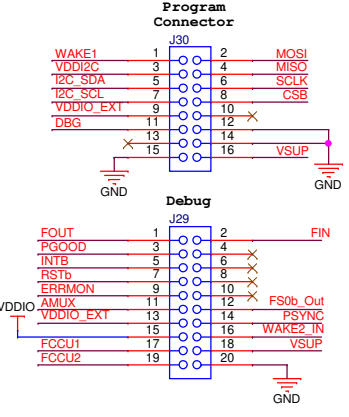
POWER



LED Signalling



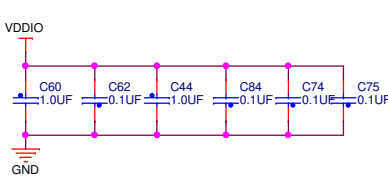
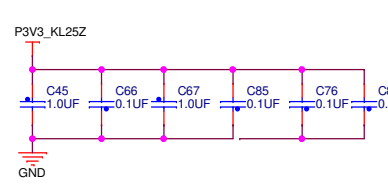
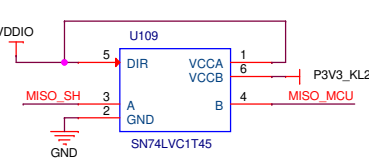
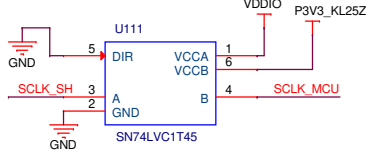
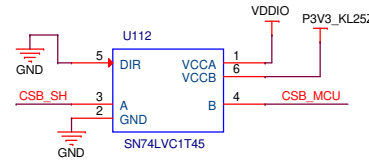
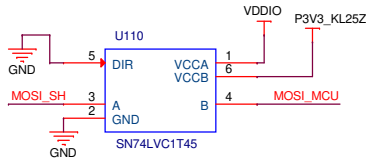
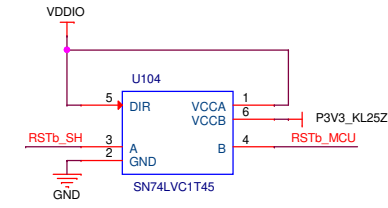
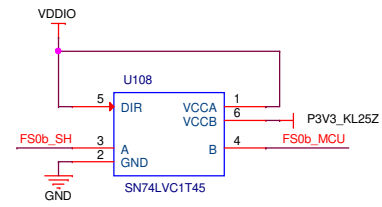
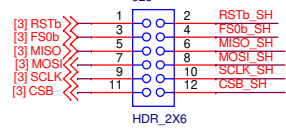
FS8500 Signals



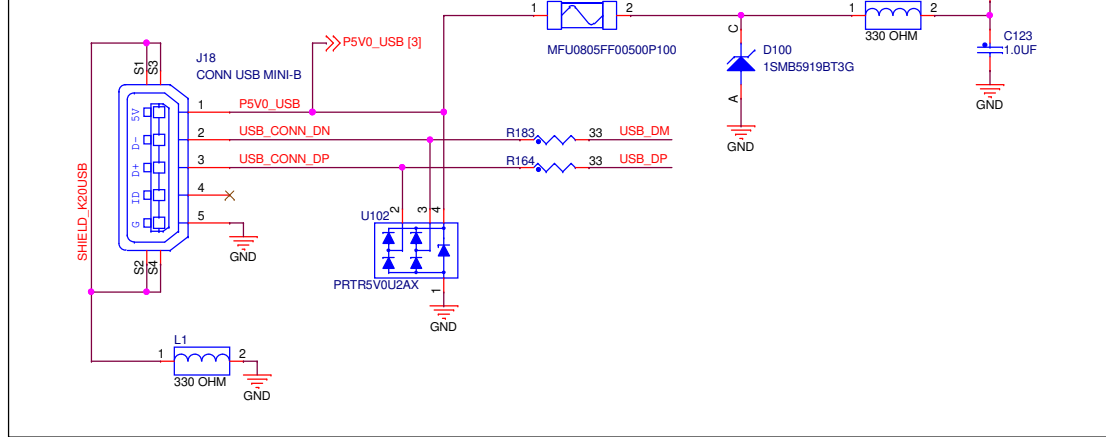
ICAP Classification: CP: IUC: X PUBI:
Drawing Title: **KITFS85SKTEVM**
Page Title: **FS8530**
Size C Document Number SCH-29627 PDF: SPF-29627 Rev C1
Date: Tuesday, September 25, 2018 Sheet 3 of 4

