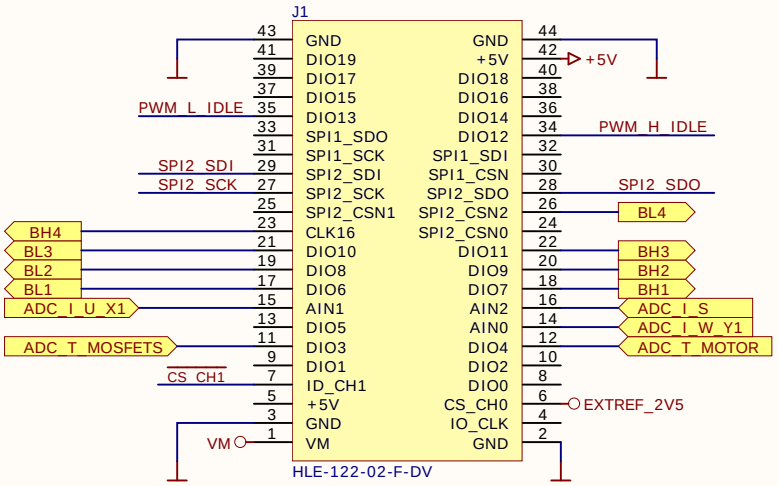
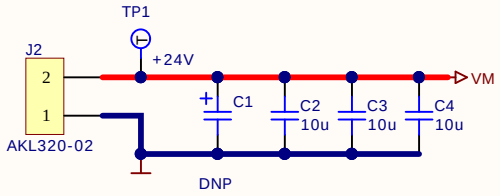
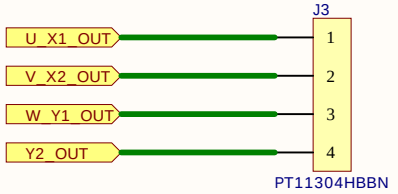
uC or Motor Controller Connector



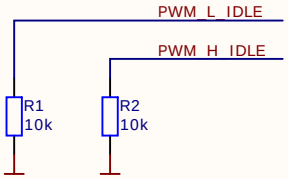
Power Connector



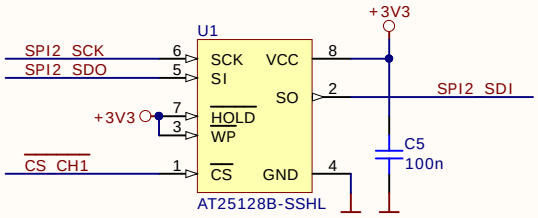
Motor Connector

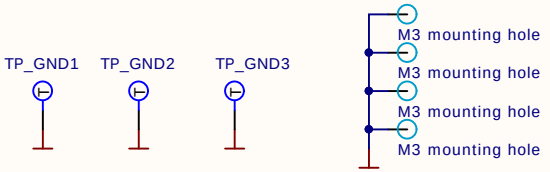


Bridge Idle State



Ident EEPROM





Title	UPS 2A/24V EVAL Main & I/O		
Size: A4	Revision: V1.1	Initial	
Date: 19.10.2017	Time: 10:24:42	Sheet 1 of 5	
File: UPS_2A_EVAL_V11_Main.SchDoc			

