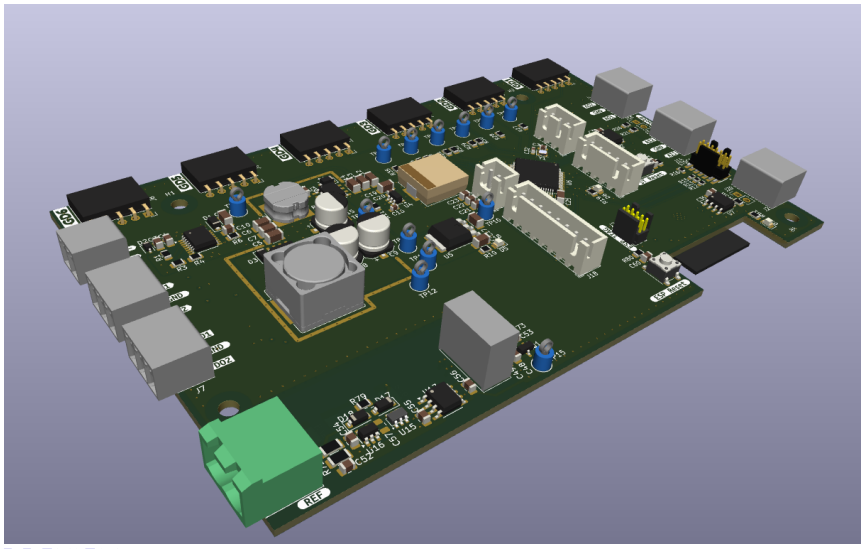
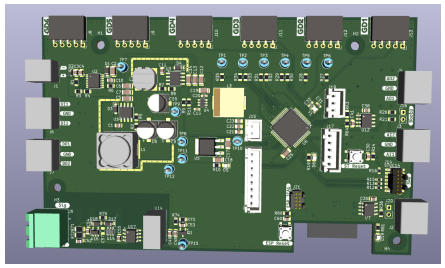


PREVIEW



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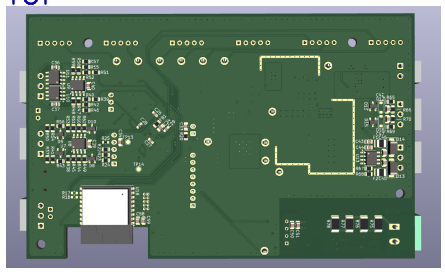

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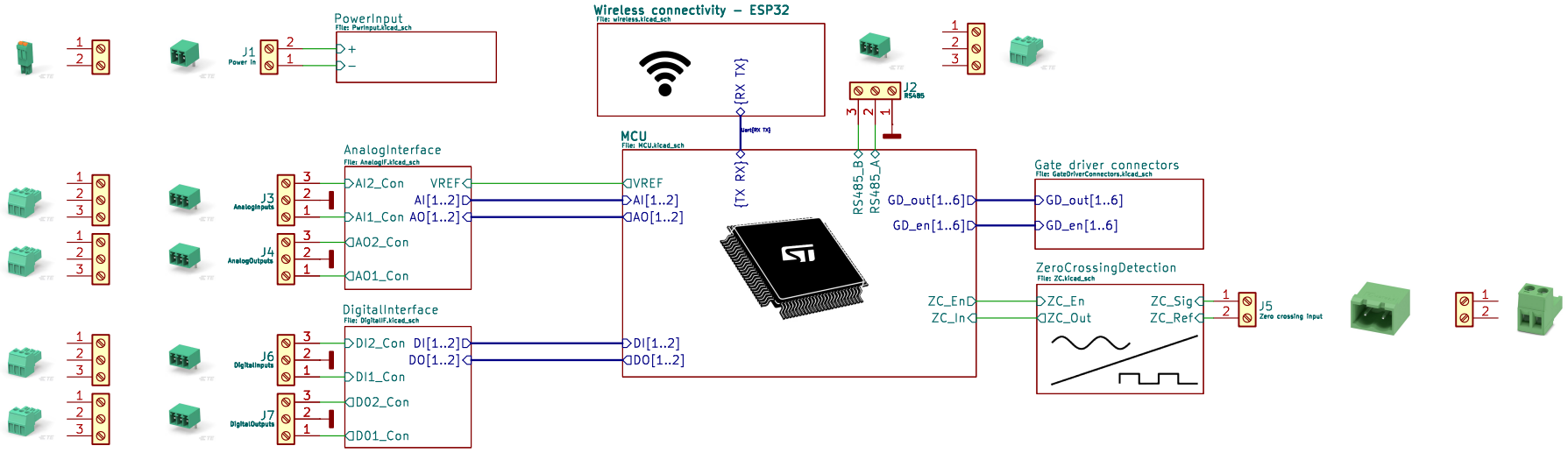