Level Shifter (1.65V / 5.5V)

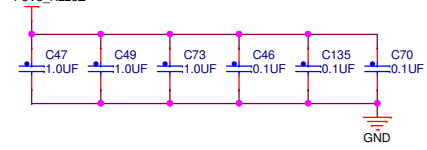
SPI / Reset / Fai Safe 0



KL25Z USB CONNECTOR



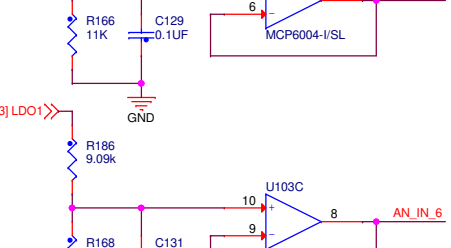
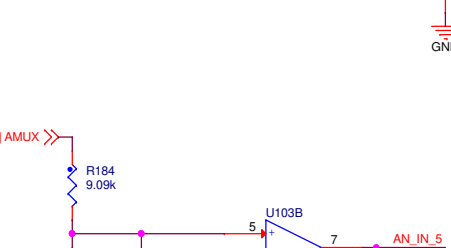
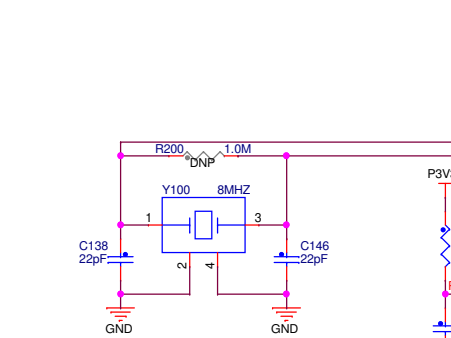
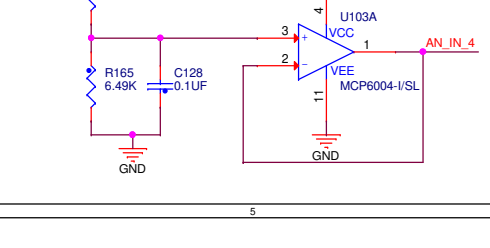
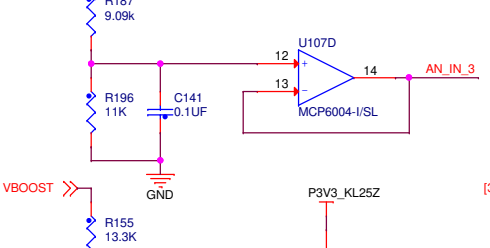
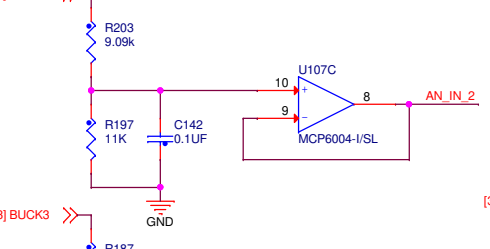
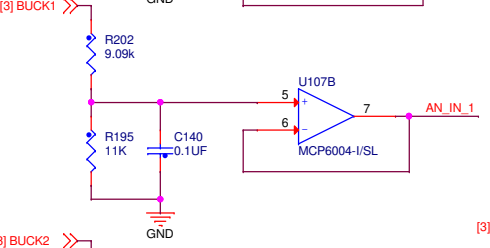
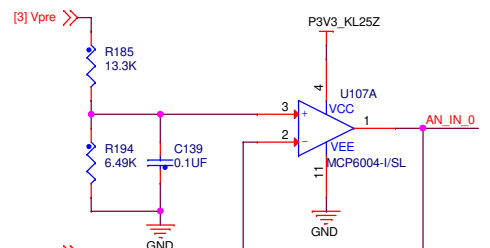
KL25Z Decoupling Caps



