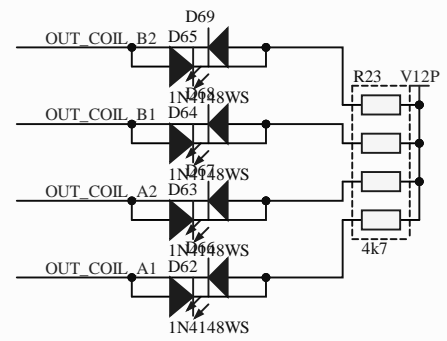
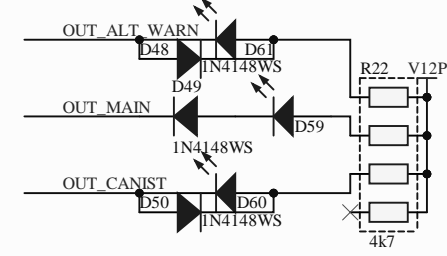
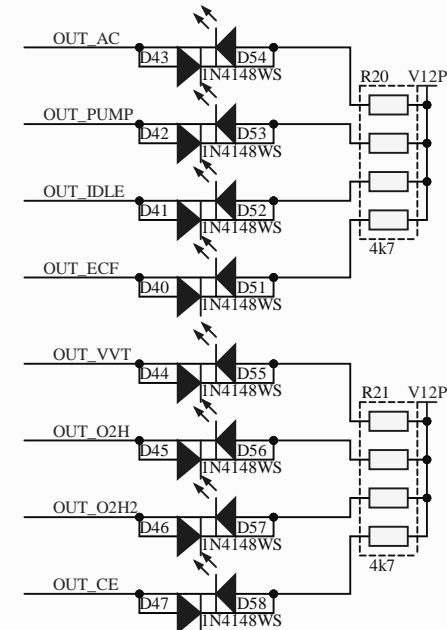
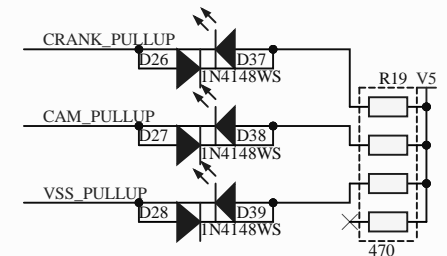
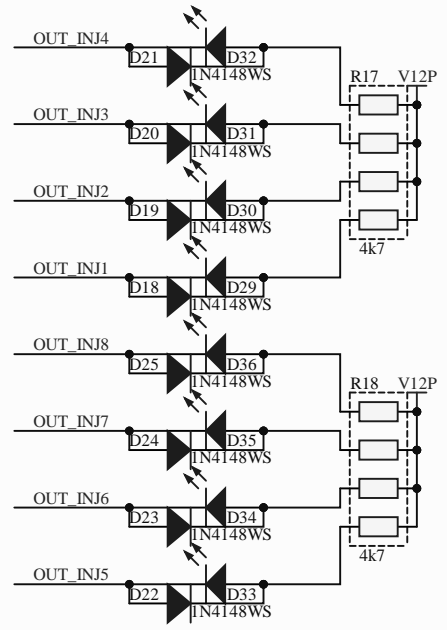
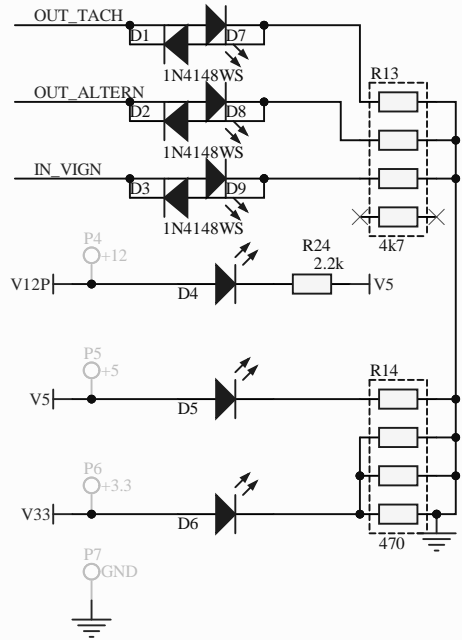
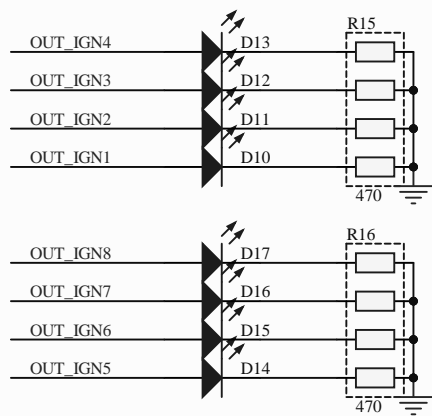


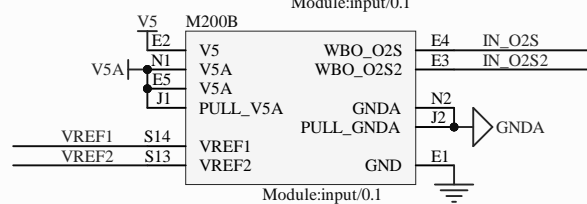
TE-1123038-2

Title: Hellen 72		rusEFI EMS Hellen-One Platform https://rusefi.com/s/hellen72		
Size: A3	Author: andreika	Revision: c		
Date: 22.03.2021	Sheet 1 of 2			

