

A

A

B

B

C

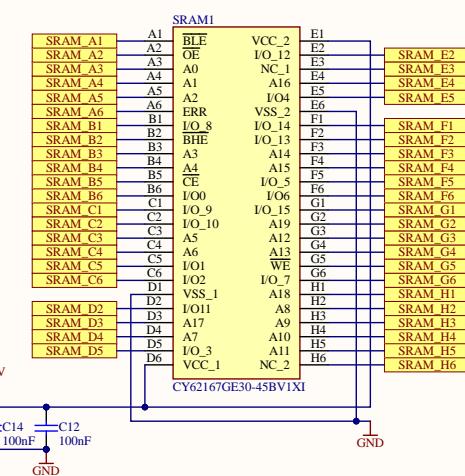
C

D

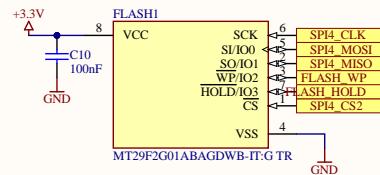
D

| | | | | |
|--|------------------------|--|-------------------------------|---|
| Title Housekeeping | | | Project CHESS - OBC |  |
| Size A3 | Revision 1.0 | File Name Housekeeping.SchDoc | Last updated 06/04/2021 | |
| Page 1 | of 8 | Designers ML, PFA, EW | EPFL SPACECRAFT TEAM |  |
| EPFL Spacecraft Team EPFL Space Center PPH335 station 13 CH-1015 Lausanne | | | | |

