SIL2 SL-DEOD (Shalom-DE-railment and Obstacle Detector) Control Unit Board Revision History

회로도 Version	PCB Version	변경일	변경내역
V1.0	V1.0	2024년 10월 23일	Initial Release for Rev 1.0

Approved			Title	SL-DEOD/DEPC Control Board		
Checked	-		Sub Title	REVISION HISTORY		
Designed						
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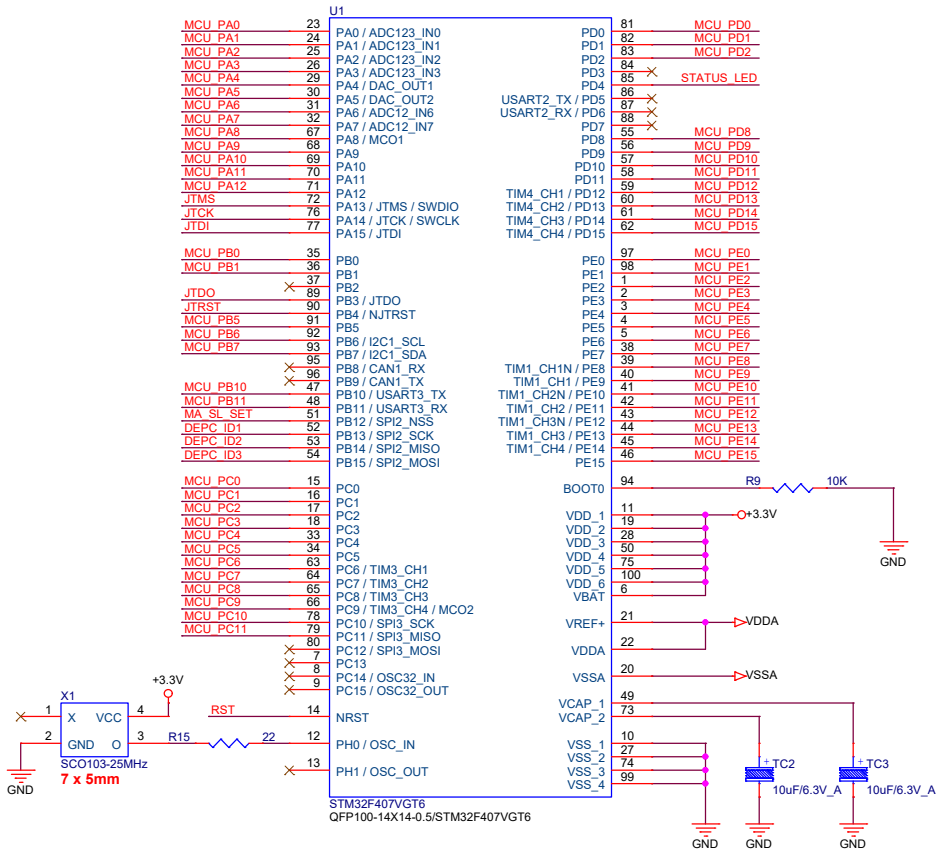
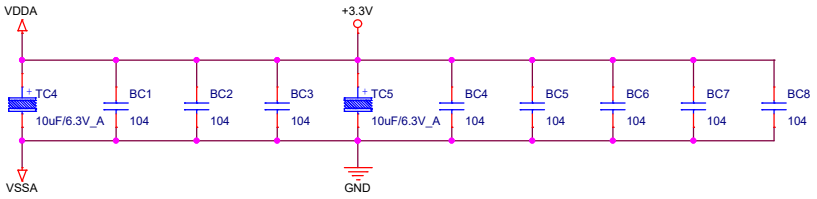
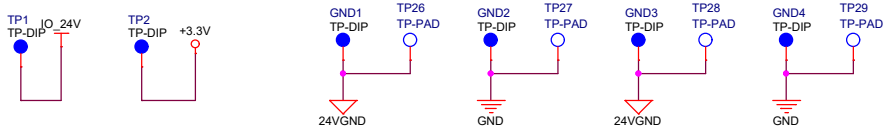
STM32F407VGT6 ARM M4 MCU



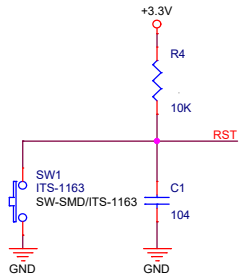


BP5V P3.3V TP와 GND1,2은 3MM 간격으로 모아서 배치
GND3,4는 GND1,2 반대편에 배치

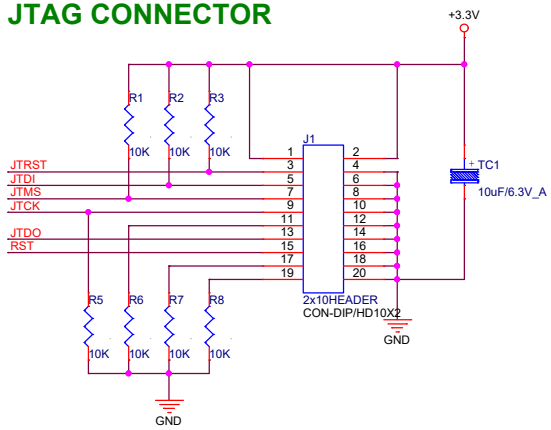
*** Note : 전원 테스트 포인트에 "24VGND" 및 "GND" SILK 표기**