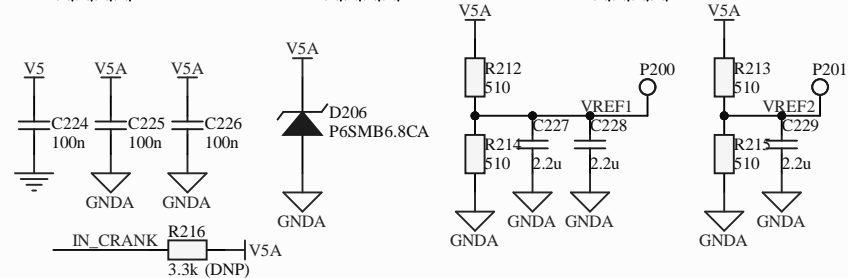
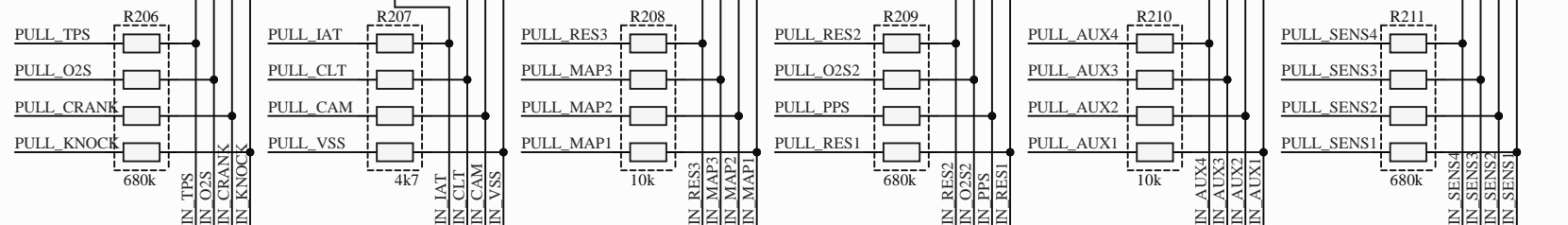
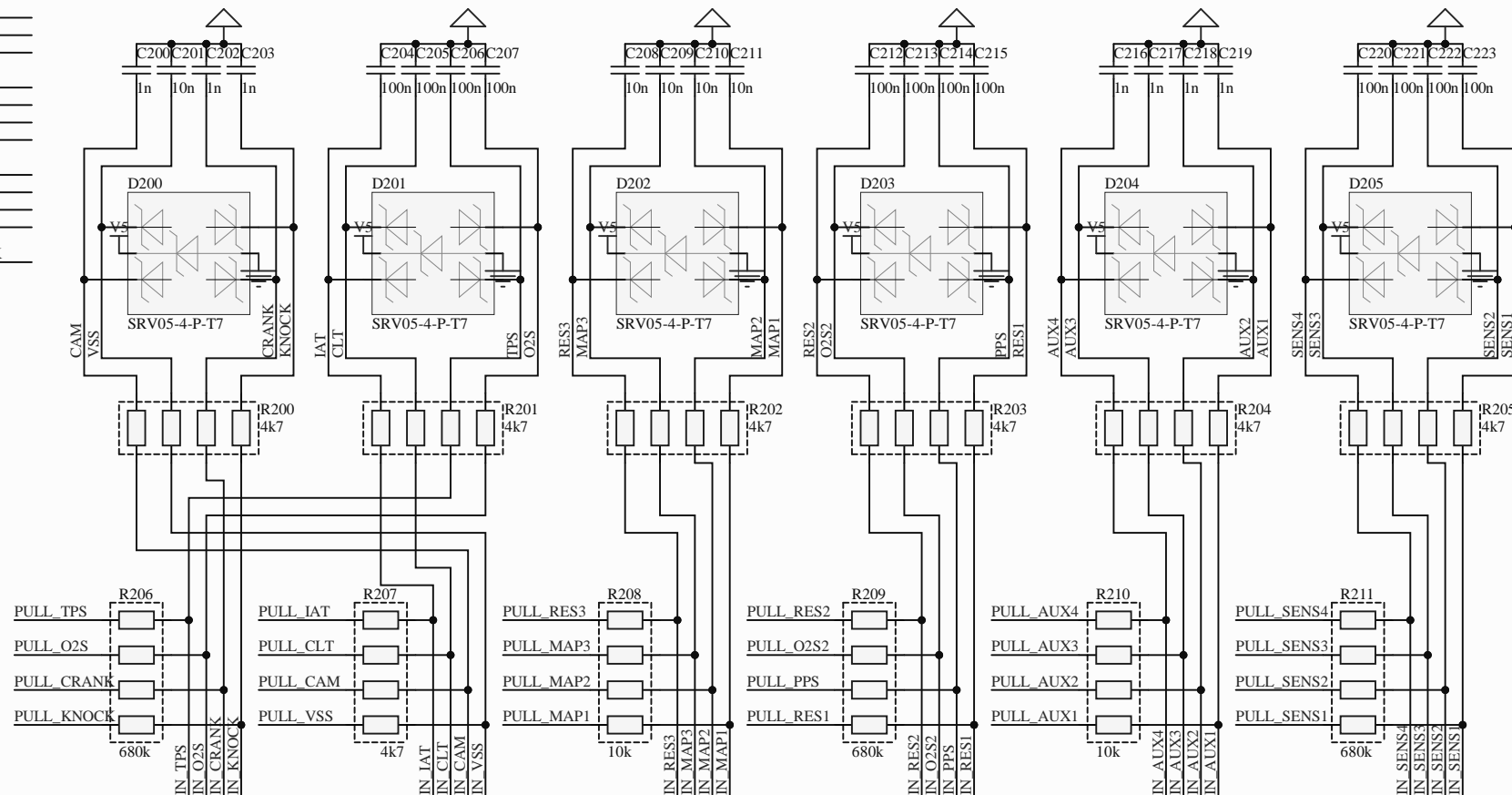