M3 mounting holes

- H1 MountingHole
- H2 MountingHole
- H3 MountingHole
- H4 MountingHole

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		Document type: Electrical schematic	Document status: In testing	
		Title, Supplementary title: Main circuit tree		
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KEM

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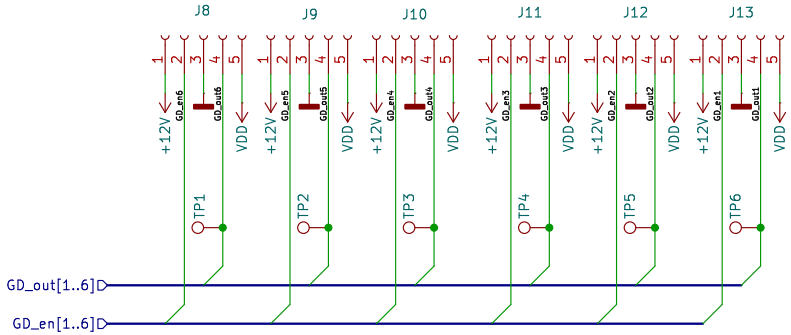
Connectors to gate drivers: 2.54 single row 5 pin receptacle.



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		Document type: Electrical schematic	Document status: In testing	
		Title, Supplementary title: Connectors to gate drivers		

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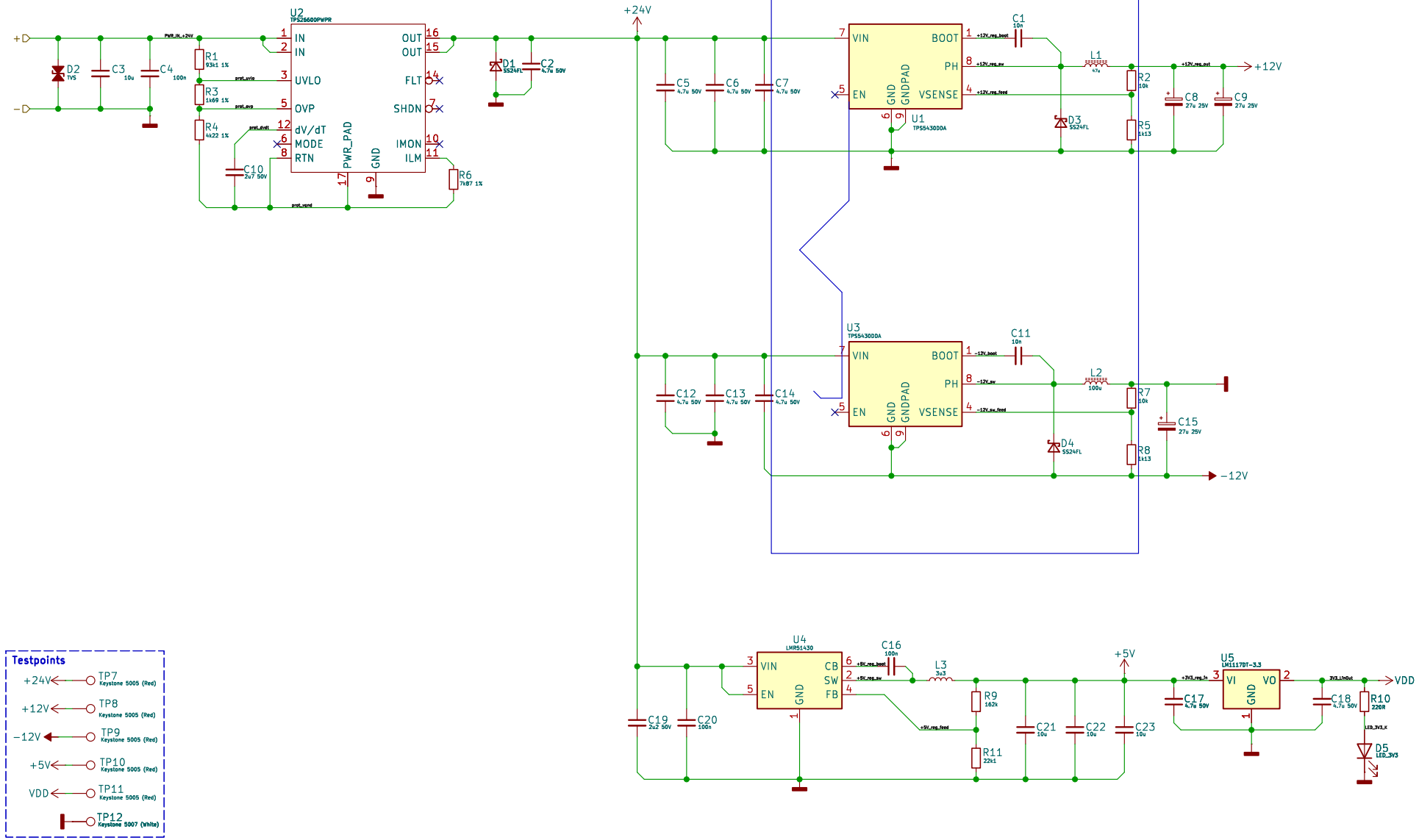