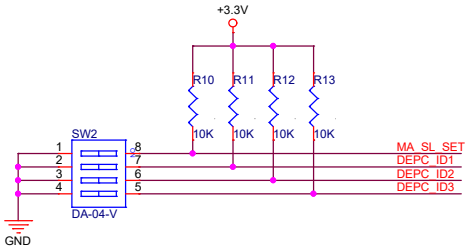
MCU RESET SWITCH



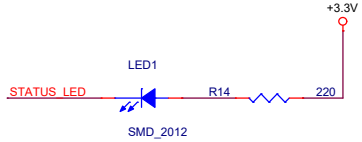
JTAG CONNECTOR



CONFIG SETUP DIP SW.



STATUS LED

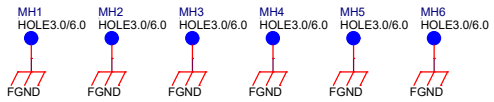


PIN ASSIGN

MCU_PD0	WDT_DATA	4
MCU_PD1	WDT_OK	4
MCU_PD2	PWR_OK_CPU	4
MCU_PA0	SN1_ADC	6
MCU_PA1	SN2_ADC	6
MCU_PA2	SN3_ADC	7
MCU_PA3	SN4_ADC	7
MCU_PE0	LED_RUN	4
MCU_PE1	LED_HLT	4
MCU_PE2	LED_485_ERR	4
MCU_PE3	LED_EB	4
MCU_PE4	LED_HCR	4
MCU_PE5	LED_PC_ERR	4
MCU_PE6	LED_DEPC	4
MCU_PA4	LED_OBR	4
MCU_PA5	LED_OBL	4
MCU_PA6	LED_DER	4
MCU_PA7	LED_DEL	4
MCU_PB0	LED_485_TX	4
MCU_PB1	LED_485_RX	4
MCU_PB6	TEMP_SCL	4
MCU_PB7	TEMP_SDA	4
MCU_PB10	MCU_USB_TX	4
MCU_PB11	MCU_USB_RX	4
MCU_PB5	HCR_IN	4

MCU_PC0	MCU_SN1_OSSD1	6
MCU_PC1	MCU_SN1_OSSD2	6
MCU_PC2	MCU_SN2_OSSD1	6
MCU_PC3	MCU_SN2_OSSD2	6
MCU_PC4	MCU_SN3_OSSD1	6
MCU_PC5	MCU_SN3_OSSD2	6
MCU_PC6	MCU_SN4_OSSD1	6
MCU_PC7	MCU_SN4_OSSD2	6
MCU_PE7	RY_EB1	5
MCU_PE8	RY_EB2	5
MCU_PE9	RY_DEPC	5
MCU_PE10	RY_HLT	5
MCU_PE11	RY_OBR	5
MCU_PE12	RY_DER	5
MCU_PE13	RY_OBL	5
MCU_PE14	RY_DEL	5
MCU_PD8	RY_EB1_FB	5
MCU_PD9	RY_EB2_FB	5
MCU_PD10	RY_DEPC_FB	5
MCU_PD11	RY_HLT_FB	5
MCU_PD12	RY_OBR_FB	5
MCU_PD13	RY_DER_FB	5
MCU_PD14	RY_OBL_FB	5
MCU_PD15	RY_DEL_FB	5

MCU_PC8	MCU_TEST1_ON	6
MCU_PC9	MCU_TEST2_ON	6
MCU_PC10	MCU_TEST3_ON	7
MCU_PC11	MCU_TEST4_ON	7
MCU_PE15	SENSOR_PWR_ON	7
MCU_PA8	UART1_TXE	4
MCU_PA9	UART1_TX	4
MCU_PA10	UART1_RX	4
MCU_PA11	DO_FLT1	5
MCU_PA12	DO_FLT2	5