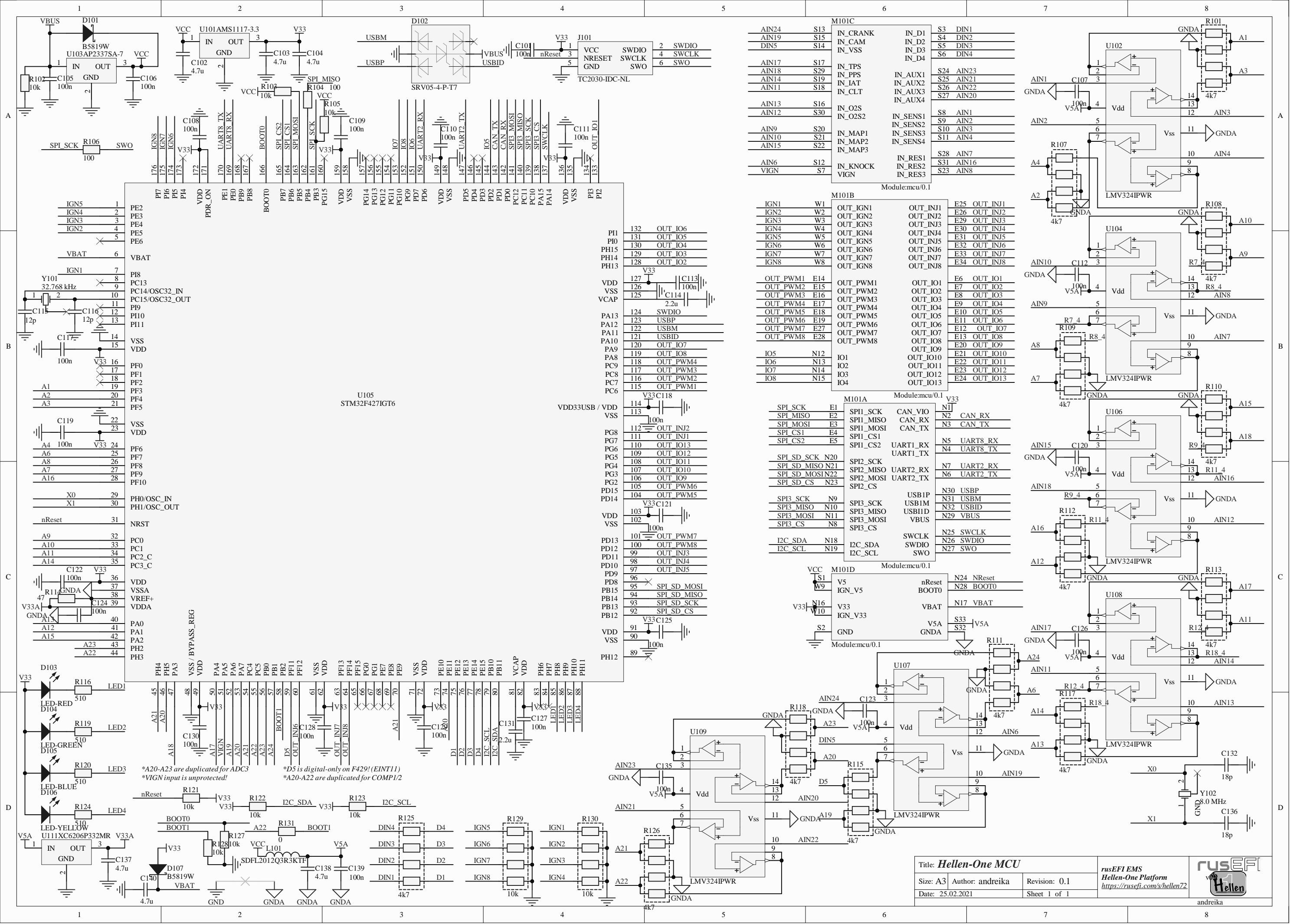
M200D			
PULL_CRANK	J21	PULL_CRANK	PULL_MAP1
PULL_CAM	J17	PULL_CAM	PULL_MAP2
PULL_VSS	J18	PULL_VSS	PULL_MAP3
PULL_TPS	J19	PULL_AUX1	J10
PULL_PPS	J5	PULL_AUX2	J9
PULL_IAT	J15	PULL_AUX3	J8
PULL_CLT	J16	PULL_AUX4	J7
PULL_O2S	J20	PULL_SENS1	J26
PULL_O2S2	J4	PULL_SENS2	J25
PULL_RES1	J6	PULL_SENS3	J24
PULL_RES2	J3	PULL_SENS4	J23
PULL_RES3	J11	PULL_KNOCK	J22

M200C			
IN_CRANK	S8	IN_MAP1	S11
IN_CAM	S5	IN_MAP2	S12
IN_VSS	S6	IN_MAP3	S19
IN_TPS	S10	IN_AUX1	S17
IN_PPS	S24	IN_AUX2	S18
IN_IAT	S16	IN_AUX3	S20
IN_CLT	S15	IN_AUX4	S21
IN_O2S	S9	IN_SENS1	S1
IN_O2S2	S25	IN_SENS2	S2
IN_RES1	S23	IN_SENS3	S3
IN_RES2	S26	IN_SENS4	S4
IN_RES3	S22	IN_KNOCK	S7