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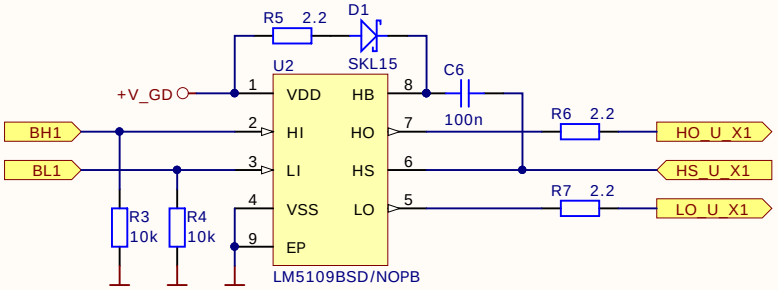
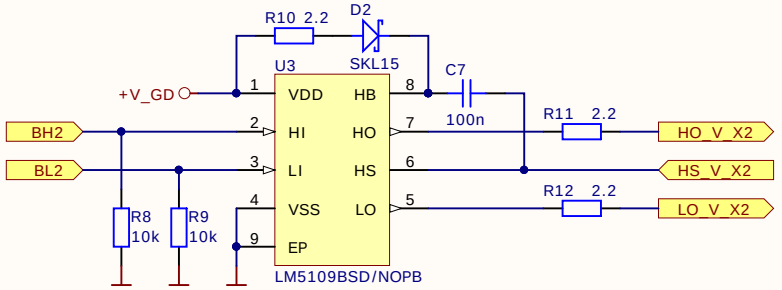
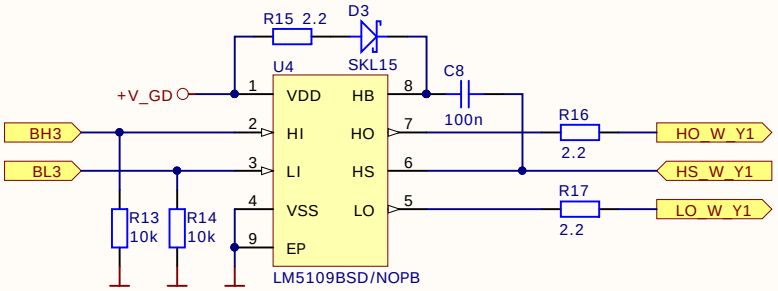
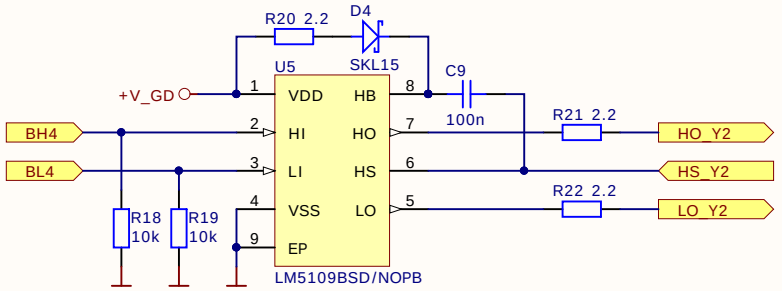
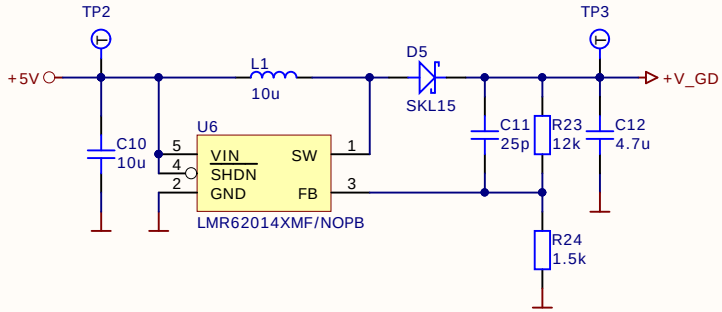
MOSFET Predrivers

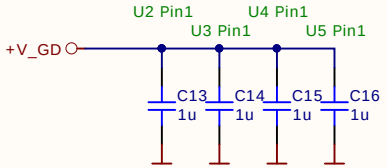












Title	**UPS 2A/24V EVAL Predrivers**		
Size: A4	Revision: V1.1	Initial	
Date: 19.10.2017	Time: 10:24:42	Sheet 2 of 6	
File: UPS_2A_EVAL_V11_Predriver.SchDoc			