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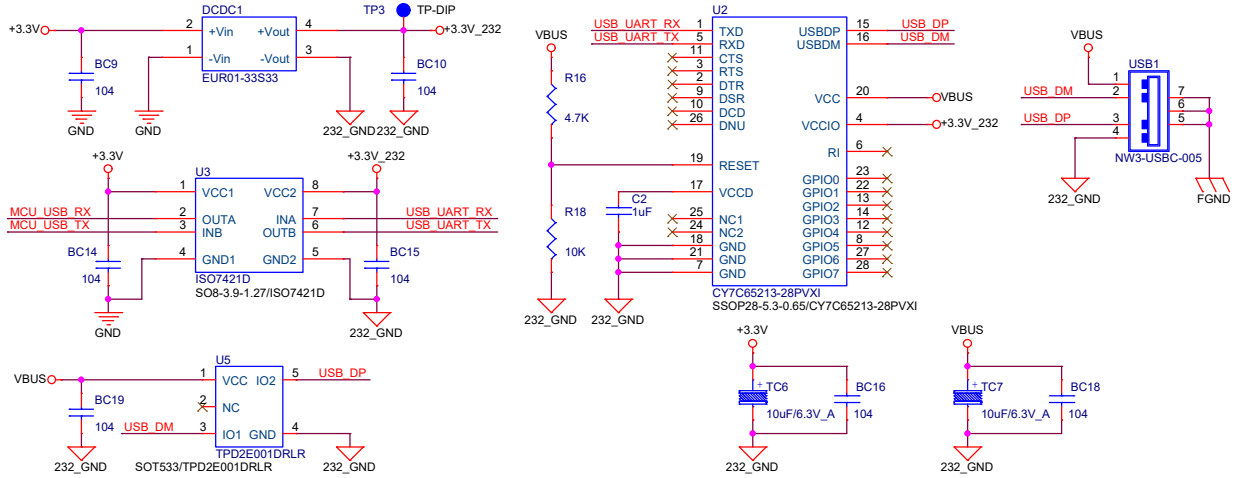
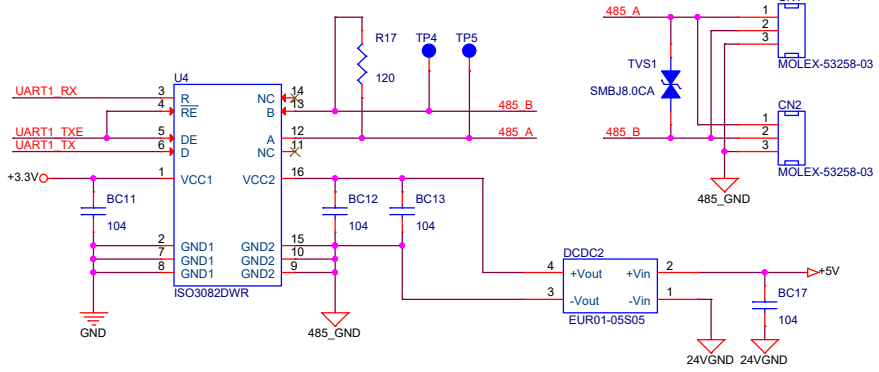
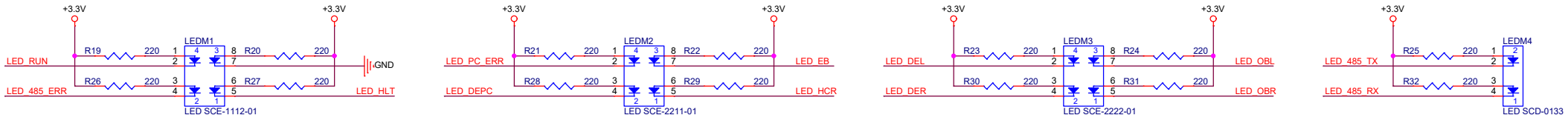
ISOLATED USB-UART INTERFACE (115200bps)



ISOLATED RS-485 INTERFACE (19200bps)

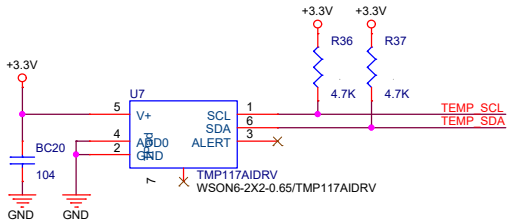


FRONT LED MODULE



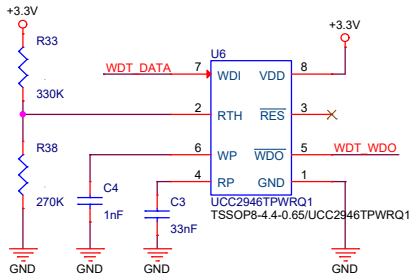
TEMPERATURE SENSOR

Note : The thermal pad shall not be connected anywhere.