Input power protection section (for 24V):

- Reverse polarity protection
- Overvoltage protection >28V
- Undervoltage protection <20V
- Current limiting 1.5A

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		Document type: Electrical schematic	Document status: In testing	
		Title, Supplementary title: Supply power		
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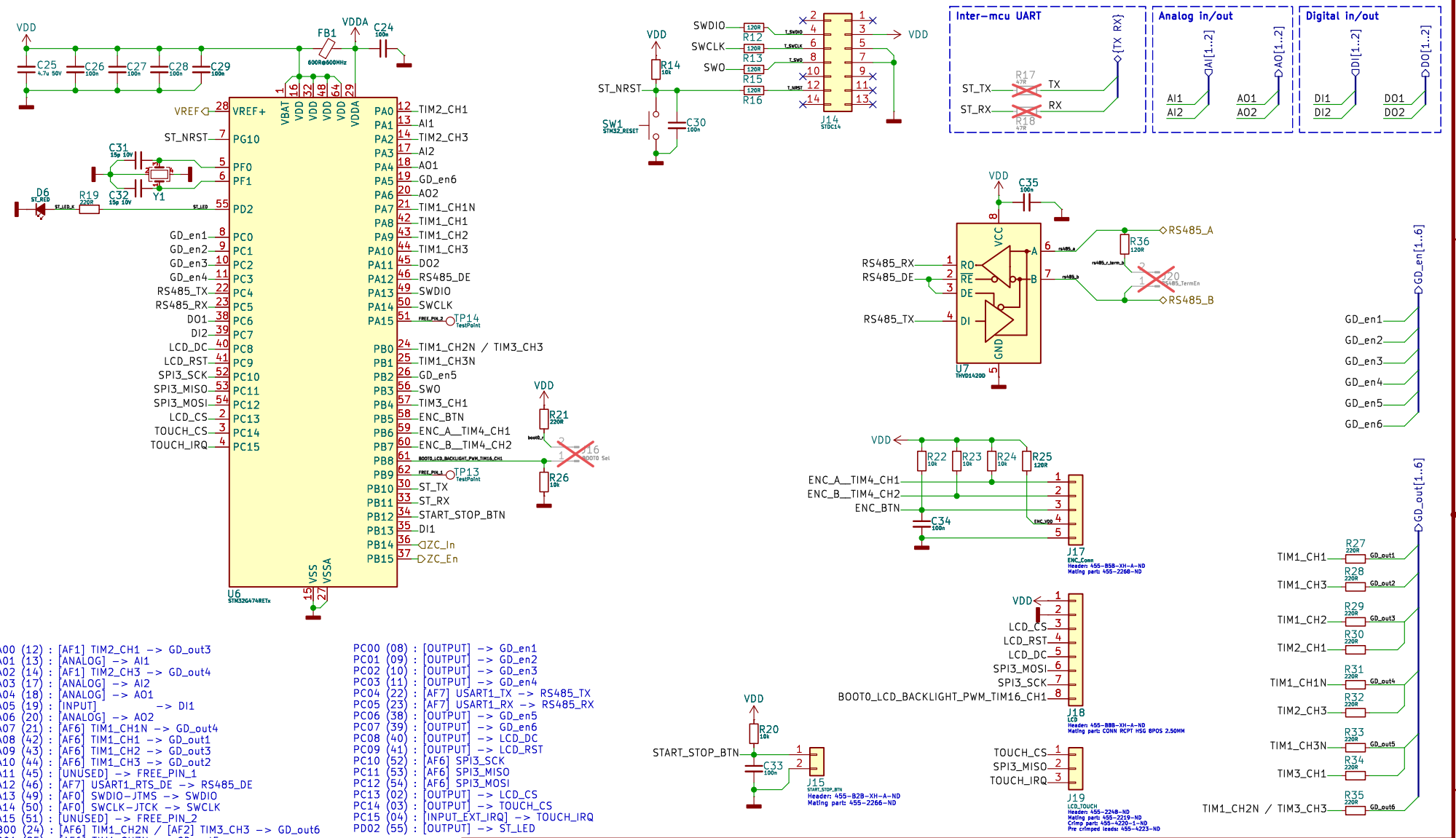