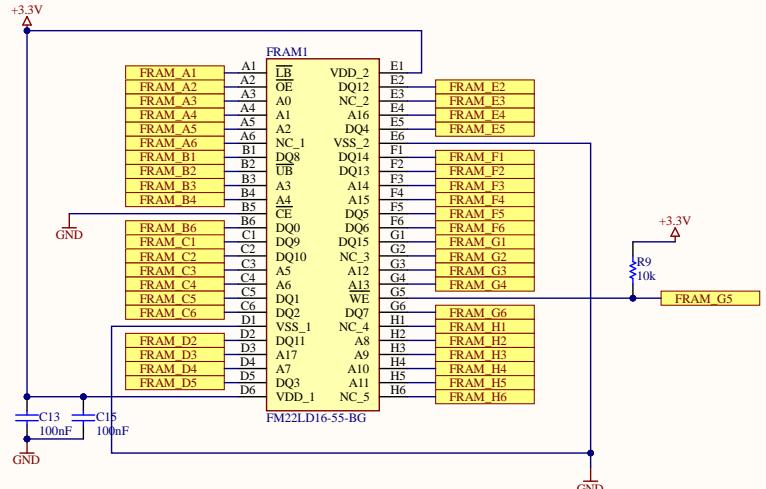
SRAM



FLASH



FRAM



Title
Core

Size
A3

Revision
1.0

File Name
Memory.SchDoc

Last updated
06/04/2021

Designers
ML, PFA, EW

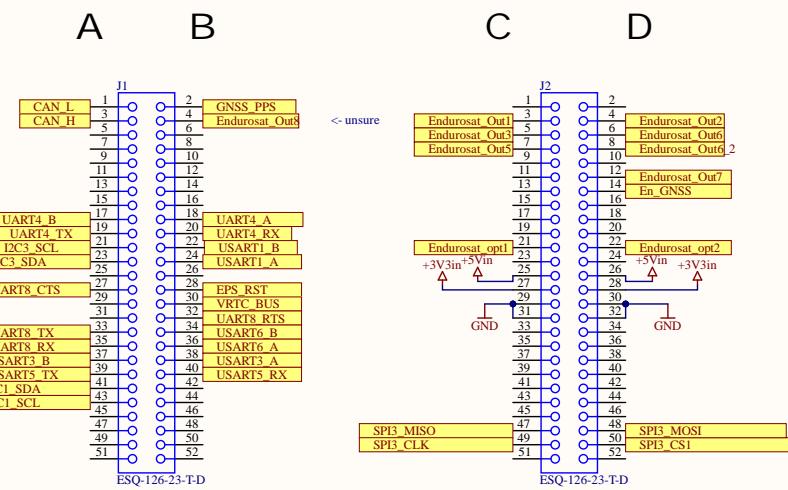
Project
CHESS - OBC

EPFL SPACECRAFT TEAM

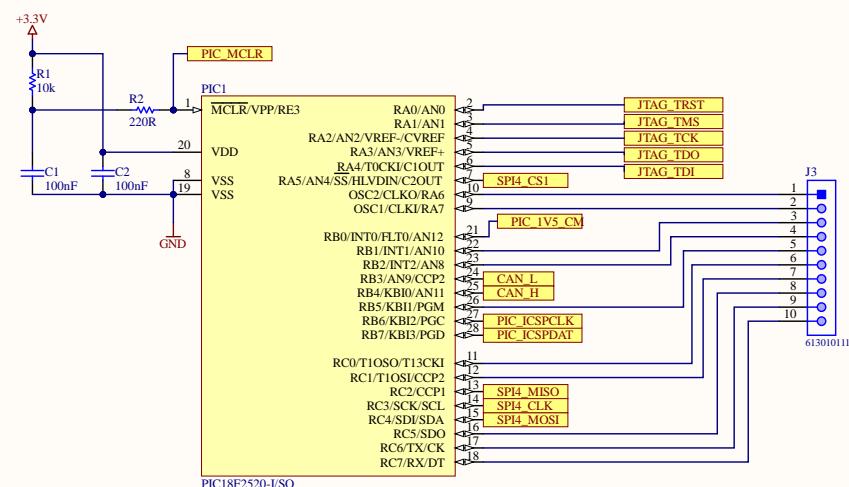


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CH-1015 Lausanne

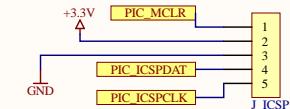
PC/104 Connector



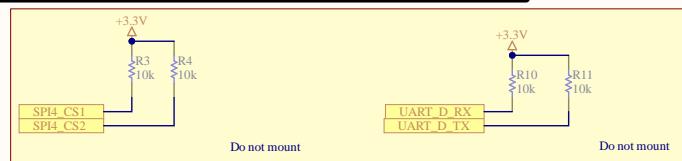
PIC (PIC18(L)F26K83)

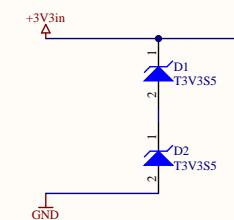
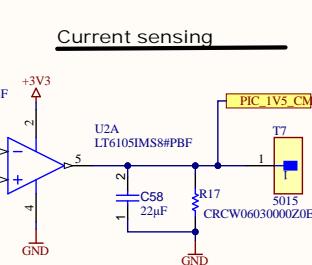
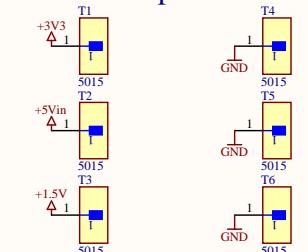
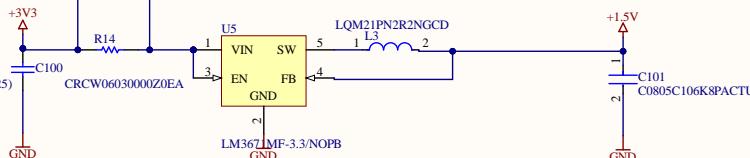
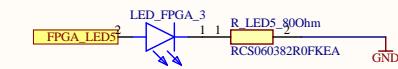
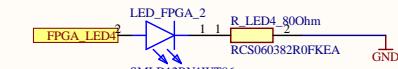
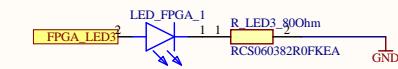
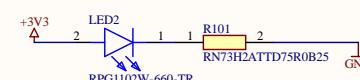
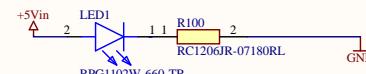
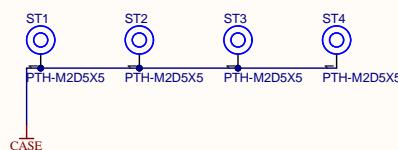


