Extension for Olimex EVB – tmrIO v0.1

2025-04-07
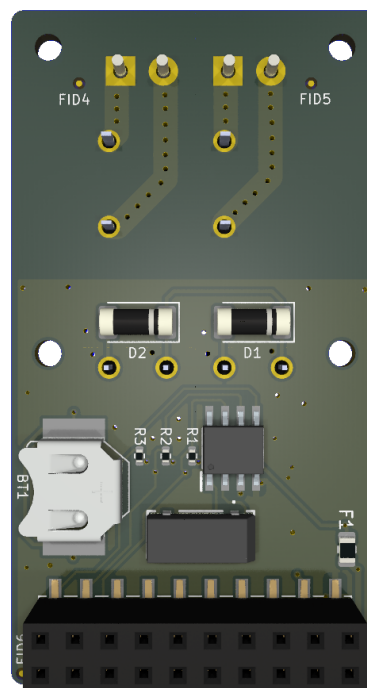
Intergalaktik d.o.o.
License: CERN-OHL-S v2
Year: 2024.

TOP VIEW
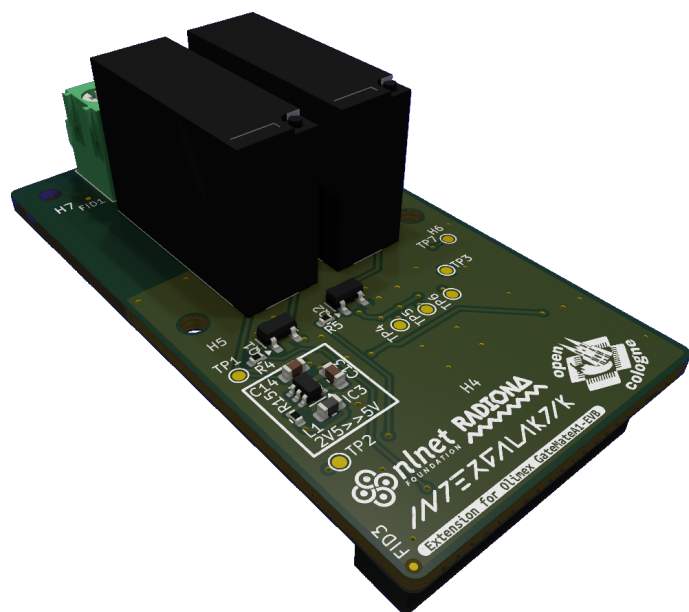
BOTTOM VIEW

Main Sheet
File: main.kicad_sch

Dimensions sheet
File: dimensions.kicad_sch

CERN-OHL-S v2
Intergalaktik d.o.o.
Sheet: /
File: tmrIO.kicad_sch
Title: Extension for Olimex EVB – tmrIO v0.1
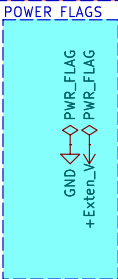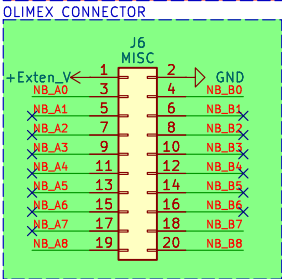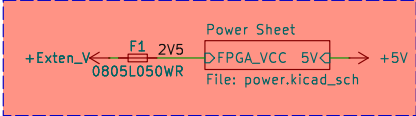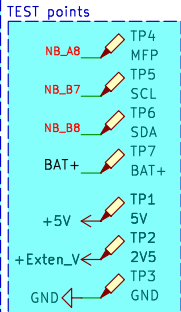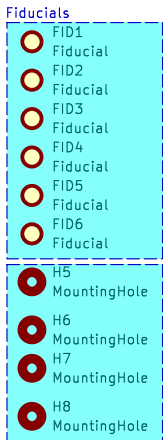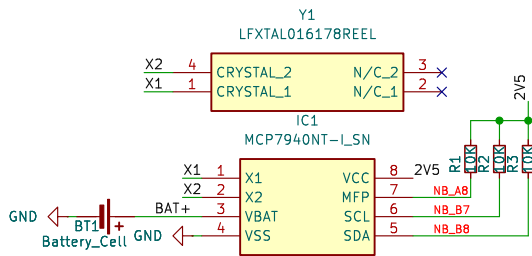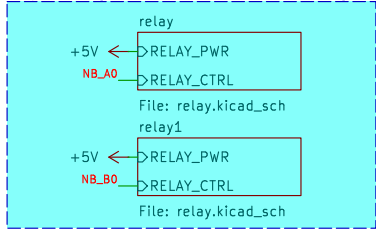| Size: A4 | Date: 2024-12-03 | **Rev: v0.1** |
| KiCad E.D.A. 9.0.0 | | Id: 1/6 |

Main Page

!!!
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!
!!!