PA00 (12) : [AF1] TIM2_CH1 -> GD_out3
PA01 (13) : [ANALOG] -> AI1
PA02 (14) : [AF1] TIM2_CH3 -> GD_out4
PA03 (17) : [ANALOG] -> AI2
PA04 (18) : [ANALOG] -> AO1
PA05 (19) : [INPUT] -> DI1
PA06 (20) : [ANALOG] -> AO2
PA07 (21) : [AF6] TIM1_CH1N -> GD_out4
PA08 (42) : [AF6] TIM1_CH1 -> GD_out1
PA09 (43) : [AF6] TIM1_CH2 -> GD_out3
PA10 (44) : [AF6] TIM1_CH3 -> GD_out2
PA11 (45) : [UNUSED] -> FREE_PIN_1
PA12 (46) : [AF7] USART1_RTS_DE -> RS485_DE
PA13 (49) : [AF0] SWDIO-JTMS -> SWDIO
PA14 (50) : [AF0] SWCLK-JTCK -> SWCLK
PA15 (51) : [UNUSED] -> FREE_PIN_2
PB00 (24) : [AF6] TIM1_CH2N / [AF2] TIM3_CH3 -> GD_out6
PB01 (25) : [AF6] TIM1_CH3N -> GD_out5
PB02 (26) : [OUTPUT] -> DO1
PB03 (56) : [AF0] JTDO-TRACESWO -> SWP
PB04 (57) : [AF2] TIM3_CH1 -> GD_out5
PB05 (58) : [OUTPUT] -> DO2
PB06 (59) : [AF2] TIM4_CH1 -> ENC_A_TIM4_CH1
PB07 (60) : [AF2] TIM4_CH2 -> ENC_B_TIM4_CH2
PB08 (61) : [AF1] TIM17_CH1 / BOOT0 -> BOOT0_LCD_BACKLIGHT_PWM_TIM16_CH1
PB09 (62) : [INPUT] -> DI2
PB10 (30) : [AF7] USART3_TX -> ST_TX
PB11 (33) : [AF7] USART3_RX -> ST_RX
PB12 (34) : [INPUT] -> START_STOP_BTN
PB13 (35) : [INPUT] -> ENC_BTN
PB14 (36) : [AF1] TIM15_CH1 -> ZC_In
PB15 (37) : [OUTPUT] -> ZC_En