PICKit connector



Pull-ups for SPI and UART

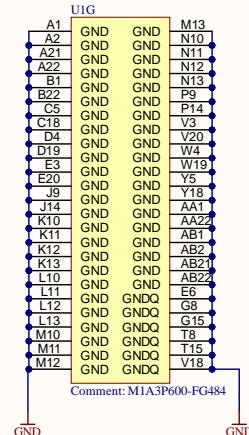
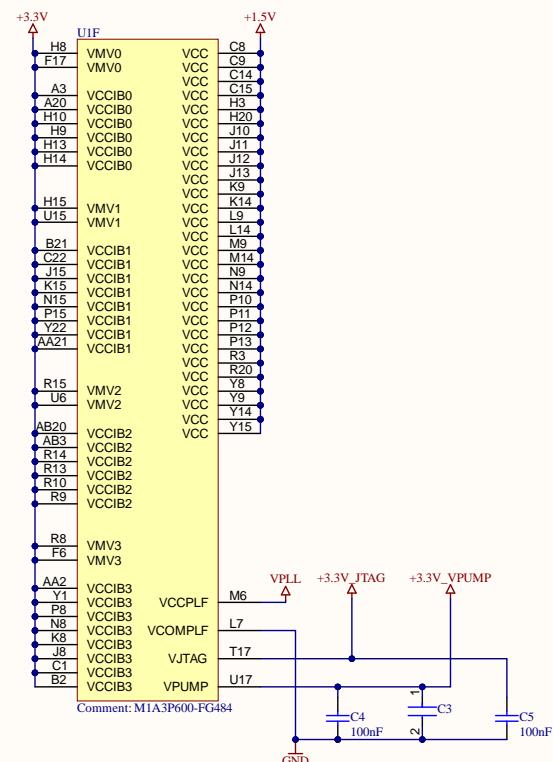


Surge voltage protection**Over/under-voltage detection****Testpoints****1.5 V supply to FPGA core****LEDs****Mechanical fixation points**

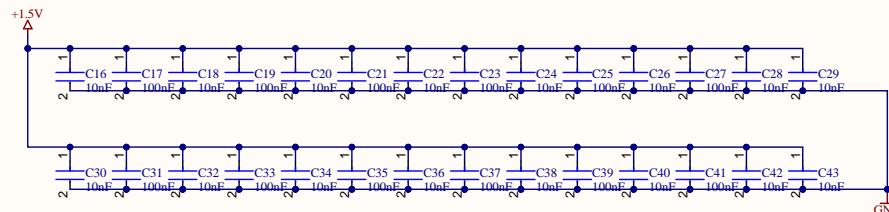
| Title | | | Project |
|----------------------|----------|-------------------------|----------------------|
| Power and mechanical | | | CH335 - OBC |
| Size | Revision | File Name | EPFL |
| A3 | 1.0 | Power.SchDoc | EPFL SPACECRAFT TEAM |
| | | Last updated 07/04/2021 | EPFL Spacecraft Team |
| | | | EPFL Space Center |
| | | | PPH335 station 13 |
| | | | CH-1015 Lausanne |
| Page 4 | of 8 | Designers | ML, PFA, EW |