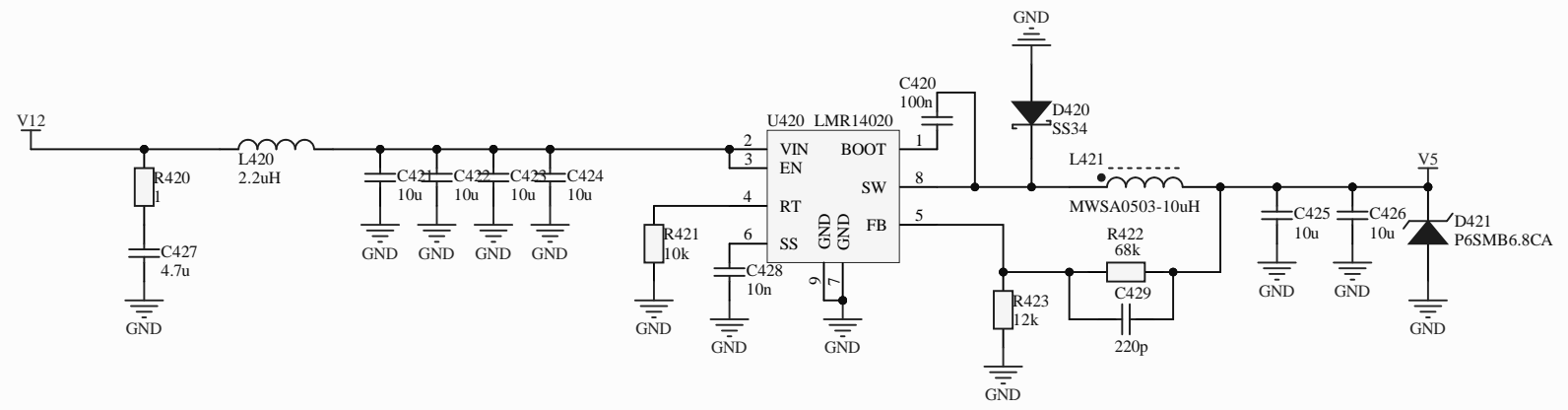
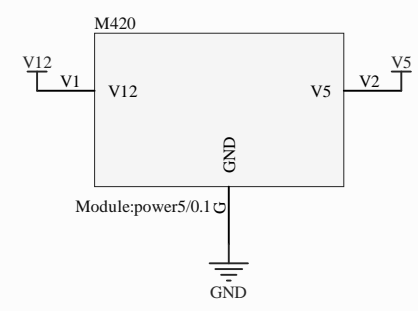
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CRANK	N21	MAP1	N14
CAM	N19	MAP2	N13
VSS	N20	MAP3	N12
TPS	N17	AUX1	N10
PPS	N5	AUX2	N9
IAT	N15	AUX3	N8
CLT	N16	AUX4	N7
O2S	N18	SENS1	N26
O2S2	N4	SENS2	N25
RES1	N6	SENS3	N24
RES2	N3	SENS4	N23
RES3	N11	KNOCK	N22

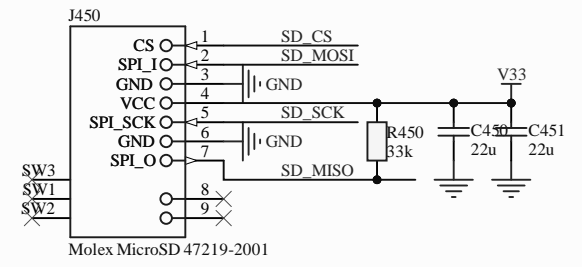
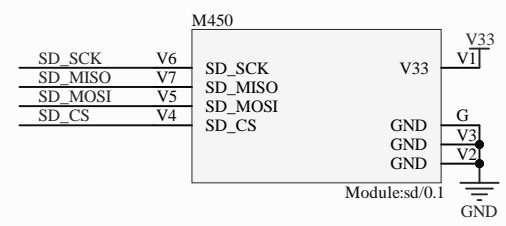