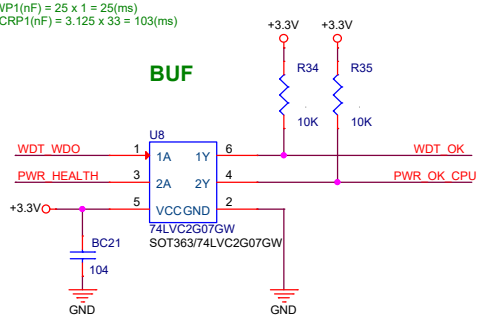


WATCH-DOG TIMER

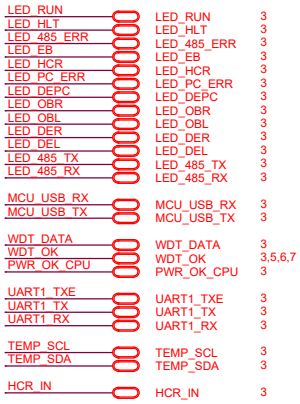
RESET TRIP VOLTAGE = 2.75V
WDT PERIOD(ms) = 25 x CWP1(nF) = 25 x 1 = 25(ms)
RST PERIOD(ms) = 3.125 x CRP1(nF) = 3.125 x 33 = 103(ms)



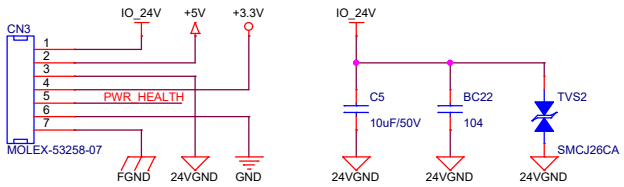
BUF



PIN ASSIGN

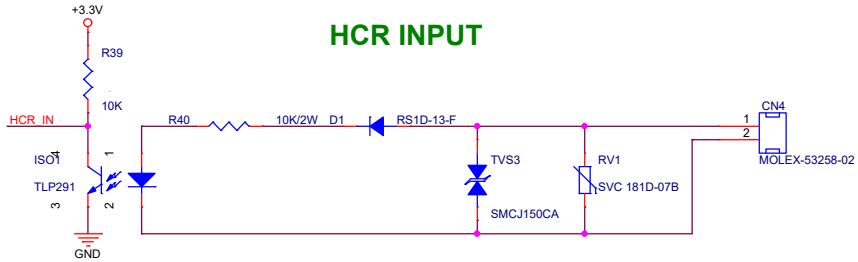


POWER INPUT & PROTECTION



3225 Size

HCR INPUT



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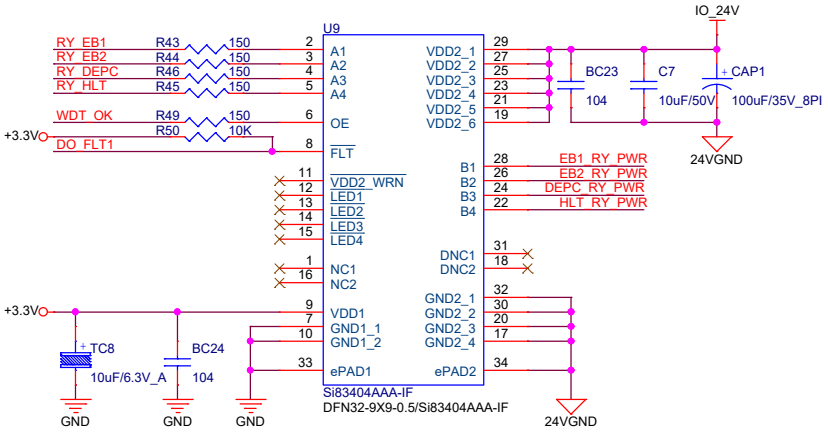
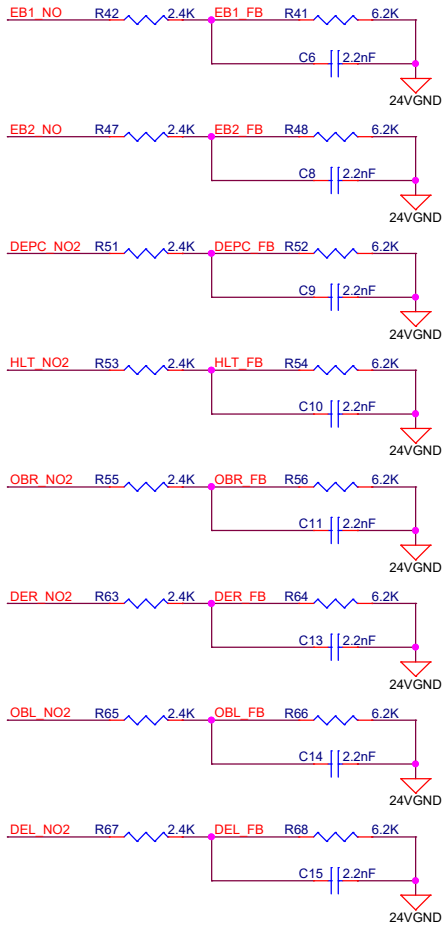
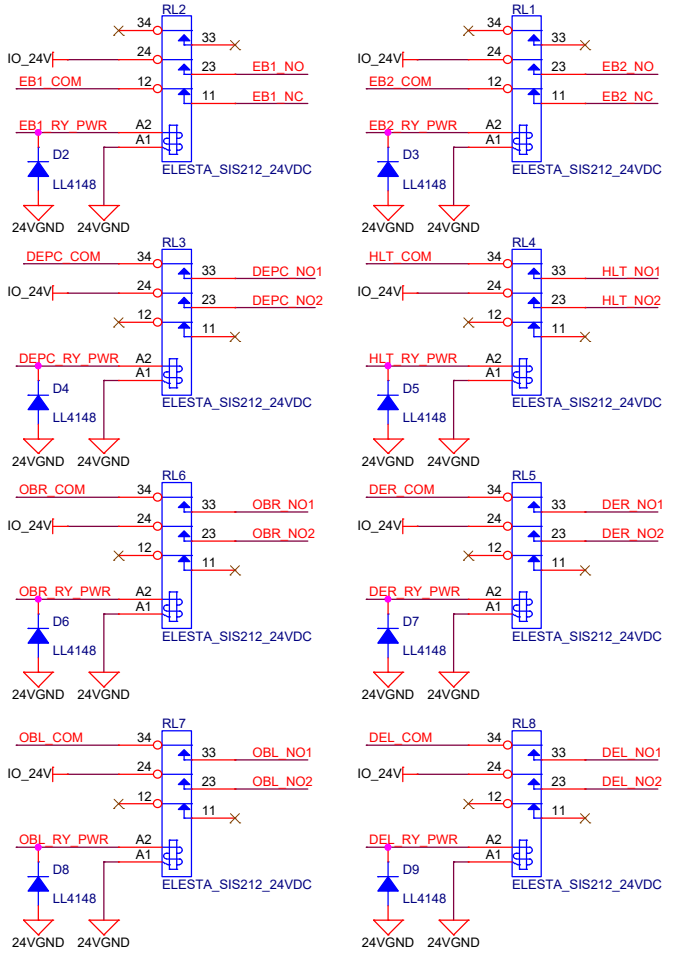
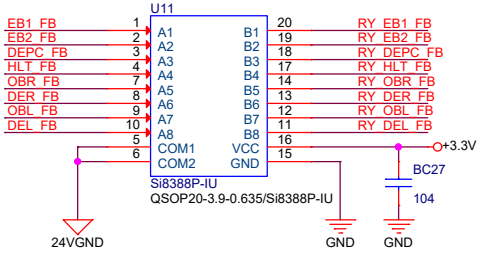
DIGITAL OUTPUT ISOLATOR



