Olimex Extension camIO v0.1

2024-12-10

Intergalaktik d.o.o.
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Year: 2024.

Change project informations under.
File>>Schamatic Setup>>Text Variables

!!!
Olimex board is delivering MAX 2.5V on connector.
You can use 2.5V output signals for 3.3V.
Be carefull FPGA input only tolerate MAX 2.5V!
!!!

!!
VCC input is connected over 500mA resetable fuse!
Maximum current for VCC is set to 500mA.
It may be possible to drain more current but
you will need add different FUSE and use it at your own risk!
3.3V step up is limited to 400mA
Idea behind limits is that you can use all 3 extensions slots
at once without any risk od draining to much!
!!

!!!
There is same pinout part for 5V step up.
So you can have 5V with just one IC change.
For more details check Power page.
!!!

A1 Dedicated clock input pins are:
IO_SB_A8: CLK0
IO_SB_A7: CLK1
IO_SB_A6: CLK2
IO_SB_A5: CLK3
You can use them all as differential inputs.

We are not able to use any on extension boards.

It is also possible to use any GPIO as a clock input. The only thing to note here is that the signal must be routed via the routing structure to the entry point of the global clock mesh. These paths are longer than via the dedicated clock pins, which is why it is essential to pay attention to clock skew.

TOP VIEW

Dimension
File: dimension.kicad_sch

Main Sheet
File: main.kicad_sch

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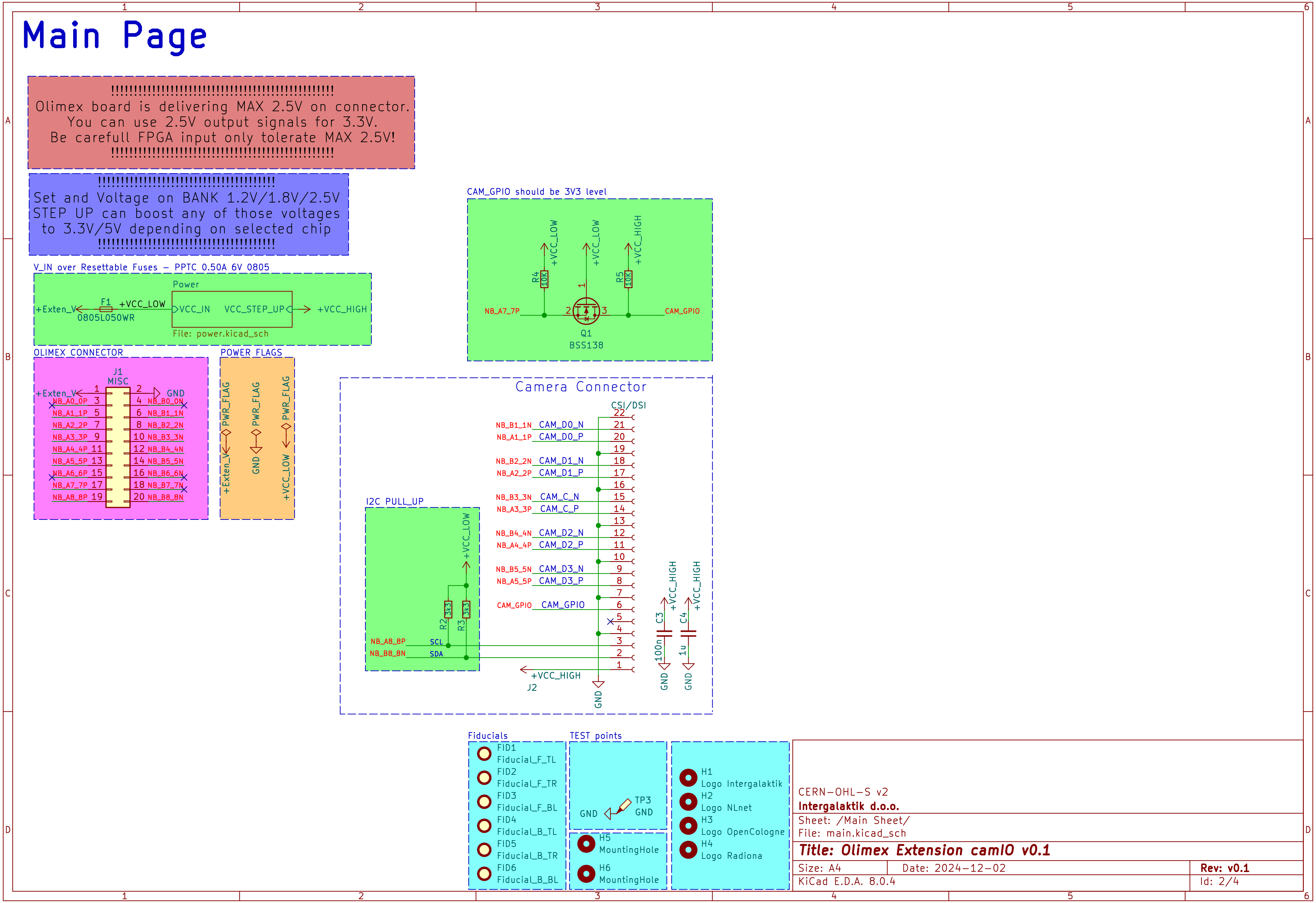
Sheet: /
File: camIO.kicad_sch