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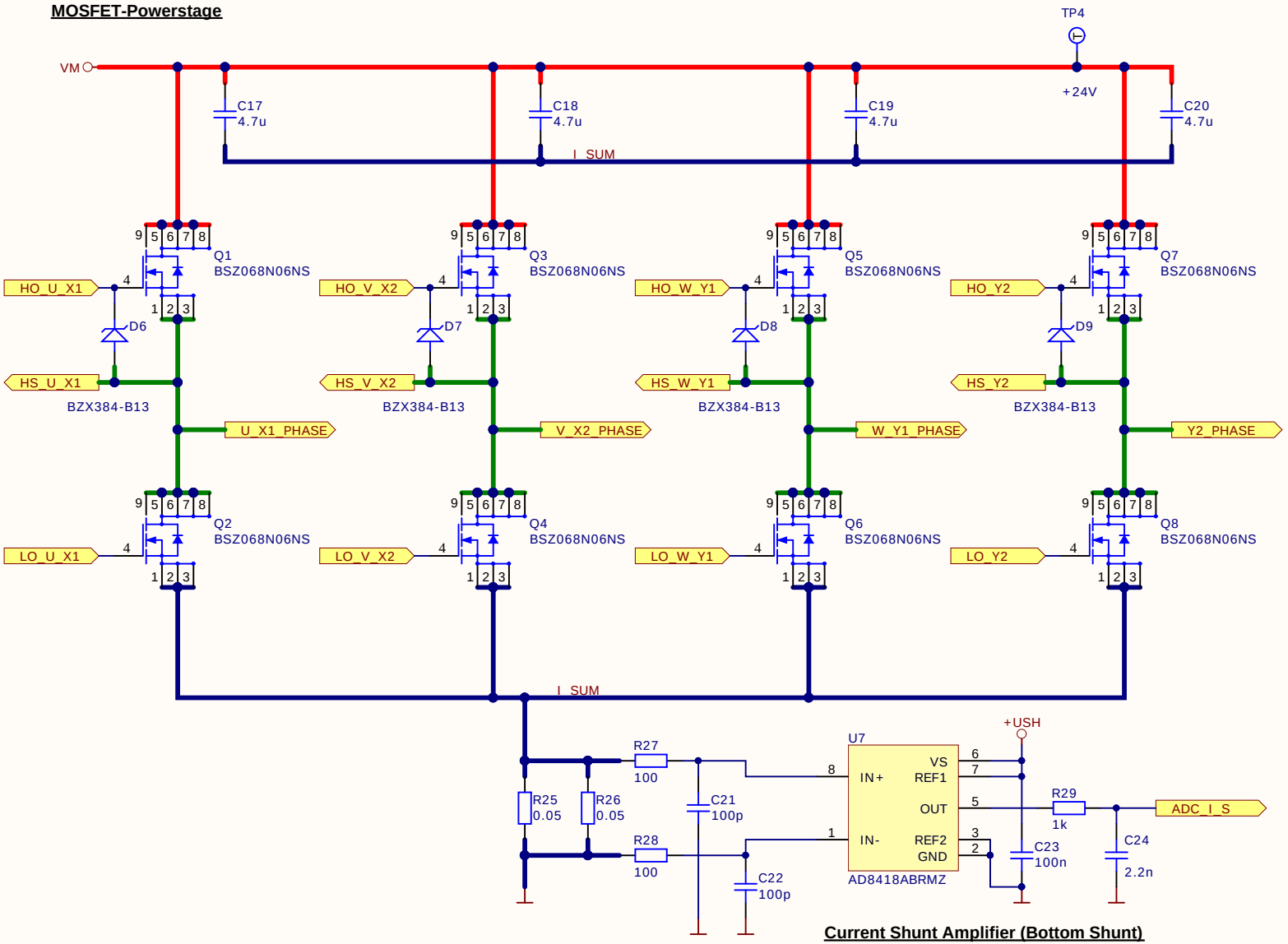
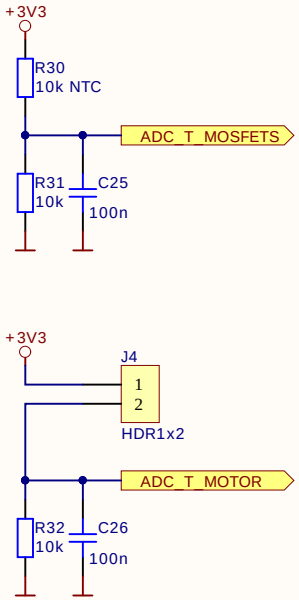
MOSFET-Powerstage

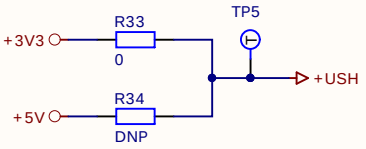


Current Shunt Amplifier (Bottom Shunt)

Temp sensing



Shunt Amplifier power select (default +3.3V)