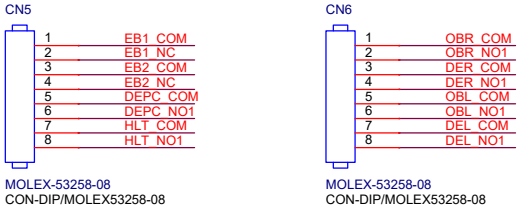




DIGITAL INPUT ISOLATOR



RELAY OUTPUT CONNECTOR



PIN ASSIGN

RY_EB1	RY_EB1	3
RY_EB2	RY_EB2	3
RY_DEPC	RY_DEPC	3
RY_HLT	RY_HLT	3
RY_OBR	RY_OBR	3
RY_DER	RY_DER	3
RY_OBL	RY_OBL	3
RY_DEL	RY_DEL	3
DO_FLT1	DO_FLT1	3
DO_FLT2	DO_FLT2	3

RY_EB1_FB	RY_EB1_FB	3
RY_EB2_FB	RY_EB2_FB	3
RY_DEPC_FB	RY_DEPC_FB	3
RY_HLT_FB	RY_HLT_FB	3
RY_OBR_FB	RY_OBR_FB	3
RY_DER_FB	RY_DER_FB	3
RY_OBL_FB	RY_OBL_FB	3
RY_DEL_FB	RY_DEL_FB	3
WDT_OK	WDT_OK	3,4,6,7