Title: Olimex Extension camIO v0.1

Size: A4	Date: 2024-12-02	**Rev: v0.1**
KiCad E.D.A. 8.0.4		Id: 1/4



Main Page
!!
Olimex board is delivering MAX 2.5V on connector.
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!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
Set and Voltage on BANK 1.2V/1.8V/2.5V
STEP UP can boost any of those voltages
to 3.3V/5V depending on selected chip
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
V_IN over Resettable Fuses - PPTC 0.50A 6V 0805
+Exten_V
F1
0805L050WR
+VCC_LOW
Power
VCC_IN
VCC_STEP_UP
+VCC_HIGH
File: power.kicad_sch
OLIMEX CONNECTOR
J1
MISC
+Exten_V
GND
NB_A0_0P 3
4 NB_B0_0N
NB_A1_1P 5
6 NB_B1_1N
NB_A2_2P 7
8 NB_B2_2N
NB_A3_3P 9
10 NB_B3_3N
NB_A4_4P 11
12 NB_B4_4N
NB_A5_5P 13
14 NB_B5_5N
NB_A6_6P 15
16 NB_B6_6N
NB_A7_7P 17
18 NB_B7_7N
NB_A8_8P 19
20 NB_B8_8N
POWER FLAGS
PWR_FLAG
+Exten_V
PWR_FLAG
GND
PWR_FLAG
+VCC_LOW
CAM_GPIO should be 3V3 level
+VCC_LOW
+VCC_LOW
+VCC_HIGH
R4 10K
R5 10K
NB_A7_7P
CAM_GPIO
Q1
BSS138
Camera Connector
CSI/DSI
NB_B1_1N CAM_D0_N 21
NB_A1_1P CAM_D0_P 20
NB_B2_2N CAM_D1_N 18
NB_A2_2P CAM_D1_P 17
NB_B3_3N CAM_C_N 15
NB_A3_3P CAM_C_P 14
NB_B4_4N CAM_D2_N 12
NB_A4_4P CAM_D2_P 11
NB_B5_5N CAM_D3_N 9
NB_A5_5P CAM_D3_P 8
CAM_GPIO CAM_GPIO 6
I2C PULL_UP
+VCC_LOW
R2 3k3
R3 3k3
NB_A8_8P SCL
NB_B8_8N SDA
+VCC_HIGH
J2
GND
C3 100n
C4 1u
+VCC_HIGH
+VCC_HIGH
GND
GND
Fiducials
FID1 Fiducial_F_TL
FID2 Fiducial_F_TR
FID3 Fiducial_F_BL
FID4 Fiducial_B_TL
FID5 Fiducial_B_TR
FID6 Fiducial_B_BL
TEST points
GND
TP3 GND
H5 MountingHole
H6 MountingHole
H1 Logo Intergalaktik
H2 Logo NLnet
H3 Logo OpenCologne
H4 Logo Radiona
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Sheet: /Main Sheet/
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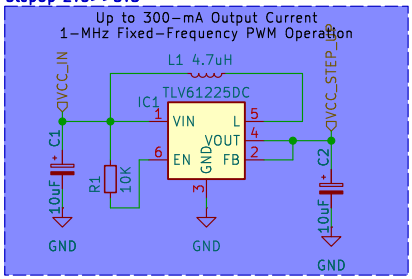
Power Page

StepUp 2V5>>3V3



Use TPS61225DC for 2.5V>>3.3V
Use TPS61222DC for 2.5V>>5V

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Sheet: /Main Sheet/Power/
File: power.kicad_sch

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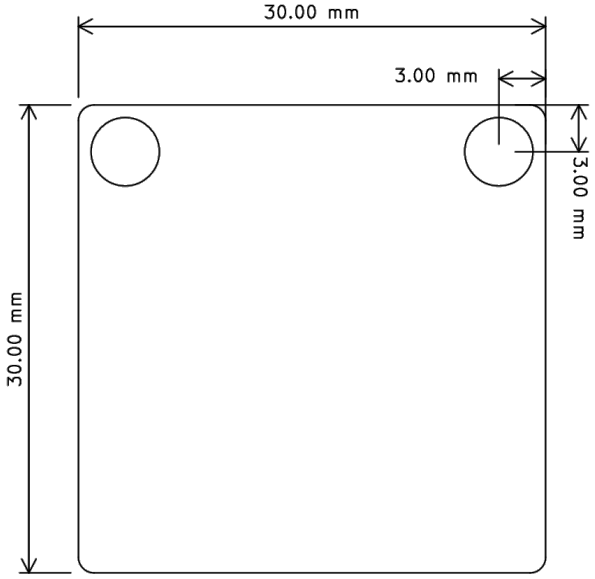
Dimension Page



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