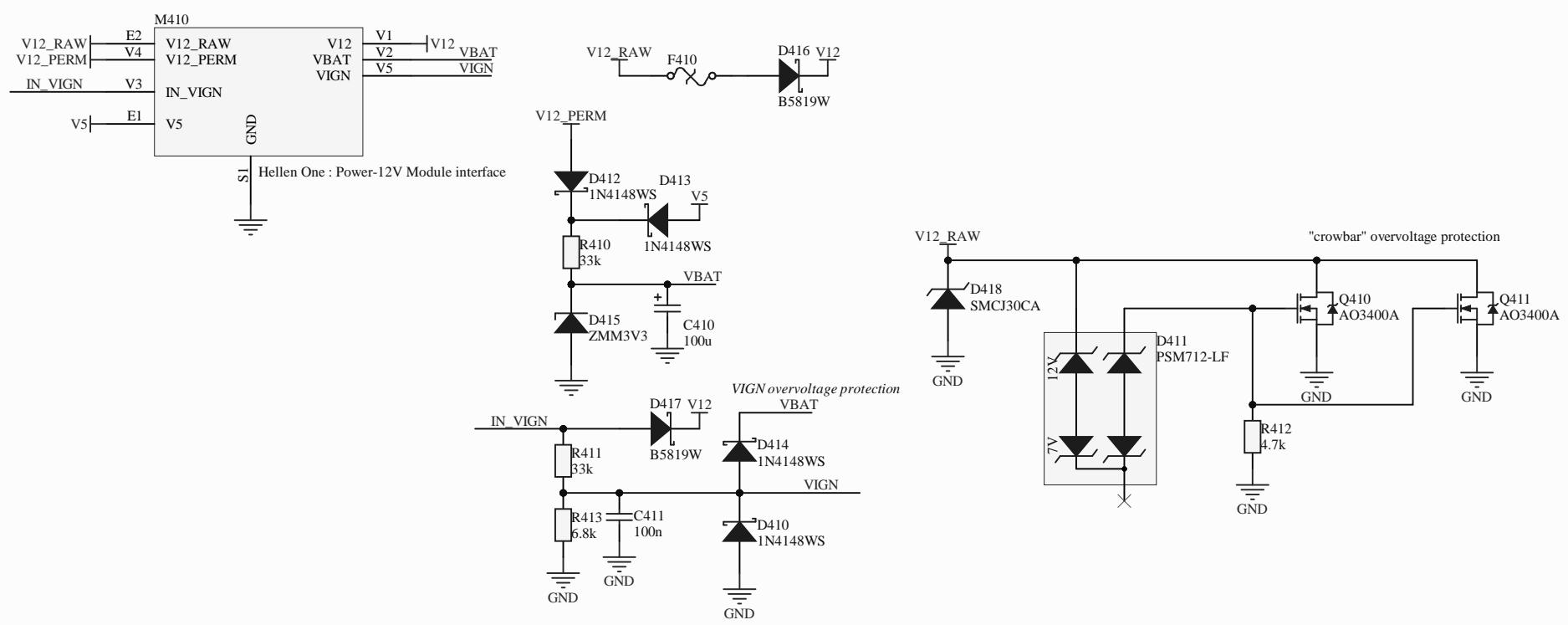


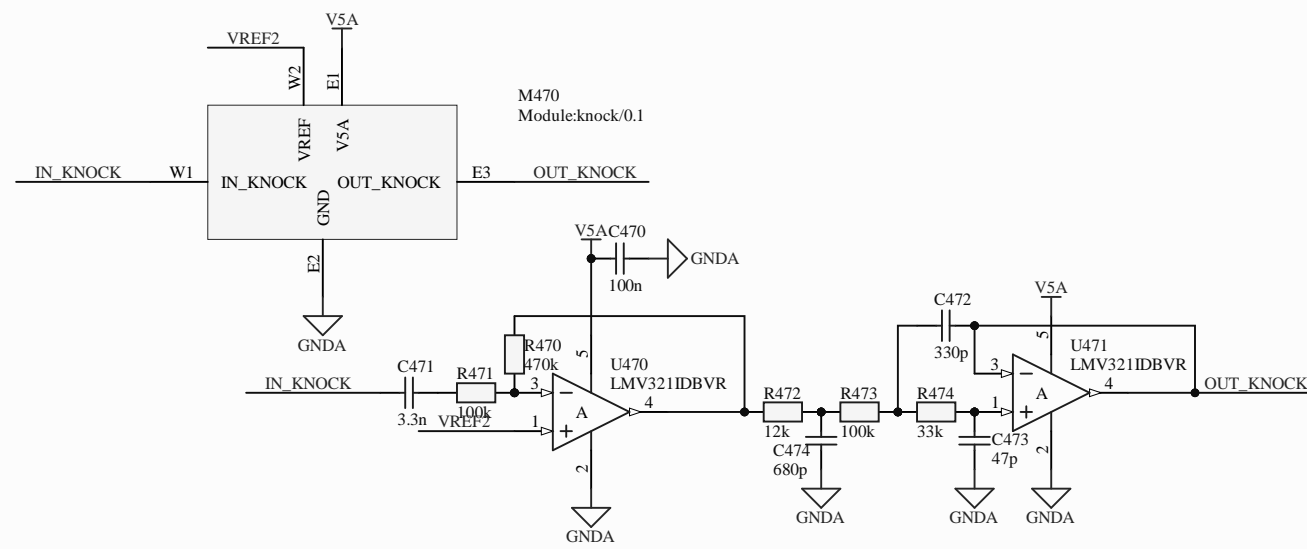
IGN5	1	PE2	132	OUT_IO6	PH1
IGN4	2	PE3	131	OUT_IO5	PH0
IGN3	3	PE4	130	OUT_IO4	PH15
IGN2	4	PE5	129	OUT_IO3	PH14
	5	PE6	128	OUT_IO2	PH13
VBAT	6	VBAT	VDD	127	V33
IGN1	7	PI8	VSS	126	C113
Y101	8	PC13	VCAP	125	C114
PC14/OSC32_IN	9	PC15/OSC32_OUT	PA13	124	SWDIO
PI9	10	PI10	PA12	123	USBP
PI11	11	PI10	PA11	122	USBM
	12	PI11	PA10	121	USBID
	13	PI11	PA9	120	OUT_IO7
VSS	14	VSS	PA8	119	OUT_IO8
VDD	15	VDD	PA8	118	OUT_PWM4
	16	PF0	PC9	117	OUT_PWM3
	17	PF1	PC8	116	OUT_PWM2
	18	PF2	PC7	115	OUT_PWM1
	19	PF3	PC6		
	20	PF4			
	21	PF5			
	22	PF6			
	23	PF7			
	24	PF8			
	25	PF9			
	26	PF10			
	27	PF10			
	28	PF10			
X0	29	PH0/OSC_IN			
X1	30	PH1/OSC_OUT			
nReset	31	NRST			
A9	32	PC0			
A10	33	PC1			
A11	34	PC2_C			
A14	35	PC3_C			
	36	VDD			
	37	VSSA			
	38	VREF+			
	39	VDDA			
	40	PA0			
	41	PA1			
	42	PA2			
	43	PH2			
	44	PH3			
	45	PH4			
	46	PH5			
	47	PA3			
	48	VSS / BYPASS_REG			
	49	VDD			
	50	PA4			
	51	PA5			
	52	PA6			
	53	PA7			
	54	PA8			
	55	PC4			
	56	PC5			
	57	PC6			
	58	PC7			
	59	PC8			
	60	PC9			
	61	PC10			
	62	PC11			
	63	PC12			
	64	PC13			
	65	PC14			