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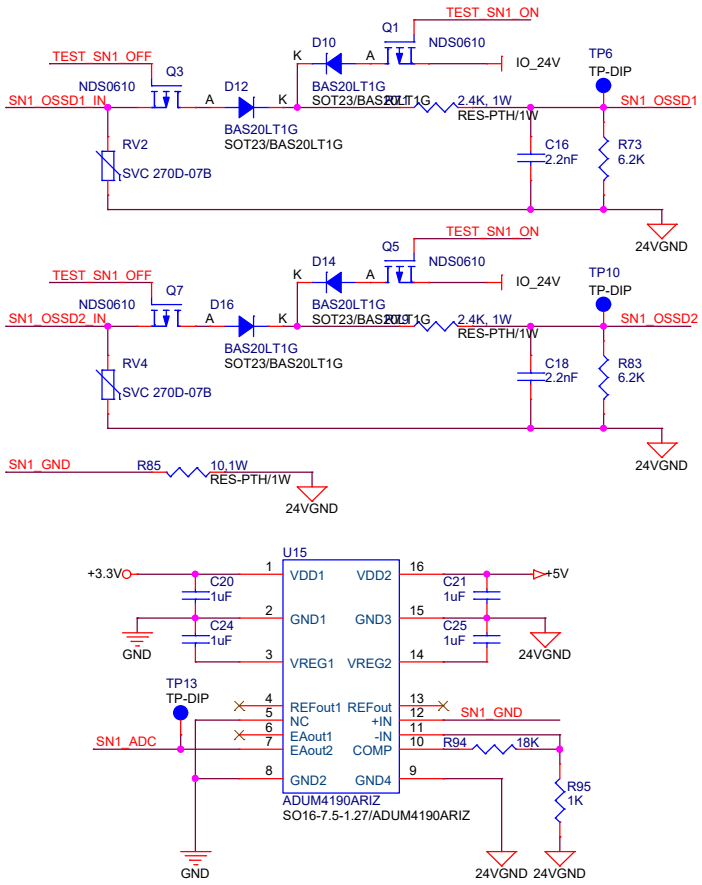
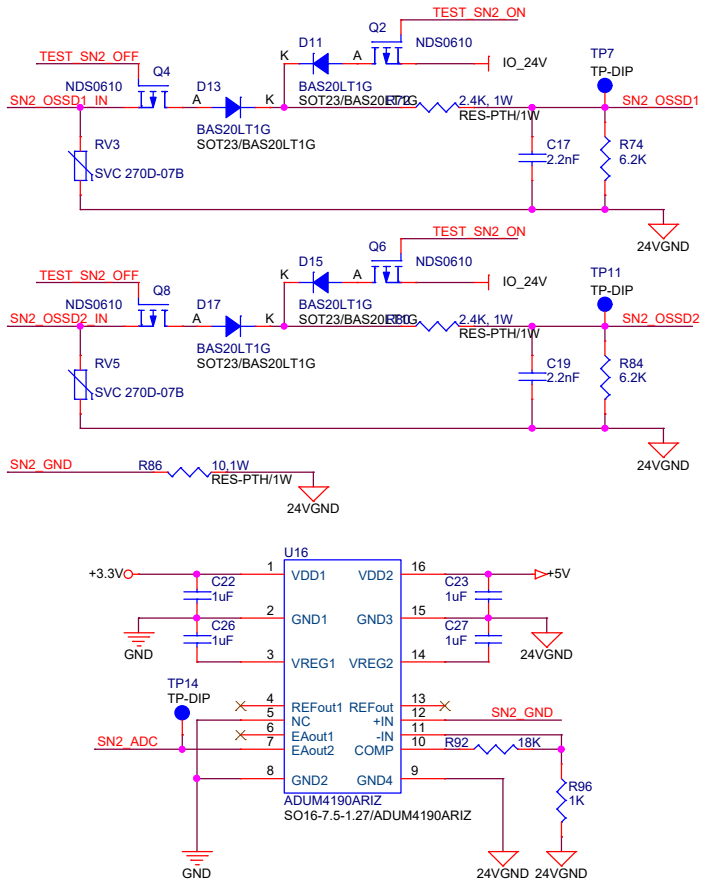
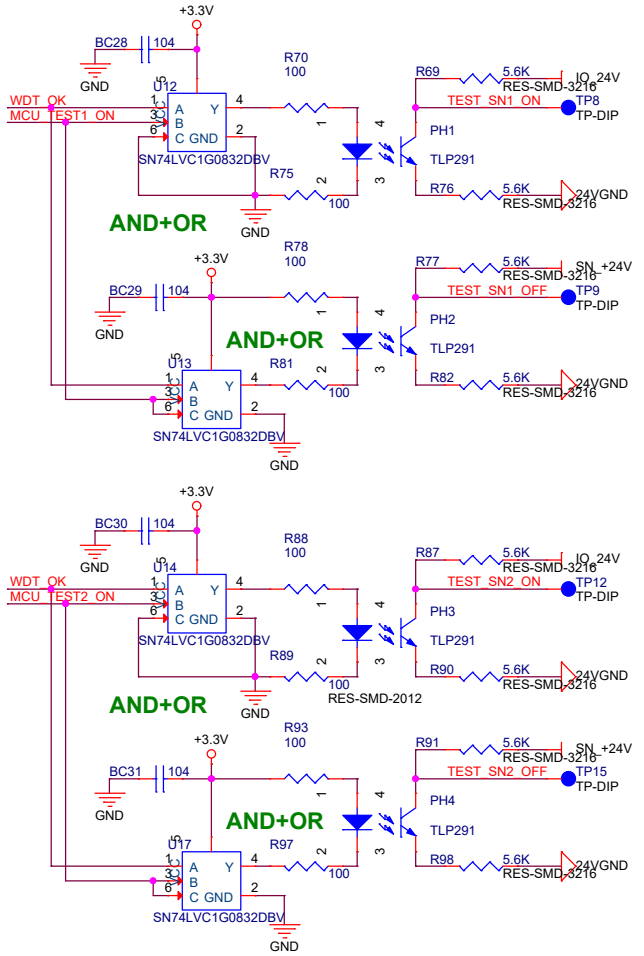
SAFETY SENSOR INPUT #1 (OSSD)