Title **UPS 2A/24V EVAL MOSFETs**		
Size: A4	Revision: V1.1	Initial
Date: 19.10.2017 Time: 10:24:43	Sheet 3 of 5	
File: UPS_2A_EVAL_V11_MOSFETs.SchDoc		

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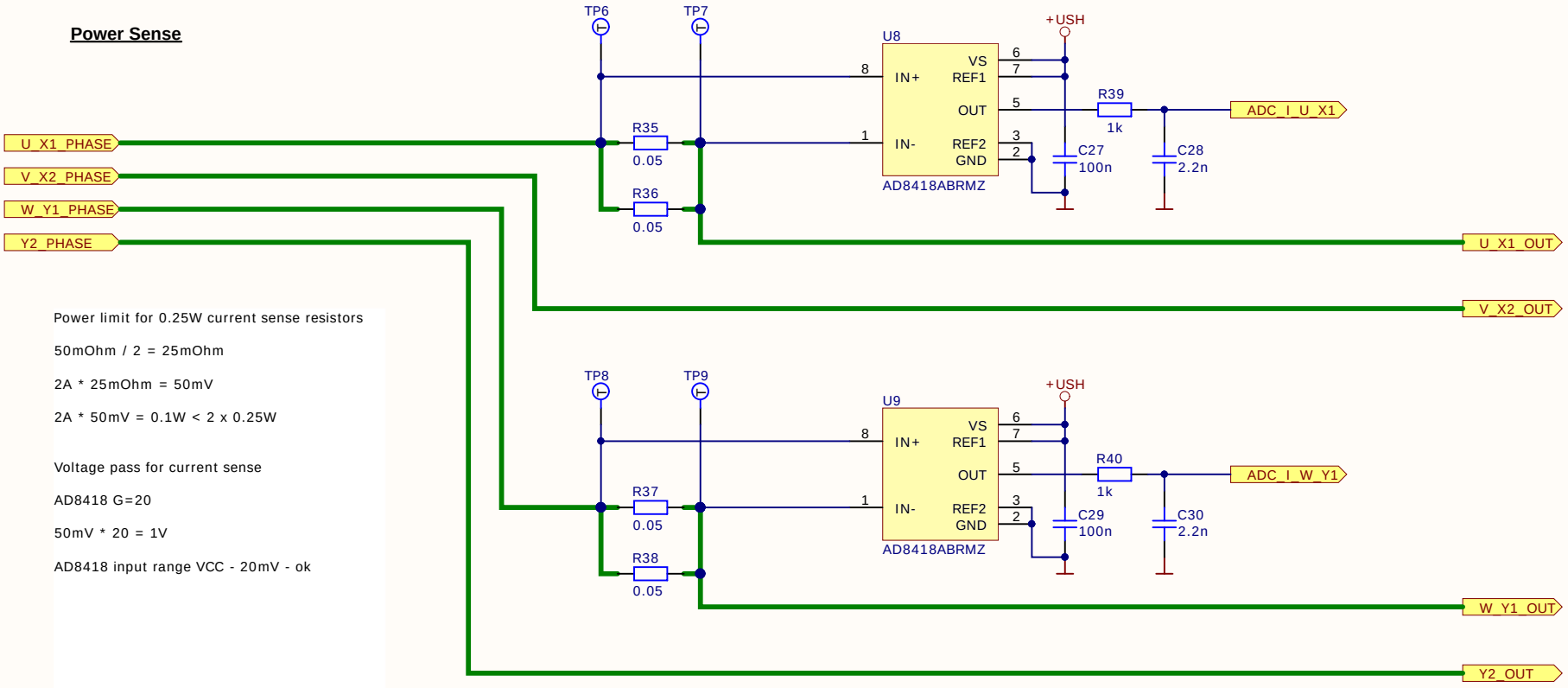
Power Sense