	66	PC15			
	67	PG0			
	68	PG1			
	69	PG2			
	70	PG3			
	71	PG4			
	72	PG5			
	73	PG6			
	74	PG7			
	75	PG8			
	76	PG9			
	77	PG10			
	78	PG11			
	79	PG12			
	80	PG13			
	81	PG14			
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	83	PG16			
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	85	PG18			
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	87	PG20			
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	92	PG25			
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	99	PG32			
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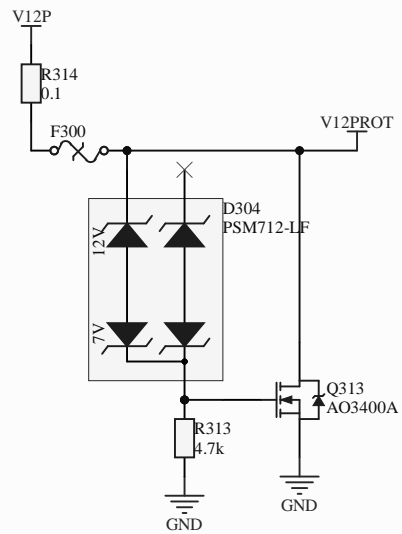
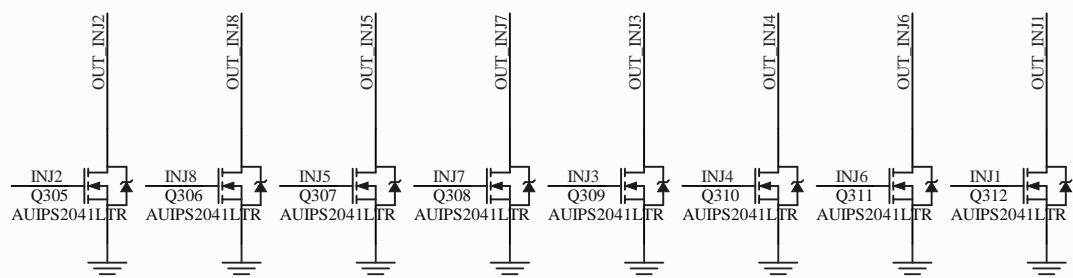
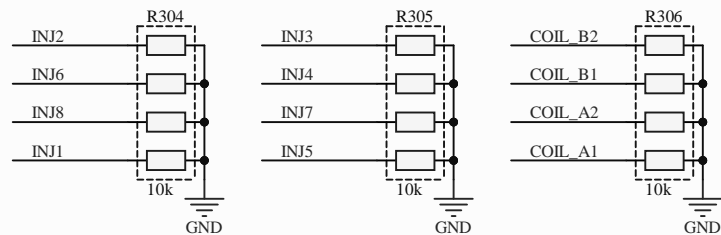
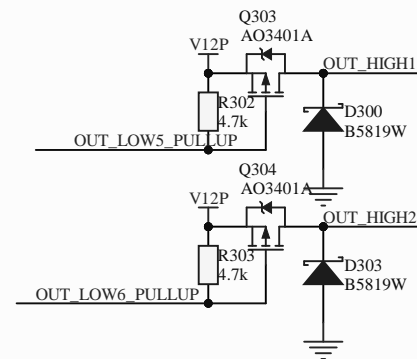
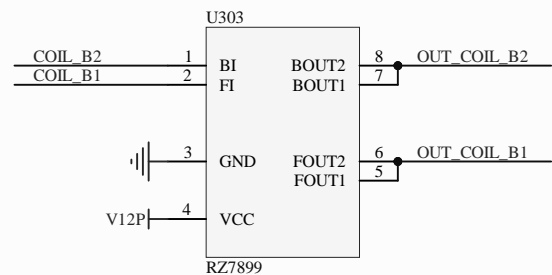
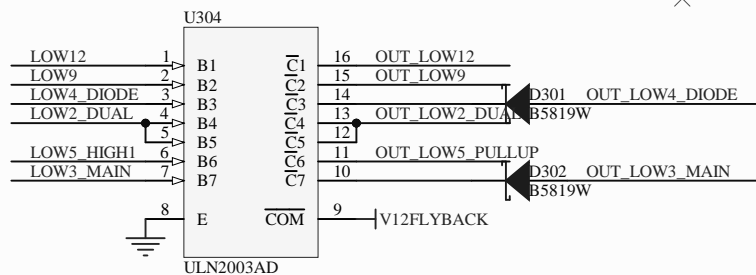
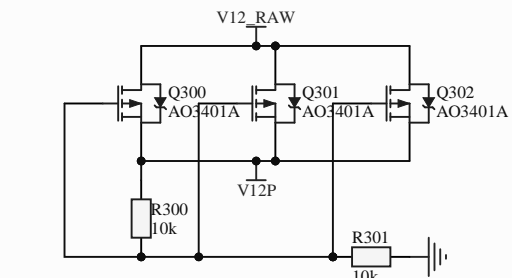
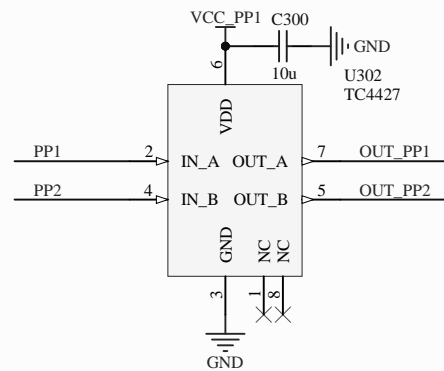
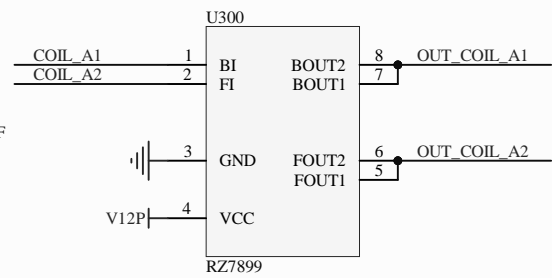
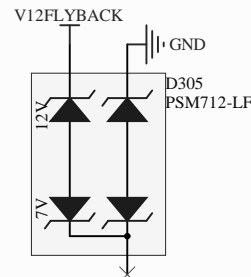
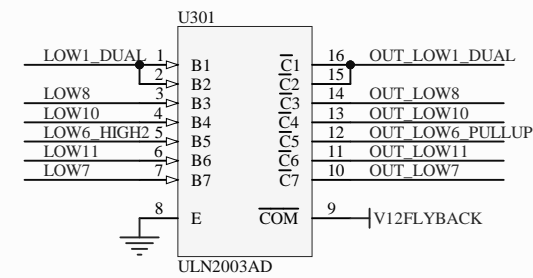
*A20-A23 are duplicated for ADC3
 *VIGN input is unprotected!
 *D5 is digital-only on F429! (EINT11)
 *A20-A22 are duplicated for COMP1/2