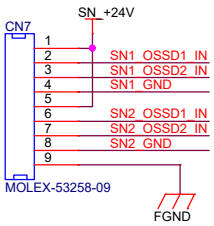
SAFETY SENSOR INPUT #2 (OSSD)



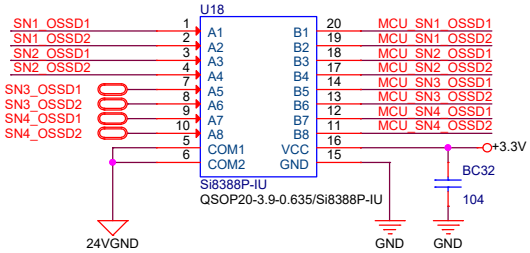
TEST LOGIC [SENSOR #1/#2]



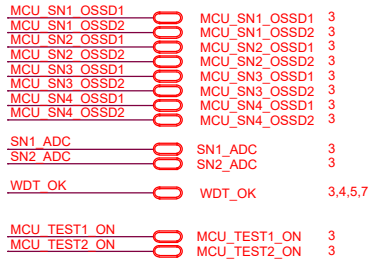
SN1, SN2 CONNECTOR



DIGITAL INPUT ISOLATOR



PIN ASSIGN



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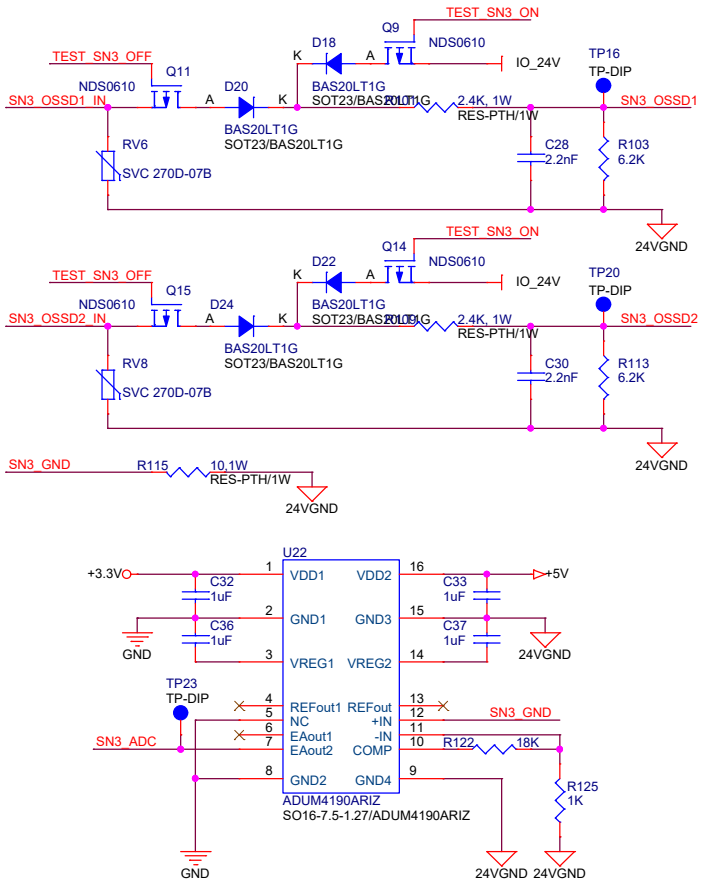
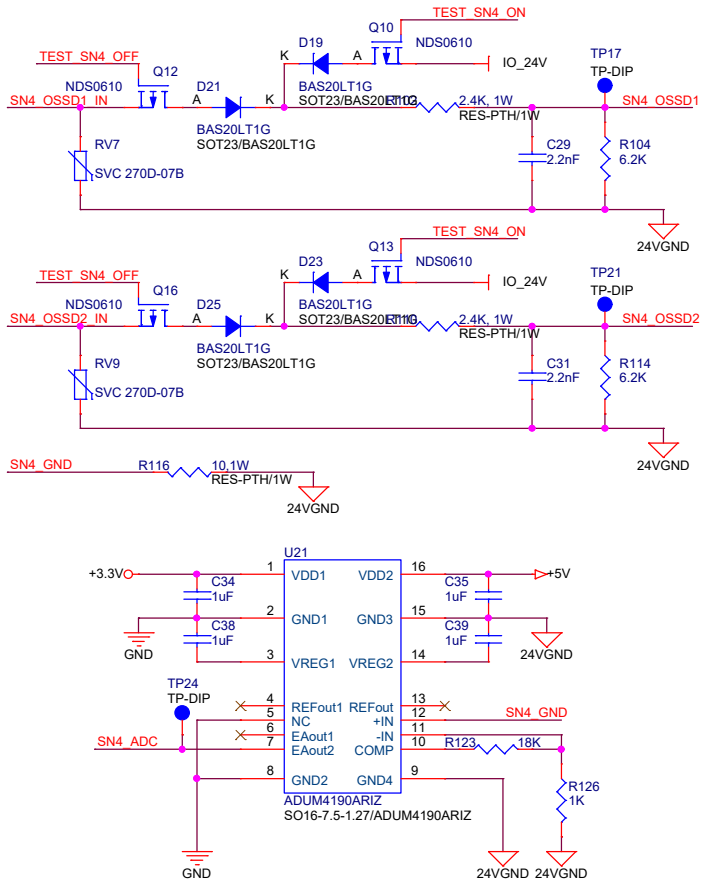
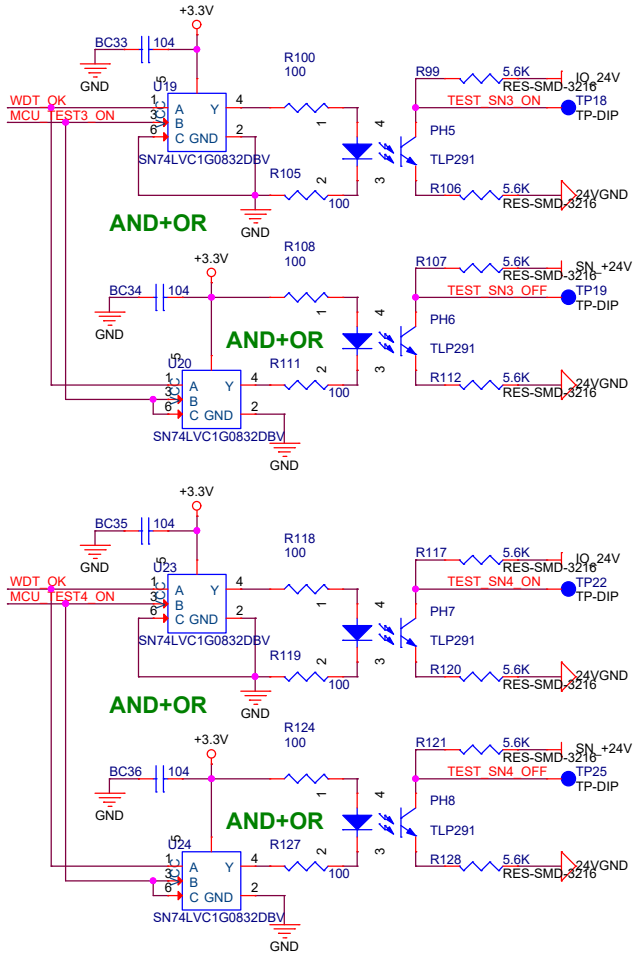
SAFETY SENSOR INPUT #3 (OSSD)