Power limit for 0.25W current sense resistors

50mOhm / 2 = 25mOhm

2A * 25mOhm = 50mV

2A * 50mV = 0.1W < 2 x 0.25W

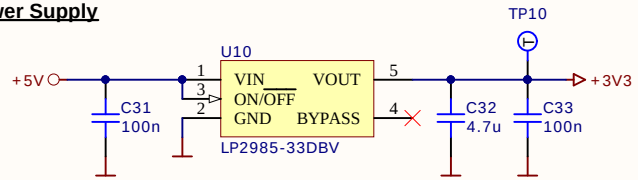
Voltage pass for current sense

AD8418 G=20

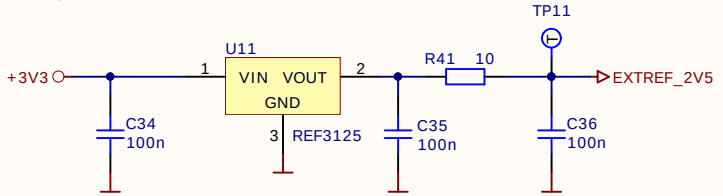
50mV * 20 = 1V

AD8418 input range VCC - 20mV - ok

3.3V Power Supply



Ext 2.5V Voltage Reference



Title: UPS 2A/24V EVAL Power Sense		
Size: A4	Revision: V1.1	Initial
Date: 19.10.2017 Time: 10:24:43	Sheet 4 of 5	
File: UPS_2A_EVAL_V11_Power_Sense.SchDoc		

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UPS_2A_EVAL-V1.0 -> UPS_2A_EVAL-V1.1
1. Changed shunt resistors to 0.05 Ohm

UPS_2A_EVAL-V0.91 -> UPS_2A_EVAL-V1.0
1. Changed J2 to produced by Metz Connect AKL320-02
2. Added pull-down resistors to gate inputs on Predriver sheet, renumbered resistors
3. Changed C6-C9 voltage from 100V to 50V
4. Changed D1-D5 to SKL15, corrected polarity

UPS_2A_EVAL-V0.9 -> UPS_2A_EVAL-V0.91
1. Corrected log sheet
2. Moved input power capacitors to Main sheet
3. Renumbered C13 to C1 with DNP sign
4. Replaced C14 with three 10uF 35V capacitors
5. Renumbered all capacitors

UPS_10A_EVAL-V0.91 -> UPS_2A_EVAL-V0.9
1. Deleted SPI_ADC signal names from J1
2. Changed Q1-Q8 to BSZ068N06NS
3. Changed current sense resistors to 0.1 Ohm 0.25W
4. Changed aluminium elkos C13,C14 to 680uF 35V
5. Changed capacitors C15-C18 to 4.7uF 50V

UPS_10A_EVAL-V0.9(pre3) -> UPS_10A_EVAL-V0.91
1. Deleted unused on board SPI_ADC signals from J1
2. Changed Q1-Q8 to BSZ068N06NS
3. Changed current sense resistors to 0.1 Ohm 0.25W
4. Changed aluminium elkos C13,C14 to 680uF 35V
5. Changed capacitors C15-C18 to 4.7uF 50V

UPS_10A_EVAL-V0.9pre2 -> UPS_10A_EVAL-V0.9pre3
1. Renumbered TPs

UPS_10A_EVAL-V0.9pre1 -> UPS_10A_EVAL-V0.9pre2
1. Deleted unused MCLK signals from J1
2. Renumbered capacitors

UPS_10A_DEV-V0.9pre6 -> UPS_10A_EVAL-V0.9pre1
1. Deleted Delta-Sigma current measurement parts
2. Moved current measure amplifiers near to current sense resistors
3. Moved pover supplies to sheet 4
4. Deleted Phase_Current sheet (5)
4. Renumbered components on sheets 3 & 4

V0.9pre5 -> V0.9pre6
1. Added 100n capacitors to AD7403 output side power

V0.9pre5 -> V0.9pre6
1. Removed LC from power output
2. Removed voltage measurement from sheet 4
3. Added solder bridge resistors to select U10/U11/12 power source
4. Renumbered components

V0.9pre4 -> V0.9pre5

1. Renamed net between J1 pin 9 and U8 pin 7 to MCLK_W
2. Removed RC-s from power outputs
3. Removed jumpers from current shunt circuit

ToDo:

Drafted by: Peep Narusberg
Checked by: ---
Approved by: Stephan Kubisch

Title: UPS 2A/24V EVAL log and approval		
Size: A4	Revision: V1.1	Initial
Date: 19.10.2017 Time: 10:24:43	Sheet 5 of 5	
File: UPS_2A_EVAL_V11_Log.SchDoc		

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