FPGA POWER

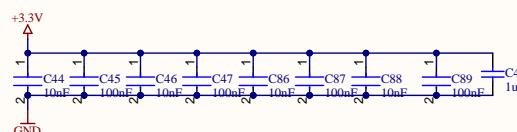
FPGA POWER PINS



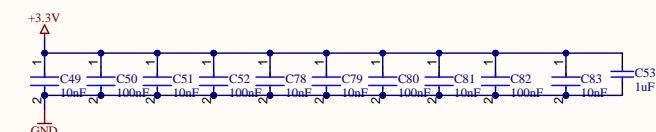
CORE DECOUPLING



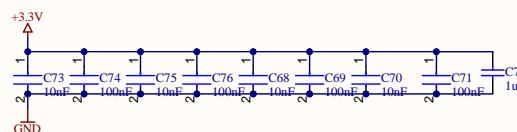
BANKO DECOUPLING



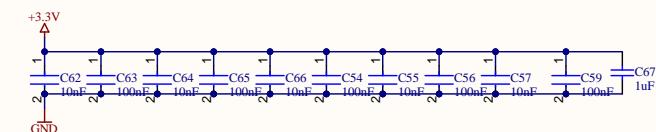
BANK1 DECOUPLING



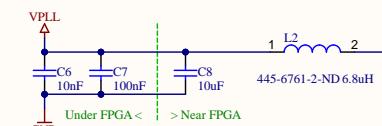
BANK2 DECOUPLING



BANK3 DECOUPLING



PLL DECOUPLING

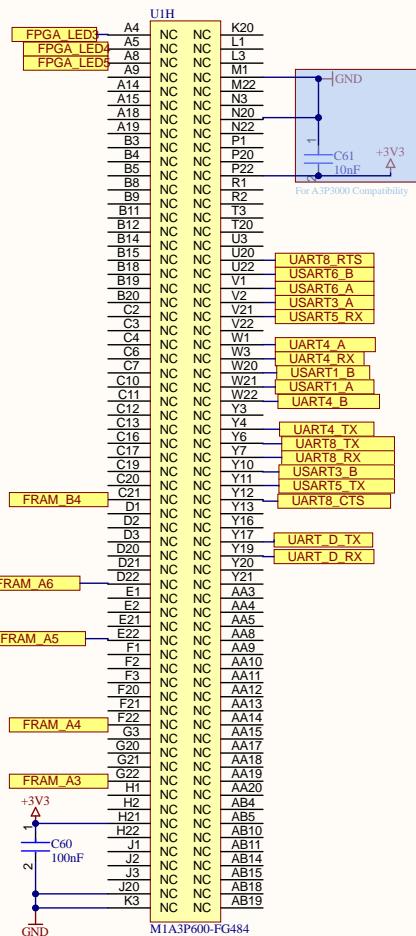


| Title: FPGA - Power | | | Project: CHESS - OBC | | EPFL SPACECRAFT TEAM |
|---------------------|----------|------------------|----------------------|--|----------------------|
| Size | Revision | File Name | Last updated | | |
| A3 | 1.0 | FPGAPower.SchDoc | 07/04/2021 | | EPFL Spacecraft Team |
| | | | | | EPFL Space Center |
| | | | | | PPH335 station 13 |
| | | | | | CH-1015 Lausanne |

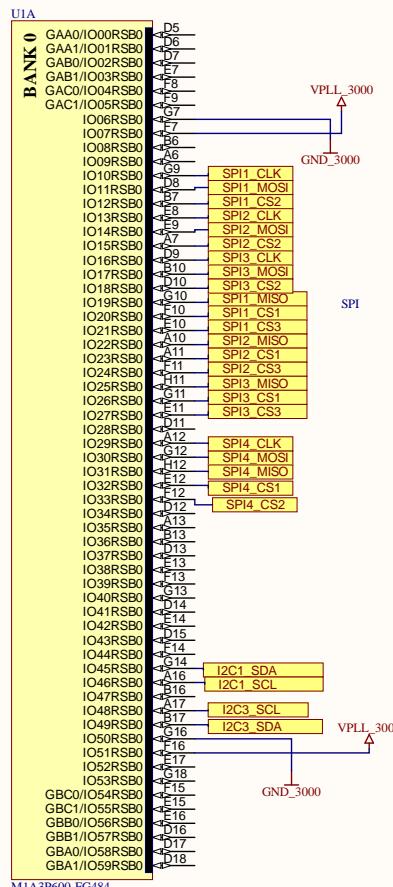
Page 5 of 8 Designers: ML, PFA, EW

FPGA BANKs (left side, bottom view)