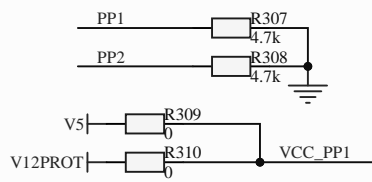
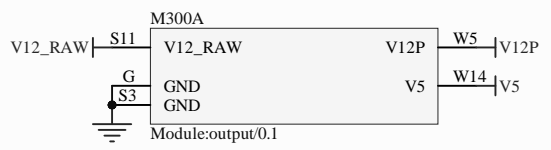
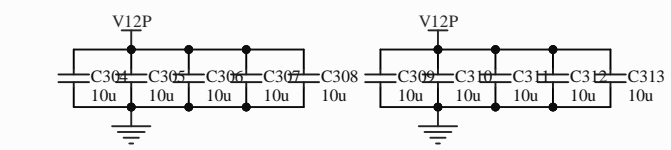




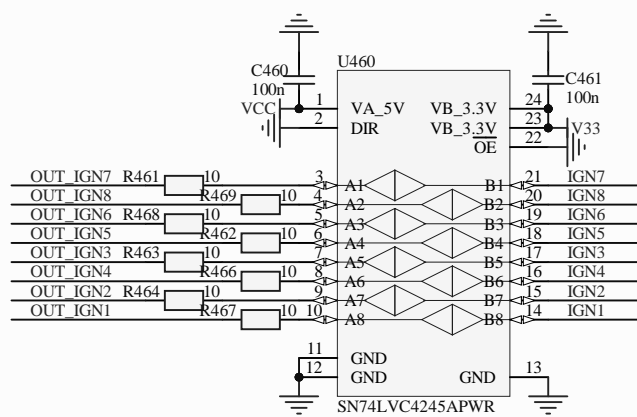
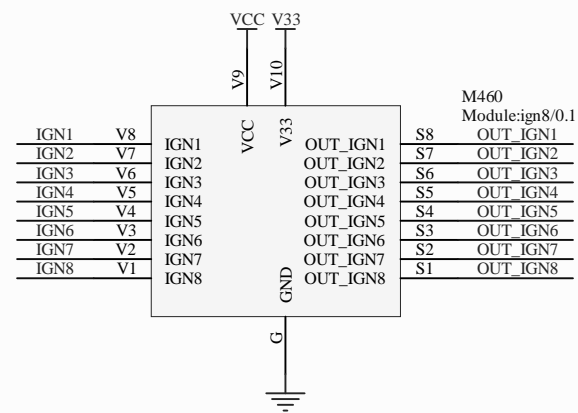


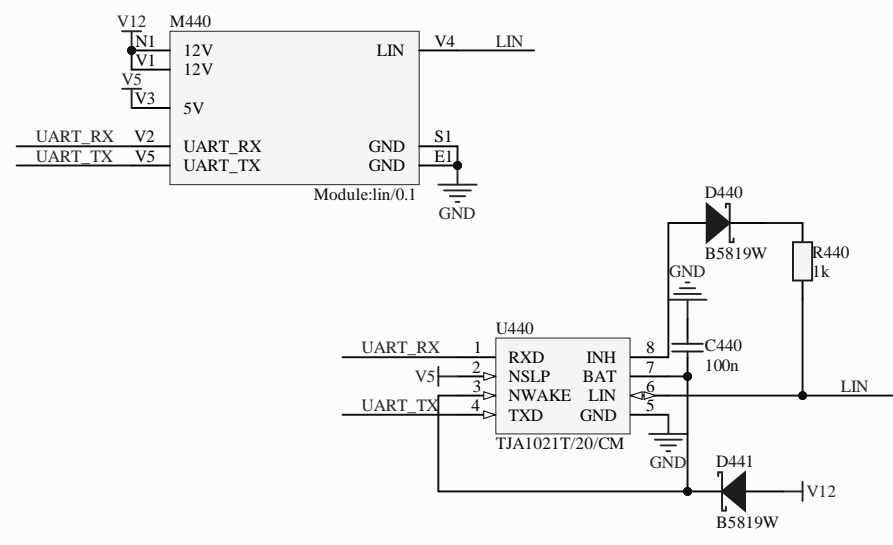


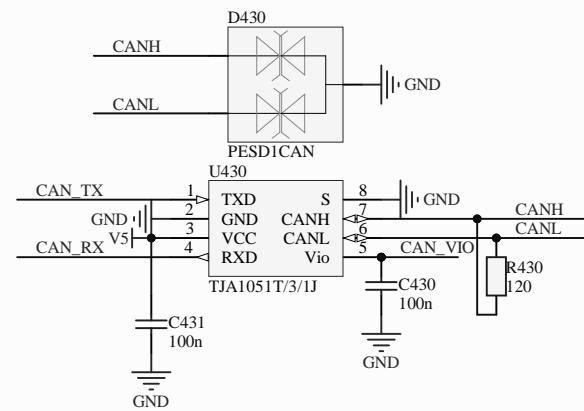
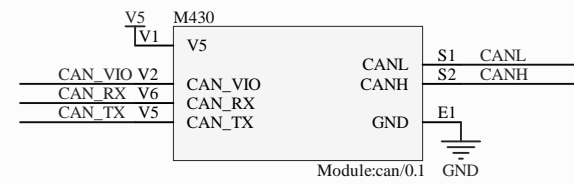
M300B			
INJ1	W24	INJ1	OUT_INJ1
INJ2	W23	INJ2	OUT_INJ2
INJ3	W20	INJ3	OUT_INJ3
INJ4	W19	INJ4	OUT_INJ4
INJ5	W18	INJ5	OUT_INJ5
INJ6	W17	INJ6	OUT_INJ6
INJ7	W16	INJ7	OUT_INJ7
INJ8	W15	INJ8	OUT_INJ8
LOW1_DUAL	W38	LOW1_DUAL	OUT_LOW1_DUAL
LOW2_DUAL	W34	LOW2_DUAL	OUT_LOW2_DUAL
LOW3_MAIN	W40	LOW3_MAIN	OUT_LOW3_MAIN
LOW4_DIODE	W25	LOW4_DIODE	OUT_LOW4_DIODE
LOW5_HIGH1	W39	LOW5_HIGH1	OUT_LOW5_PULLUP
LOW6_HIGH2	W37	LOW6_HIGH2	OUT_LOW6_PULLUP
LOW7	W27	LOW7	OUT_LOW7
LOW8	W21	LOW8	OUT_LOW8
LOW9	W26	LOW9	OUT_LOW9
LOW10	W35	LOW10	OUT_LOW10
LOW11	W36	LOW11	OUT_LOW11
LOW12	W29	LOW12	OUT_LOW12
PP1	W28	PP1	OUT_PP1
PP2	W22	PP2	OUT_PP2
COIL_A1	W33	SOLENOID_A1	OUT_SOLENOID_A1
COIL_A2	W32	SOLENOID_A2	OUT_SOLENOID_A2
COIL_B1	W31	SOLENOID_B1	OUT_SOLENOID_B1
COIL_B2	W30	SOLENOID_B2	OUT_SOLENOID_B2
			OUT_HIGH1
			OUT_HIGH2