PC00 (08) : [OUTPUT] -> GD_en1
PC01 (09) : [OUTPUT] -> GD_en2
PC02 (10) : [OUTPUT] -> GD_en3
PC03 (11) : [OUTPUT] -> GD_en4
PC04 (22) : [AF7] USART1_TX -> RS485_TX
PC05 (23) : [AF7] USART1_RX -> RS485_RX
PC06 (38) : [OUTPUT] -> GD_en5
PC07 (39) : [OUTPUT] -> GD_en6
PC08 (40) : [OUTPUT] -> LCD_DC
PC09 (41) : [OUTPUT] -> LCD_RST
PC10 (52) : [AF6] SPI3_SCK
PC11 (53) : [AF6] SPI3_MISO
PC12 (54) : [AF6] SPI3_MOSI
PC13 (02) : [OUTPUT] -> LCD_CS
PC14 (03) : [OUTPUT] -> TOUCH_CS
PC15 (04) : [INPUT_EXT_IRQ] -> TOUCH_IRQ
PD02 (55) : [OUTPUT] -> ST_LED

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Document type	Document status
Electrical schematic	In testing

Title, Supplementary title

uC pin mapping

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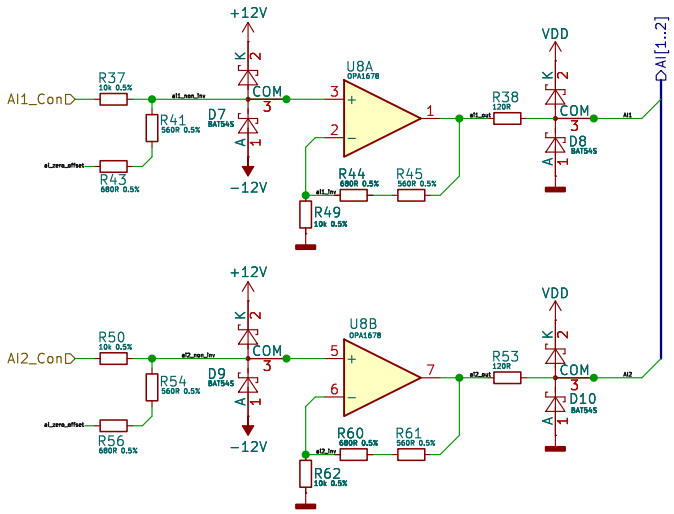
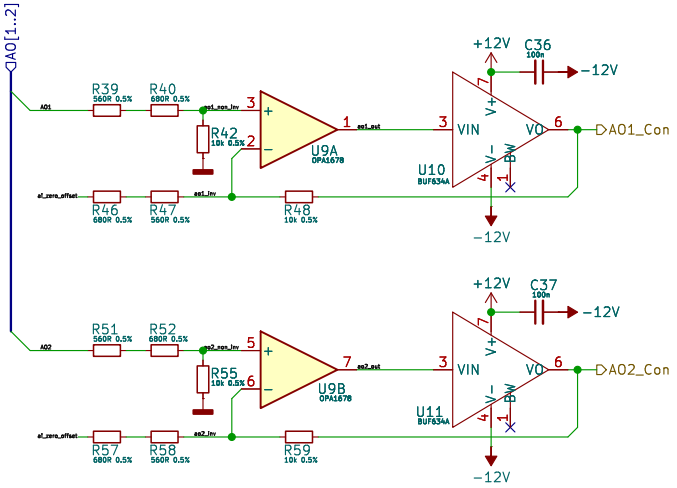
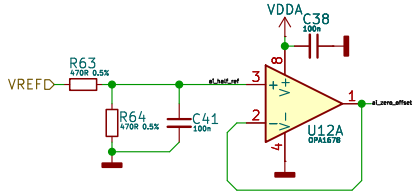
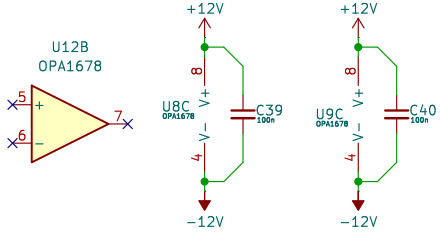






Vref voltage from STM is set to output approximately 2.48V
Precise enough voltage divider is used with opamp to generate half reference (zero bias signal).