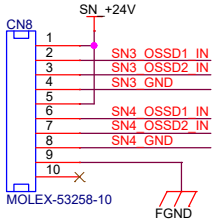
SAFETY SENSOR INPUT #4 (OSSD)



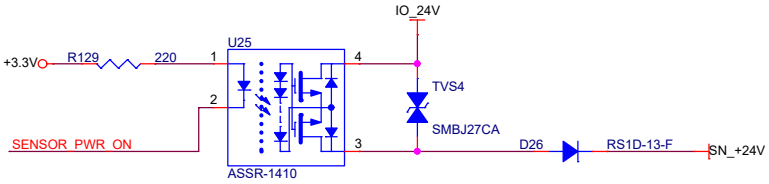
TEST LOGIC [SENSOR #3/#4]



SN3, SN4 CONNECTOR



SENSOR POWER CONTROL



PIN ASSIGN

SN3_OSSD1	SN3_OSSD1	6	
SN3_OSSD2	SN3_OSSD2	6	
SN4_OSSD1	SN4_OSSD1	6	
SN4_OSSD2	SN4_OSSD2	6	
SN3_ADC	SN3_ADC	3	
SN4_ADC	SN4_ADC	3	

WDT_OK	WDT_OK	3,4,5,6
MCU_TEST3_ON	MCU_TEST3_ON	3
MCU_TEST4_ON	MCU_TEST4_ON	3
SENSOR_PWR_ON	SENSOR_PWR_ON	3

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