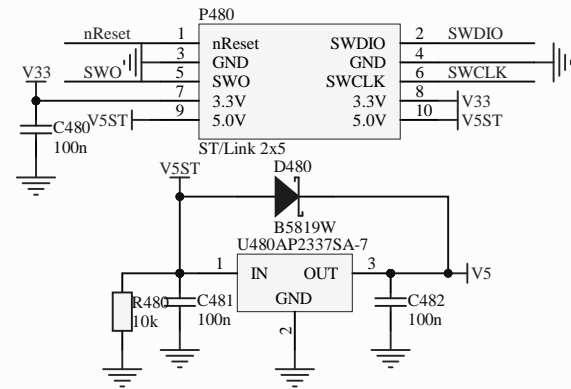
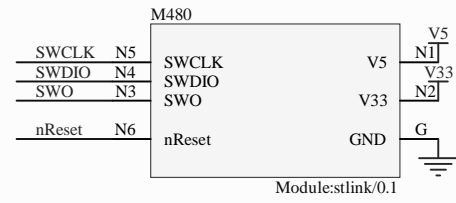


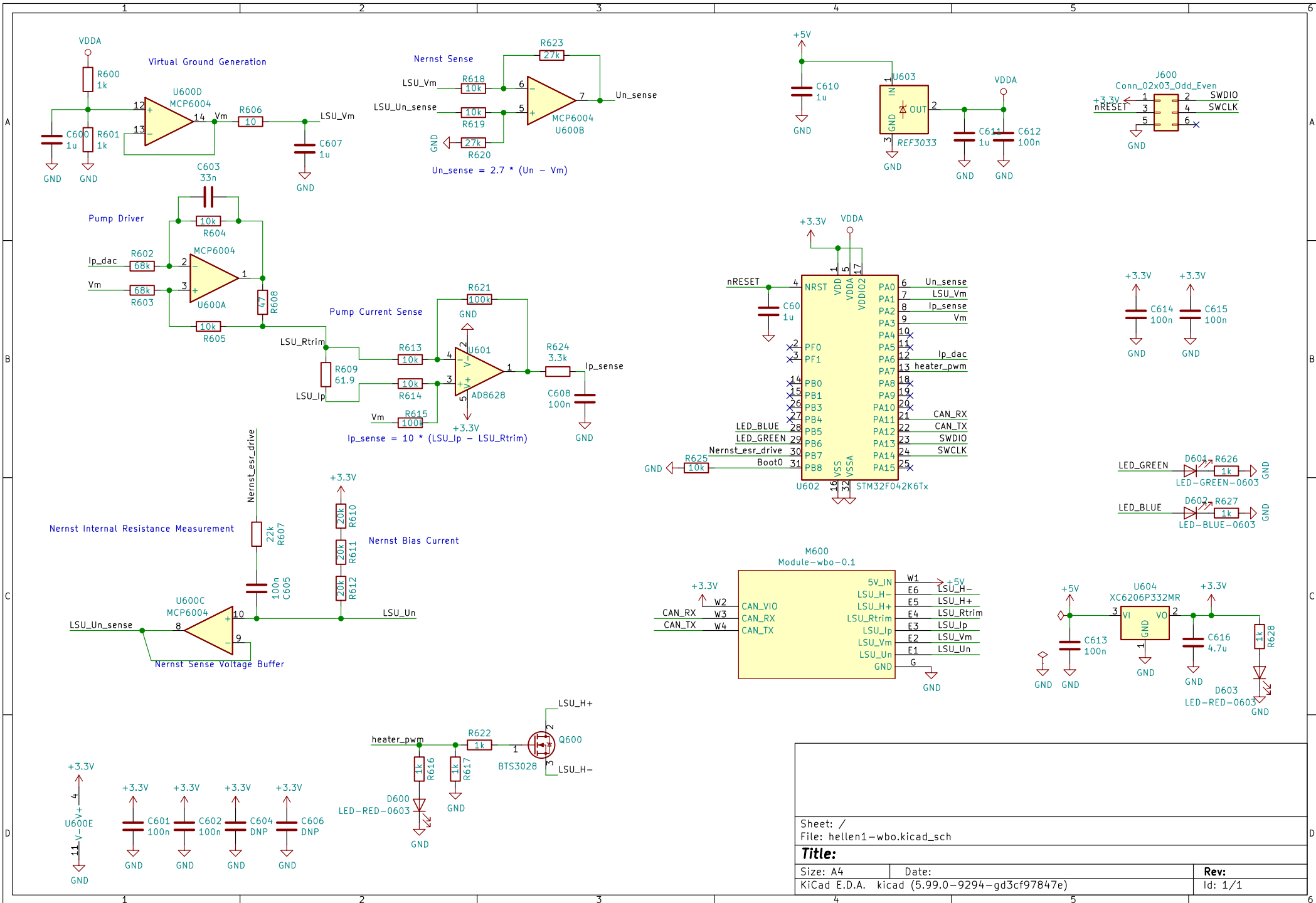
* These can be removed in the board compilation file











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Rev:	Id: 1/1