2V5 over Resettable Fuses – PPTC 0.50A 6V 0805
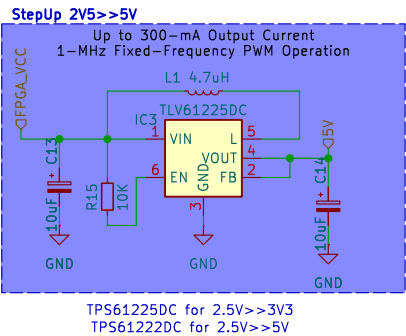5V step up can only go to 400mA

Power Sheet

+Exten_V ← F1 2V5 ▷ FPGA_VCC 5V ◁ → +5V
0805L050WR
File: power.kicad_sch

OLIMEX CONNECTOR

J6
MISC

+Exten_V	1	2	GND
NB_A0	3	4	NB_B0
NB_A1	5	6	NB_B1
NB_A2	7	8	NB_B2
NB_A3	9	10	NB_B3
NB_A4	11	12	NB_B4
NB_A5	13	14	NB_B5
NB_A6	15	16	NB_B6
NB_A7	17	18	NB_B7
NB_A8	19	20	NB_B8

POWER FLAGS

GND PWR_FLAG
+Exten_V PWR_FLAG

Those schematics are cloned,
If you change one sch, other will also change!

relay

+5V ← ▷ RELAY_PWR
NB_A0 ▷ RELAY_CTRL
File: relay.kicad_sch

relay1

+5V ← ▷ RELAY_PWR
NB_B0 ▷ RELAY_CTRL
File: relay.kicad_sch

Y1
LFXTAL016178REEL

X2	4	CRYSTAL_2	N/C_2	3
X1	1	CRYSTAL_1	N/C_1	2

IC1
MCP7940NT-I_SN

2V5

R1 R2 R3
10k 10k 10k

X1	1	X1	VCC	8	2V5
X2	2	X2	MFP	7	NB_A8
BAT+	3	VBAT	SCL	6	NB_B7
GND	4	VSS	SDA	5	NB_B8

GND ◁ BT1 + Battery_Cell GND ▷

Fiducials

FID1 Fiducial
FID2 Fiducial
FID3 Fiducial
FID4 Fiducial
FID5 Fiducial
FID6 Fiducial

H5 MountingHole
H6 MountingHole
H7 MountingHole
H8 MountingHole

TEST points

	TP4 MFP
NB_A8	
NB_B7	TP5 SCL
NB_B8	TP6 SDA
BAT+	TP7 BAT+
+5V	TP1 5V
+Exten_V	TP2 2V5
GND	TP3 GND

H1 Logo Intergalaktik
H2 Logo NLnet
H3 Logo OpenCologne
H4 Logo Radiona

Power Page

StepUp 2V5>>5V

Up to 300-mA Output Current
1-MHz Fixed-Frequency PWM Operation

L1 4.7uH

TLV61225DC

IC3

Pin	Label
1	VIN
5	L
4	VOUT
6	EN
2	FB
3	GND

FPGA_VCC

C13 10uF

R15 10K

GND

5V

C14 10uF

GND

GND

TPS61225DC for 2.5V>>3V3
TPS61222DC for 2.5V>>5V

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K3

NO 3 — 1 J1
COM 2 — 2 Screw_Terminal_01x02

RELAY_PWR 4 COIL_2 COIL_1 1

G5NB-1A-HA_DC5

D1
SM4007

Q1 3
RELAY_CTRL 1 2K
R4
MMBT3904 2

GND

Intergalaktik d.o.o.

Sheet: /Main Sheet/relay/
File: relay.kicad_sch

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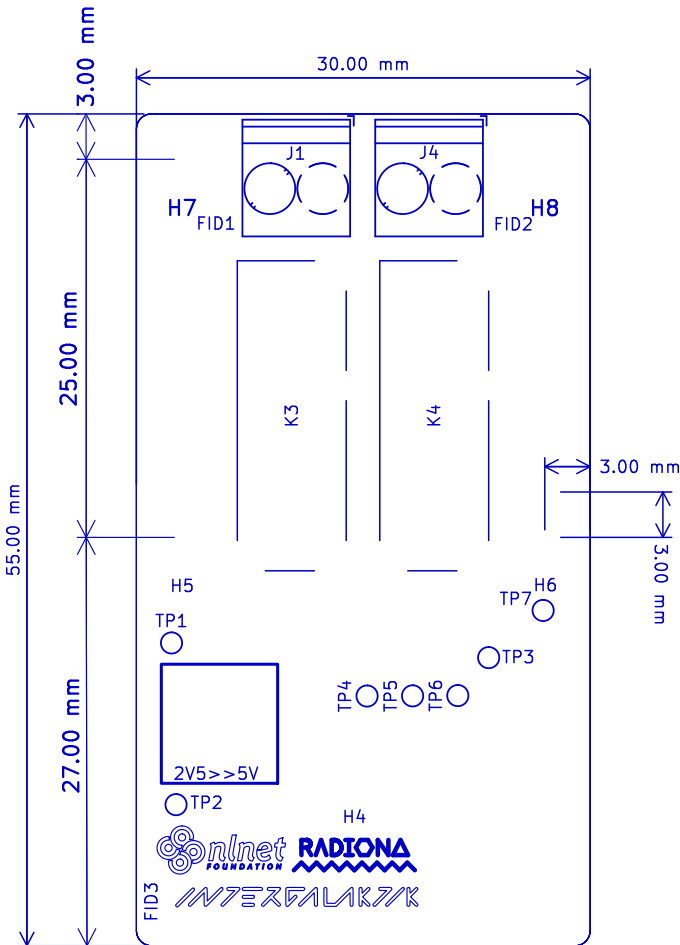| Size: A5 | Date: 2024-12-03 | **Rev: v0.1** |
| KiCad E.D.A. 9.0.0 | | Id: 4/6 |

K4

NO 3
COM 2
COIL_2 4
COIL_1 1

G5NB-1A-HA_DC5

RELAY_PWR

J4
Screw_Terminal_01x02

D2
SM4007

Q2
3
RELAY_CTRL
2K
R5
1
2
MMBT3904

GND

Dimension Page