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		Document type: Electrical schematic	Document status: In testing	
		Title, Supplementary title: Analog interface		
			Rev.: A	Date of issue: 2025-01-26
			Lang.: EN	Sheet: 6/8

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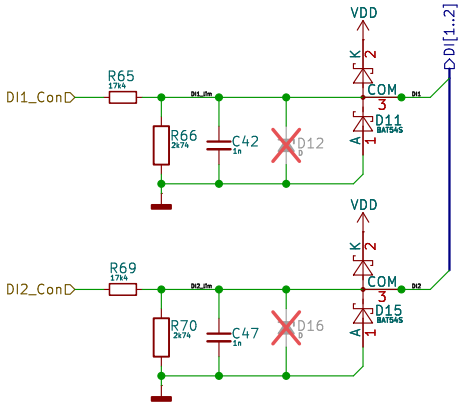

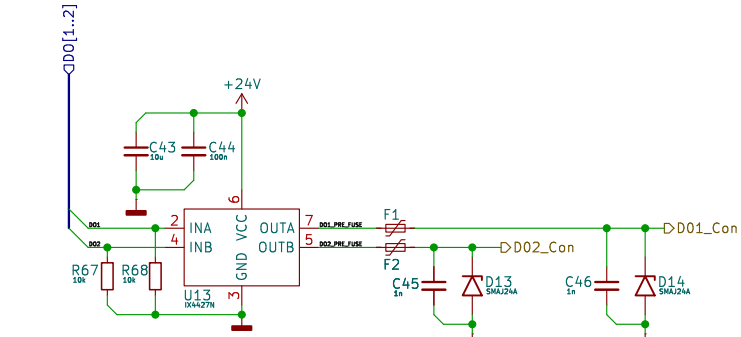

F1 and F1 – Resetable fuses: 250mA Trip 100mA Hold

ISO1212DBQR

NSD10-S

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		Title, Supplementary title: Digital interface		