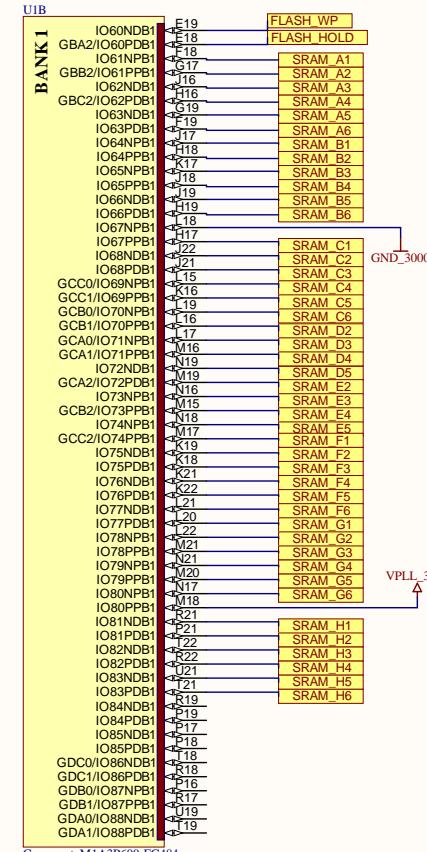
BANK0: SERIAL COMS



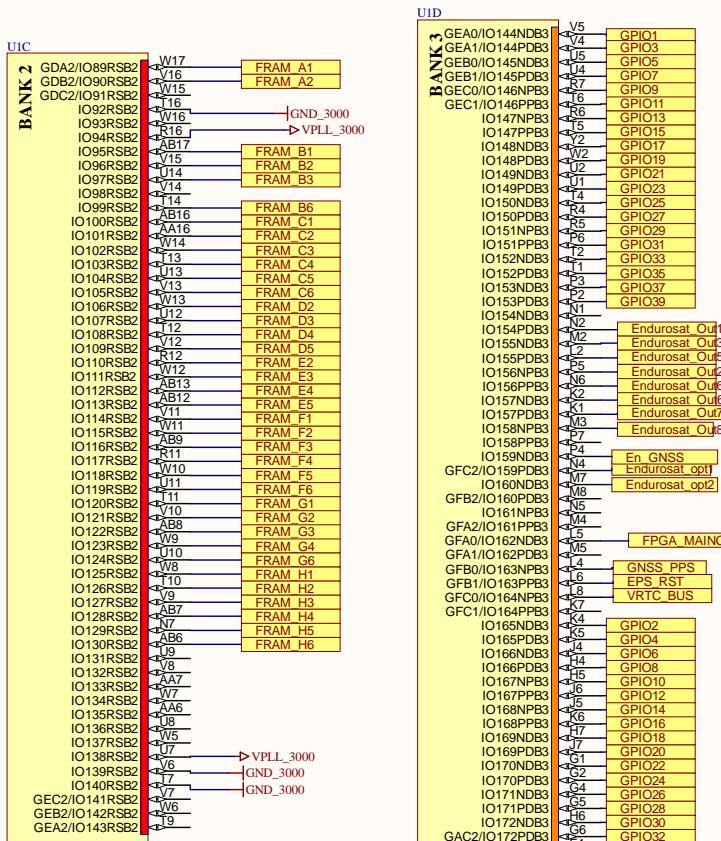
BANK1: SRAM



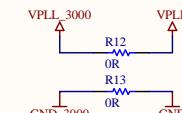
BANK2: USER INTERFACE



BANK3: USER IO



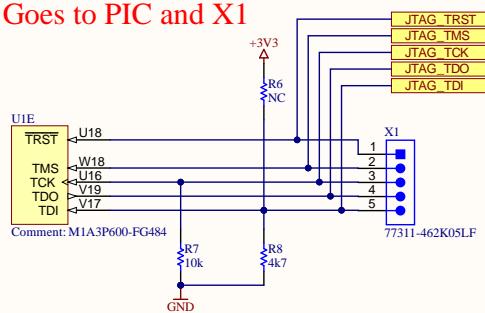
R18, R19 have to be 0 ohm for using A3P3000



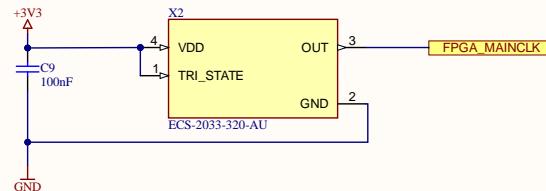
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|-----------------------------------|------------------------|---|--|---|
| Title FPGA - Banks | | | Project CHESS - OBC |  |
| Size A3 | Revision 1.0 | File Name FPGABanks.SchDoc |  EPFL SPACECRAFT TEAM | EPFL Spacecraft Team EPFL Space Center PPH335 station 13 CH-1025 Lausanne |
| Last updated 07/04/2021 | | | | |
| Page 6 of 8 | Designers FM | | | |

JTAG

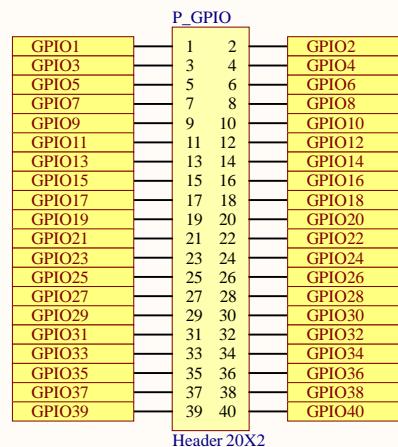
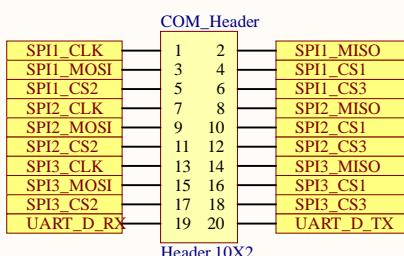
Goes to PIC and X1



FPGA OSCILLATOR (MAIN CLOCK): Sapristi board uses 32 MHz, same as on OBC on Astrocard sat.



Communication



| Title Headers | | | Project CHESS - OBC | EPFL |
|------------------|-----------------|----------------------------------|----------------------------|--|
| Size A4 | Revision 1.0 | File Name GPIO_Headers.SchDoc | Last updated 06/04/2021 | EPFL SPACECRAFT TEAM |
| | | | Designers ML, PFA, EW | EPFL Spacecraft Team EPFL Space Center PPH335 station 13 CH-1015 Lausanne |
| Page 8 of 8 | | | | |