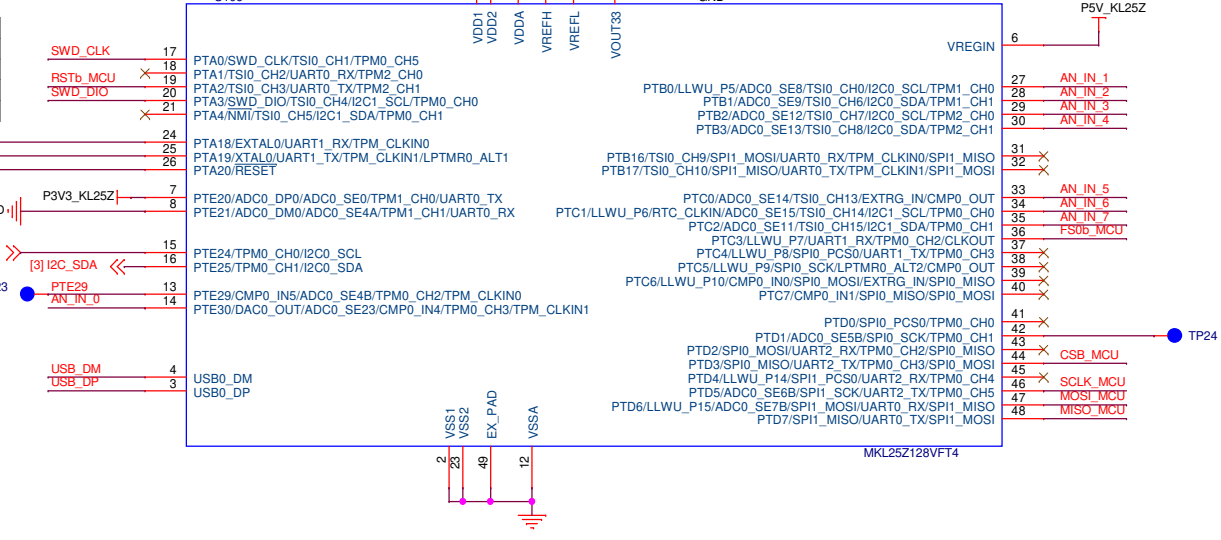
CAD NOTE: Please place these capacitors near their respective CPU pin (VREFH to VREFL and VDDA to VSSA). Decoupling capacitors shall be used for these pins: VDD1, VDD2, VDDA.

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

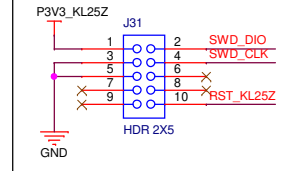
Analog Inputs



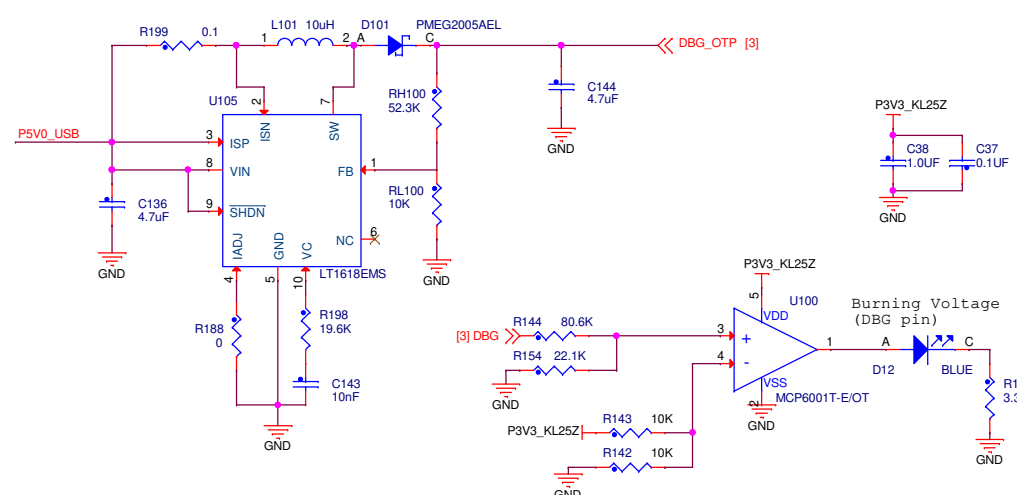
| Board ID | PTE21 | PTE20 | Board Type |
|----------|-------|-------|-------------|
| 0 | 0 | 0 | EVM |
| 0 | 1 | 1 | FFV |
| 1 | 0 | 0 | FRDM |
| 1 | 1 | 1 | Programming |




SWD CONNECTOR



DEBUG Mode entry (using USB 5V power supply)





| | |
|---------------------------------------|--|
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| Drawing Title: KITFS85SKTEVM | |
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