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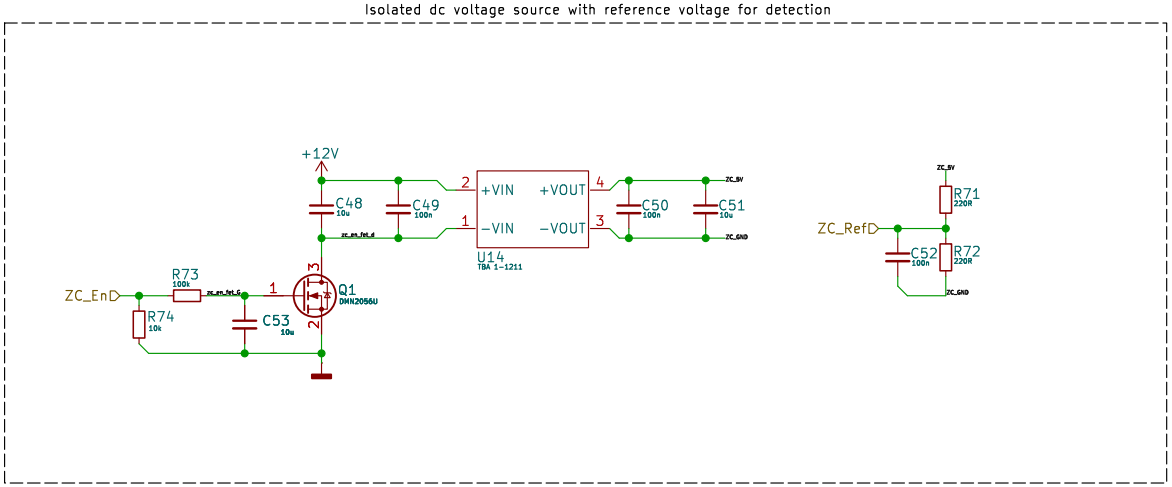
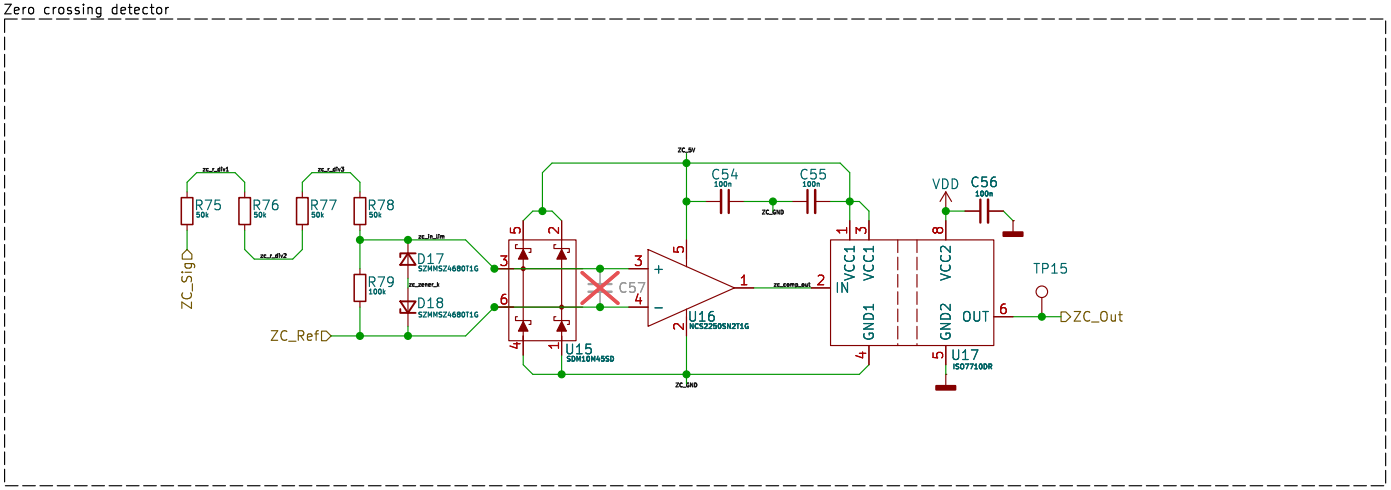
Isolated dc voltage source with reference voltage for detection



Zero crossing detector



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		Roland Molnar		
		Document type: Electrical schematic	Document status: In testing	
		Title, Supplementary title: Zero crossing detection		

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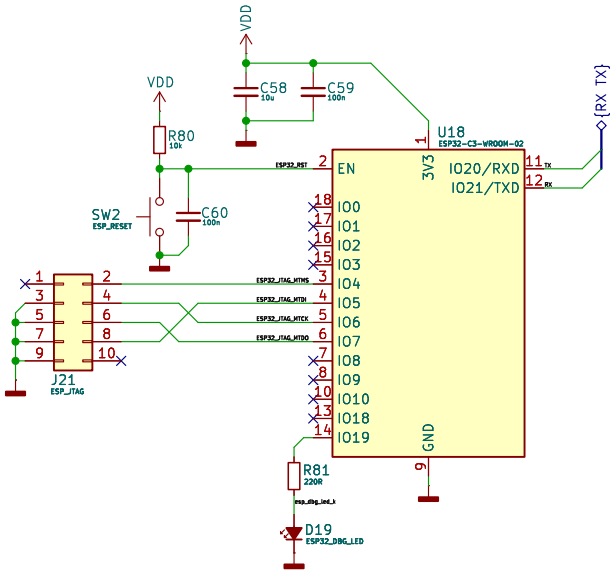

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		Document type: Electrical schematic	Document status: In testing	
		Title, Supplementary title: Wireless connectivity		

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